AGROBIODIVERSITY
A HERITAGE
OF RESOURCES,
COMMUNITIES
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OF LAZIO

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PROTECTION OF INDIGENOUS GENETIC RESOURCES OF AGRICULTURAL INTEREST

LAZIO REGIONAL LAW NO. 15 OF 1 MARCH 2000

Cofinanziato dall'Unione europea
REGIONE LAZIO
PSR LAZIO

ARSIAL
Agenzia Regionale per lo Sviluppo e l'Innovazione dell'Agricoltura del Lazio

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LAZIO REGION
Assessorato Agricoltura, Foreste, Promozione della Filiera e della Cultura del Cibo, Pari Opportunità
Via Rosa Raimondi Garibaldi, 7 - 00145 Roma

Direzione Regionale Agricoltura, Promozione della Filiera e della Cultura del Cibo,
Caccia e Pesca, Foreste
Area Servizio Fitosanitario Regionale
Via di Campo Romano, 65 - 00173 Roma
www.regione.lazio.it

ARSIAL (Regional Agency for the Development and the Innovation of Lazio Agriculture)
Via R. Lanciani, 38 - 00162 Roma
tutelarisorse@arsial.it
www.arsial.it

Chairman of Arsial's BoD
Mario Ciarla

Head of the Resources Protection, Supervision and Production Quality Area
Claudio di Giovannantonio

Head of Management of Biodiversity and Forestry and Naturalistic Resources
Mariateresa Costanza

Responsible for regulated and certified productions, certifications for PSR Lazio agri-environmental payments
Immacolata Barbagiovanni Miracolo

Biodiversity working group
Claudio Di Giovannantonio, Mariateresa Costanza, Immacolata Barbagiovanni Miracolo, Paola Taviani, Valentina Iacoponi, Miria Catta, Giovanni Pica, Roberto Rea, Francesco Pati, Federico Schiavi, Alessandra Macciocchi, Luigi Tacchi, Sara Paoletti, Salvatore De Angelis, Adele Giuliani, Antonella Ferretti, Antonella De Giovanni, Serena Specchi, Stefano Paoletti, Renato Pavia (consulente Arsial)

Photo credits: Archivio Arsial; Alberto De Lungo, Associazione Horti in Tiberi for the photo of the Ortano Artichoke

Creation of the "Agrobiodiversity" logo Adriano Bartolucci Proietti

Graphic design and printing
Tipografare srl
Piazzale Clodio, 8 - 00195 Roma

FOREWORD

The term **Biodiversity** refers to all the genetically diverse forms of living organisms, including Man, that inhabit the Earth.
Agricultural Biodiversity, or **Agrobiodiversity**, is part of this great whole and indicates all the heritage of plant, animal and microbial organisms formed, by the action of biological mechanisms and natural selection, in the long times of evolution and accumulated, since the beginning of the history of agriculture, about ten thousand years ago, by generations of farmers who domesticated, selected and transferred, from different geographical areas, all those species from which to derive products useful to man.
Italy, thanks to the heterogeneity of its landscapes due to its tormented orography and the combination of bioclimatic factors, which vary greatly depending on the environments, is the richest country in flora and fauna, that is, in biodiversity, of the entire European continent.
Its central position in the Mediterranean, together with the presence of man, which is much older and more extensive than elsewhere, has allowed the overlapping of numerous floristic and faunal components whose evolution has been profoundly affected by human action.
To a greater extent than in other countries, the diversity in land arrangements has allowed the settlement and preservation of a wide variety of cultivated plants and domesticated animals well adapted to the different agroecosystems that have developed over the millennia.
Lazio, in turn, centrally located with respect to the peninsula, also characterized by a complex morphology and great bioclimatic variability, has all the peculiarities described above and many authors agree that it is a region very rich in biodiversity.

Because the utilization of agricultural biodiversity produces a flow of goods and services, the generic term **Genetic Resource** has come into common usage, by which is meant the genetic heritage of a species or other subspecific entity (breed, ecotype, cultivar, local variety, etc.), whether a plant, animal, or microorganism, which has actual or potential value for food, agriculture, pharmaceuticals, or other useful use for Man.

Beginning in the second half of the 20th century, in Italy, as in other parts of the world, the rise of intensive agriculture and animal husbandry has favored a rapid replacement of native genetic resources with new plant cultivars and animal breeds, characterized by greater productivity and genetic uniformity. Said substitution, together with the profound changes undergone by rural and agro-forestry ecosystems due to deforestation, environmental degradation and changing agricultural practices, has resulted in a significant reduction in biodiversity. The progressive loss of both entire genetic heritages, caused by the extinction of species and plant varieties and animal breeds, and at the level of individual genes, due to crossbreeding and hybridization, is called **Genetic Erosion**.
Loss of biodiversity always translates into loss of

wealth because as local species, varieties and breeds disappear, so do the landscapes, products and culture associated with them.

Modern agriculture cannot disregard the identification, conservation and utilization of this genetic heritage threatened with final disappearance and perfectly adapted to the environment in which it has been preserved. Its defense is important both for the economic and cultural enhancement of traditional agricultural and livestock production and for the redevelopment of the rural and agro-forestry landscape.

Considering, moreover, the rapidly changing climatic conditions, which are inexorably altering the current agricultural environment, putting farmers in front of new challenges, this genetic heritage represents a valuable reserve from which to draw genes for new breeding programs aimed at environmentally sustainable agriculture and animal husbandry, adapted to increasingly difficult environmental conditions.

PROTECTION OF BIODIVERSITY OF AGRICULTURAL INTEREST

The two pillars on which the system of conservation and enhancement of Agrobiodiversity at international level is based are: the **Convention on Biological Diversity** (CBD), adopted in Rio de Janeiro on June 5, 1992, by the United Nations Conference on Environment and Development, ratified in Italy by Law No. 124 of February 14, 1994, and the **International Treaty on Plant Genetic Resources for Food and Agriculture**, adopted in Rome on November 3, 2001, by the thirty-first FAO Conference and ratified by the Italian Parliament by Law No. 101 of April 6, 2004.

The use of genetic resources is also associated with the traditional knowledge of the local indigenous communities that hold them; they too are protected by the Rio de Janeiro CBD, the Treaty on Plant Genetic Resources, as well as other relevant international protocols.

The Treaty on Plant Genetic Resources also promotes:
- the census, collection and characterization, of plant genetic resources as well as the assessment of their degree of genetic erosion and their conservation *in situ*/on-farm and *ex situ*, in germplasm banks and field collections;
- the protection of farmers' traditional knowledge and their right to participate in decision-making aspects;
- the enhancement and promotion of genetic resources at risk of erosion.

Objectives of the Convention on Biological Diversity

- In situ conservation, i.e., the conservation of biodiversity in ecosystems and natural habitats, which, in the case of species of agricultural and livestock interest, translates into on-farm conservation, i.e., in the environment in which they have developed their unique characteristics.
- Sustainable use of biodiversity in environmental, economic and social contexts.
- Equitable sharing, among the contracting countries, of the benefits deriving from the use of genetic resources, especially food, through facilitated access to the genetic resources themselves and appropriate transfer of technologies, from the advanced countries to the developing countries, which provided the former, with the genetic resources.

Objectives of the Treaty on Plant Genetic Resources

- Recognize the great contribution of farmers to the conservation of food species.
- Allow farmers and researchers free and easy access to plant genetic material, only for food, conservation and breeding purposes, but not for non-food industrial purposes. In addition, beneficiaries cannot claim any intellectual property rights over the genetic material obtained. The material (seeds, cuttings, bulbs, etc.) is granted with a Genetic Material Transfer Document: ATM.
- Ensure that the benefits from the use of genetic resources, in genetic improvement and biotechnology, is shared with the countries of origin of the material. These countries will have free access to improved varieties, innovative technologies and free services.

NATIONAL LAWS

Regional Law No. 15, of March 1, 2000, "Protection of indigenous genetic resources of agricultural interest"

The Lazio Region, based on the guidance provided by the CBD, issued Regional Law No. 15, of March 1, 2000, aimed at the protection of genetic resources of agricultural interest, indigenous in Lazio and at risk of erosion.

The law protects all species, breeds, populations, ecotypes, clones and cultivars, including wild, cultivated plant species, as well as animal breeds and populations of livestock interest that are:

- indigenous, that is, originating in Lazio or that have been introduced and integrated into Lazio's agroecosystem for at least fifty years;
- of agricultural interest, that is, used for agricultural and livestock purposes;
- for which there is economic, scientific, environmental and cultural interest;
- threatened with genetic erosion.

Also protected are all genetic resources that have disappeared from the regional territory, but are currently preserved in experimental institutes, botanical gardens, collections and public and private gene banks, including those of other regions or countries.

The Law states that, as set forth in Article 8 of the CBD, the heritage of genetic resources, of agricultural interest, indigenous in Lazio, belongs to the local communities that have preserved them to date.

Law No. 15/2000 entrusts ARSIAL, Regional Agency for Agricultural Development and Innovation of Lazio, with the management of the two operational tools through which protection is implemented: the **Voluntary Regional Register** (VRR) and the **Conservation and Safety Network** (Network).

National Law No. 194, of December 1, 2015 - "Provisions for the protection and enhancement of biodiversity of agricultural and food interest"

With this law, the Italian state establishes the principles for the establishment of a national system aimed at protecting indigenous agrobiodiversity at risk of genetic erosion.

The national system mentioned above consists of:

- by the ***National Register of Biodiversity of Agricultural and Food Interest***, managed by the MiPAAF (Ministero delle Politiche Agricole, Alimentari e Forestali – Italian Ministry of Agricultural, Food and Forestry Policies), in which plant, animal and microbial genetic resources, indigenous in the various regions of Italy, are registered.

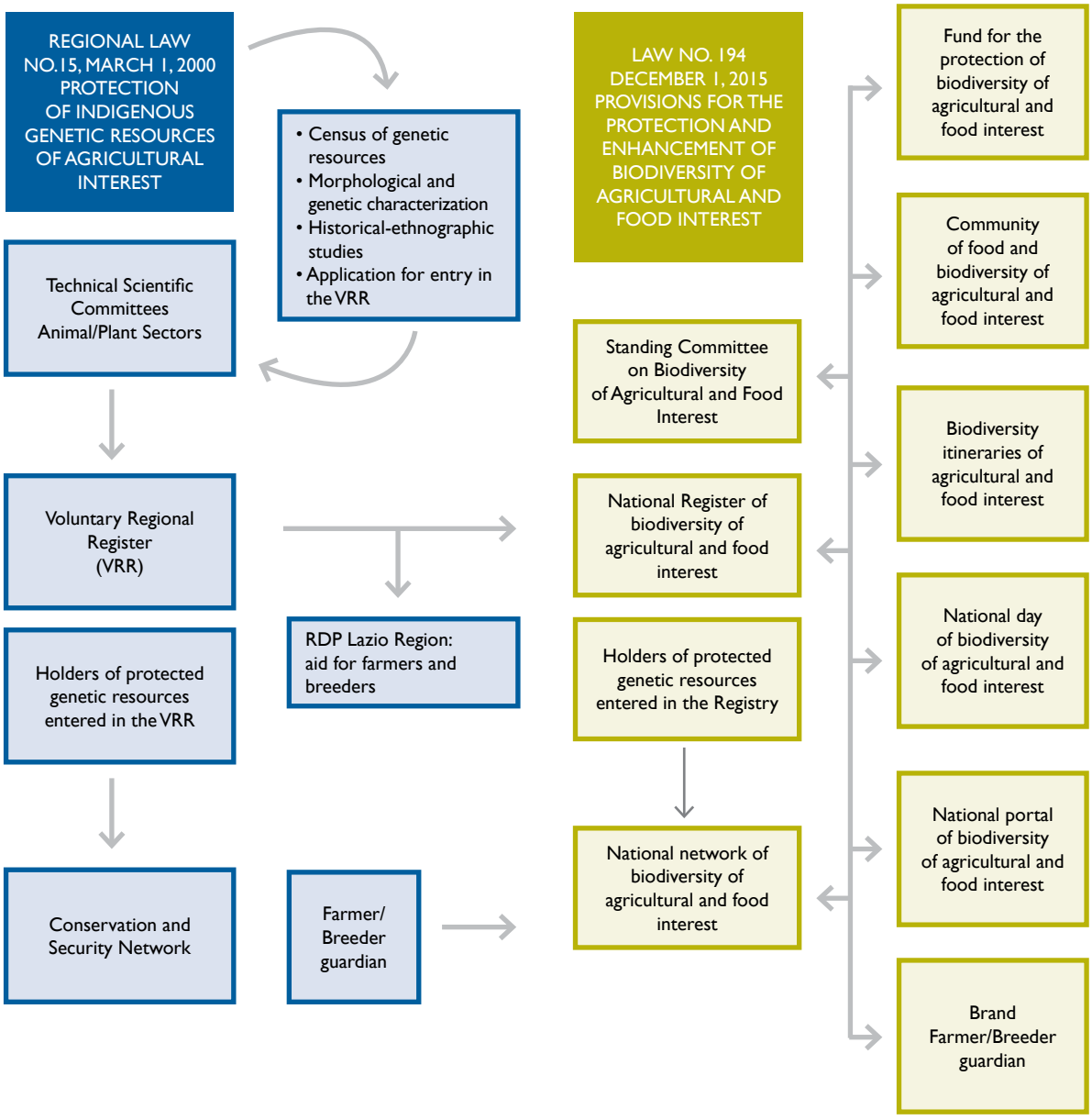
The National Register transcribes all genetic resources protected by Regional Law No. 15/2000 that are registered in the VRR;

- by the ***National Network of Biodiversity of Agricultural and Food Interest***, managed by the MiPAAF, which includes Farmers and Breeders engaged in *in situ*/on-farm conservation and germplasm banks for *ex situ* conservation. Breeders and farmers in the Conservation and Safety Network who meet the requirements to become farmer/farmer guardians are registered in the National Network upon request.
- by the ***National Portal of Biodiversity of Agricultural and Food Interest***, consisting of a system of interconnected databases concerning protected genetic resources of agricultural interest.
- by the ***Standing Committee on Biodiversity of Agricultural and Food Interest***, which is entrusted with the task of ensuring the coordination of actions at the state, regional and autonomous provinces level, on the protection of agrobiodiversity.

The law also establishes:

- ***The Brand for Farmers and Farmer Guardians;***
- ***The Fund for the Protection of Biodiversity of Agricultural and Food Interest***, intended to support the actions of farmers, breeders and public agencies engaged in the implementation of Law No. 194/2015;
- the ***National Biodiversity of Agricultural and Food Interest Day***, which falls on May 20 each year;
- the ***Biodiversity Routes of Agricultural and Food Interest***;
- the ***Food and Biodiversity Communities of Agricultural and Food Interest***.

The texts of the two laws are provided in Appendix 1 and 2


REGIONAL LAW NO.15, MARCH 1, 2000 PROTECTION OF INDIGENOUS GENETIC RESOURCES OF AGRICULTURAL INTEREST
• Census of genetic resources
• Morphological and genetic characterization
• Historical-ethnographic studies
• Application for entry in the VRR
Technical Scientific Committees Animal/Plant Sectors
Voluntary Regional Register (VRR)
RDP Lazio Region: aid for farmers and breeders
Holders of protected genetic resources entered in the VRR
Conservation and Security Network
Farmer/ Breeder guardian
LAW NO. 194 DECEMBER 1, 2015 PROVISIONS FOR THE PROTECTION AND ENHANCEMENT OF BIODIVERSITY OF AGRICULTURAL AND FOOD INTEREST
Standing Committee on Biodiversity of Agricultural and Food Interest
National Register of biodiversity of agricultural and food interest
Holders of protected genetic resources entered in the Registry
National network of biodiversity of agricultural and food interest
Fund for the protection of biodiversity of agricultural and food interest
Community of food and biodiversity of agricultural and food interest
Biodiversity itineraries of agricultural and food interest
National day of biodiversity of agricultural and food interest
National portal of biodiversity of agricultural and food interest
Brand Farmer/Breeder guardian

VOLUNTARY REGIONAL REGISTER

The Voluntary Regional Register (VRR), established by Regional Law No. 15/2000, which can be consulted online on ARSIAL's website and is provided in the appendix (Appendix 3 and 4), is the official repertory of the Lazio Region where indigenous genetic resources, of agricultural interest, at risk of genetic erosion are registered, after the opinion of two technical-scientific commissions, one for the plant sector and one for the animal sector.

Registration can take place at ARSIAL's initiative or on the proposal of the Regional Council, scientific bodies and public agencies, private organizations and associations, or individual citizens. The application for registration, filled out according to a template available on ARSIAL's website, must be forwarded to the same Agency, which will initiate the procedure, the appropriate scientific investigations and the free registration of the genetic resource in the Register. Registered genetic resources may be deleted from the VRR if they no longer meet legal requirements.

All genetic resources registered in the VRR are transcribed into the National Register of Biodiversity of Agricultural and Food Interest, established by Law No. 194 of December 1, 2015.

Genetic resources registered in the Voluntary Regional Register as of July 2022
Total: no. 252 registered genetic resources (no. 228 plants and no. 24 animals)

TREE SPECIES	NO. ARIETIES	HERBACEOUS SPECIES	NO. VARIETIES	ANIMAL SPECIES	NO. RACES-POPULATIONS
Apricot	3	Garlic	2	Bee	1
Azarole	1	Broccoli cabbage	3	Donkey	4
Chestnut tree	1	Artichoke	3	Bovine	1
Sweet cherry tree	18	Chickpea	1	Goat	4
Apple	43	Grass pea	1	Horse	6
Pomegranate	4	Turnip greens	3	Rabbit	1
Hazel	3	Common bean	19	Sheep	2
Olive	13	Runner bean	2	Chicken	1
Pear	30	Emmer	2	Pig	4
Peach	8	Field bean	1		
Plum	6	Fennel	1		
Vine	44	Strawberry	1		
Table grapes	3	Lentil	3		
Sour cherry (Visciolo)	1	Corn	1		
		Pepper	1		
		Tomato	3		
		Celery	1		
		Clover	1		
		Zucchini	1		
No. 13	**No. 178**	**No. 19**	**No. 50**		**No. 24**

LAZIO'S RURAL DEVELOPMENT PROGRAM LAZIO RDP

Biodiversity conservation operations
On-farm and *in situ* conservation of agricultural plant and animal biodiversity

The Lazio Region, starting in 2000, through three Programs of Lazio's RDP, has supported the protection of agricultural biodiversity, both plant and animal, by providing economic aid to those who undertake to cultivate or breed indigenous genetic resources, protected by Regional Law No. 15/2000, in their *in situ* conservation areas.

During the last Program, 2014 - 2020, transitional period 2021 - 2022, under Measure 10, the Lazio Region provided two Operations, 10.1.8 and 10.1.9, for plants and animals respectively, aimed at *in situ* and on-farm conservation of indigenous genetic resources of agricultural biodiversity.

LAZIO'S RURAL DEVELOPMENT PROGRAM 2014 - 2020 MEASURE 10 - Agro-climatic-environmental payments Operation 10.1.8 On-farm and in situ conservation of agricultural plant biodiversity Beneficiaries: farmers BONUSES	
Herbaceous (above ground)	Cereals: 250 €/ha
	Vegetables: 500 €/ha
Tree (above ground)	700 €/ha
Adult trees, arranged as single trees or in rows	70 €/plant, up to a maximum of 10 plants per beneficiary

LAZIO'S RURAL DEVELOPMENT PROGRAM 2014 - 2020 MEASURE 10 - Agro-climatic-environmental payments Operation 10.1.9 On-farm, in situ and ex situ conservation of agrarian animal biodiversity Beneficiaries: breeders BONUSES	
Animals	200 € / LU (Livestock Unit)

Within the framework of Operation 10.1.8, in support of plant biodiversity, ARSIAL is in charge of the on-farm verification activity as regards the presence of plants/crops belonging to the varieties protected by Regional Law 15/2000, in the *in situ* conservation areas, for the related issuance of the certificates of varietal belonging necessary for the payment of the grant provided. For Operation 10.1.9, in support of animal biodiversity, ARSIAL is in charge of issuing breed certificates only for animal breeds registered in the VRR but still without a herd book.

Operation to support the conservation of plant and animal genetic resources in agriculture

As in past Programs, in the latest 2014-2020 Program, too, transitional period 2021-2022, under Measure 10, Operation 10.2.1 - Conservation of plant and animal genetic resources in agriculture - has been provided for the financing of all the activities that ARSIAL, sole beneficiary, performs in application of Regional Law No. 15/2000, based on the sectoral intervention plan and annual operational plans approved by the Lazio Region, in favor of biodiversity of agricultural interest.

LAZIO'S RURAL DEVELOPMENT PROGRAM 2014 - 2020 MEASURE 10 - Agro-climatic-environmental payments Operation 10.2.1. Conservation of plant and animal genetic resources in agriculture Sole beneficiary: ARSIAL Financed Interventions
Census, morpho-genetic characterization and other scientific research on genetic resources
Assessment and Monitoring of the degree of the risk of genetic erosion
Management of the VRR and the Conservation and Safety Network
Issuance of certifications aimed at the recognition of PRD aid related to Op. 10.1.8 and 10.1.9
In situ and ex situ conservation in catalog fields and germplasm bank, by ARSIAL
Enhancement of protected resources and relevant products through Network projects
Information and dissemination through workshops, seminars, training courses
Production of publicity materials

RESEARCH PROJECTS

Through operation 10.2.1 and its own ordinary funds, in the period 2014-2021, ARSIAL carried out numerous research projects aimed at the recovery, characterization, conservation and enhancement of genetic resources of agricultural interest, native to Lazio and at risk of erosion.

Research projects on morpho-physiological and genetic-molecular characterization carried out by ARSIAL in collaboration with:

CREA-OF - Research Center for Vegetable and Ornamental Crops-Council, Pontecagnano (Salerno)
CREA-DC - Research Center for Plant Protection and Certification, Battipaglia
CREA-CI - Research Center for Cereal and Industrial Crops, Bologna and Bergamo
CREA-OFA - Research Center for Olive, Citrus and Tree Fruit, Rome
CREA-VE - Research Center for Viticulture and Enology – Conegliano (Treviso)
DAFNE - Department of Agricultural and Forestry Sciences, University of Tuscia - Viterbo
DIBAF - Department for Innovation in Biological, Agro-Food and Forest systems, University of Tuscia - Viterbo
DAFNAE - Department of Agronomy, Animal, Food, Natural Resources and Environment, University of Padua
CNR IBBR - IBBR - Institute of Biosciences and Bioresources, Perugia
IZSLT - Experimental Zooprophylactic Institute of Lazio and Tuscany "M. Aleandri", Rome
CONSDABI - Consortium for the Experimentation, Dissemination and Application of Innovative Biotechnology

HERBACEOUS

PEPPER
Identification of genetic polymorphisms in local pepper varieties collected by ARSIAL in Lazio

VEGETABLES
Molecular characterization of Lazio's local varieties of tomato, celery, and brassicas

ARTICHOKE
Morpho-phenological and genetic characterization of the Ortano Artichoke, a local variety at high risk of genetic erosion cultivated in the Tiber Valley

HORSE BEAN
Genetic-molecular and morpho-physiological characterization of accessions of Vicia faba mayor, minor, equina variety

COMMON BEAN
Morphological, biochemical and genetic characterization of local varieties of Phaseolus vulgaris from the Lazio Region

COMMON BEAN AND RUNNER BEAN
Morphological, biochemical and genetic characterization of accessions of local varieties of P. vulgaris and P. coccineus, indigenous in the Aniene Valley, aimed at the participatory management of their reproduction within the framework of the "Aniene Valley's Seed House"

WHEAT
Genetic/molecular characterization of local varieties of "ancient wheat" grown in Lazio

CORN
Genetic and physiological analysis of local corn varieties

WATER STRESS TOLERANCE
Identification of landraces of bean from the Lazio region, tolerant to water stress, through their morpho-physiological evaluation

GARLIC GENETICS
Molecular characterization of two local varieties of red garlic registered in the Voluntary Regional Register: Red Garlic of Proceno and Red Garlic of Castelliri

TREE

APPLE TREE
Genetic-molecular analysis aimed at the characterization of apple (Malus domestica) accessions

FRUIT TREES
Genetic-molecular analyses aimed at characterizing accessions of fruit tree species

CHERRY TREE
Genotypic and metabolite analysis of sweet cherry and sour cherry accessions. Phylogenetic analysis of pomegranate accessions

OLIVE TREE
Recovery and enhancement of local varieties of olive trees in Lazio

VINE
Genetic-molecular analysis of the vine accessions surveyed, for their registration in the Voluntary Regional Register and the National Wine Grapes Register

ANIMALS

SHEEP - GOATS
Single research project on genetic characterization of Lazio's Fulva Goat and of the Quadricorn Sheep

LIGUSTICA HONEYBEE
Genetic and morphological characterization of Apis mellifera ligustica from Lazio

Research projects for the valorization, including from the phytosanitary point of view, of genetic resources, carried out by ARSIAL in collaboration with:

CREA-DC - Research Center for Plant Protection and Certification, Rome
CREA-ZA - Research Center for Animal Production and Aquaculture, Monterotondo (Rome)
CREA-VE - Research Center for Viticulture and Enology, Velletri (Rome)
CREA-VE - Research Center for Viticulture and Enology, Conegliano (Treviso)
HYGEIA LAB SRL - Nutraceutical Analysis, Rome
DAFNE - Department of Agricultural and Forestry Sciences, University of Tuscia - Viterbo
DIBAF - Department for Innovation in Biological, Agro-Food and Forest systems, University of Tuscia - Viterbo
Department of Psychology pf Development and Socialization Processes, University La Sapienza of Rome
Department of Social Sciences and Economic, University La Sapienza of Rome

HERBACEOUS

HERBACEOUS QUALIFICATIONS
Phytosanitary qualification of indigenous herbaceous plant genetic resources registered in the Voluntary Regional Register of the Lazio

GARLIC QUALIFICATION
Phytosanitary upgrading of two of Lazio's varieties of Red Garlic

RED GARLIC BIOCHEMICAL CHARACTERIZATION
Red Garlic from Castelliri and Red Garlic from Proceno: qualities and functional properties (biochemical, aromatic and functional characterization of extracts of Red Garlic from Castelliri and Proceno)

NUTRACEUTICAL ANALYSIS
Analysis of chemical-nutritional elements and nutraceutical substances on agri-food products derived from animal and plant genetic resources, indigenous in Lazio and at risk of genetic erosion

TREE

QUALIFICATION OF FRUIT TREES
Phytosanitary qualification of germplasm of fruit plants, grapevine and olive tree native in Lazio

RECOVERY OF VINE VARIETIES
Recovery from viral pathogens of indigenous grapevine germplasm in the Lazio Region

MICROVINIFICATIONS GRAPE VARIETIES
Service of micro-vinification and physicochemical and sensory analysis of grape varieties of agricultural biodiversity

CLONAL SELECTION OF GRAPE VARIETIES
Sanitary clonal selection of the Moscato di Terracina grape variety

ANIMALS

LIPIZZANER ENHANCEMENT
Enhancement of the Lipizzaner Breed Horse in Multifunctional Agriculture through orientation to federal disciplines

ESPERIA PONY ENHANCEMENT
Study of feeding behavior of the Esperia Pony in plant communities with Ampelodesmos mauritanicus

ETHNOGRAPHIC STUDIES
Ethnographic research project on the knowledge of local communities that cultivate/farm and guard the indigenous genetic resources of the territory in Lazio

CONSERVATION AND SAFETY NETWORK

Active and evolutionary protection of indigenous genetic resources listed in the Voluntary Regional Register is implemented *in situ*/on farm, on farms in the autochthonous territories of the protected resources.
It is for this reason that Regional Law No. 15/2000 established the Conservation and Safety Network, managed and coordinated by ARSIAL.
All those who hold plant and animal genetic resources, registered in the Voluntary Regional Register, can join the Conservation and Safety Network, managed and coordinated by ARSIAL; under the Agency's control, multiplier nursery workers from Lazio, for the multiplication and sale of fruit, olive and vine varieties protected by Regional Law No. 15/2000, can also join it; currently No. 7 nursery workers are registered in the Network.
The list of nursery workers can be downloaded at the following link:
https://www.arsial.it/biodiversita/rete-di-conservazione-e-sicurezza/
Membership in the Conservation and Safety Network is a prerequisite for accessing aid under the Lazio's RDP - Operations 10.1.8 and 10.1.9.
In addition to individual or associated farmers, municipalities, universities, research institutes, schools and park authorities that cultivate or breed protected genetic resources in Lazio can also join the Network.

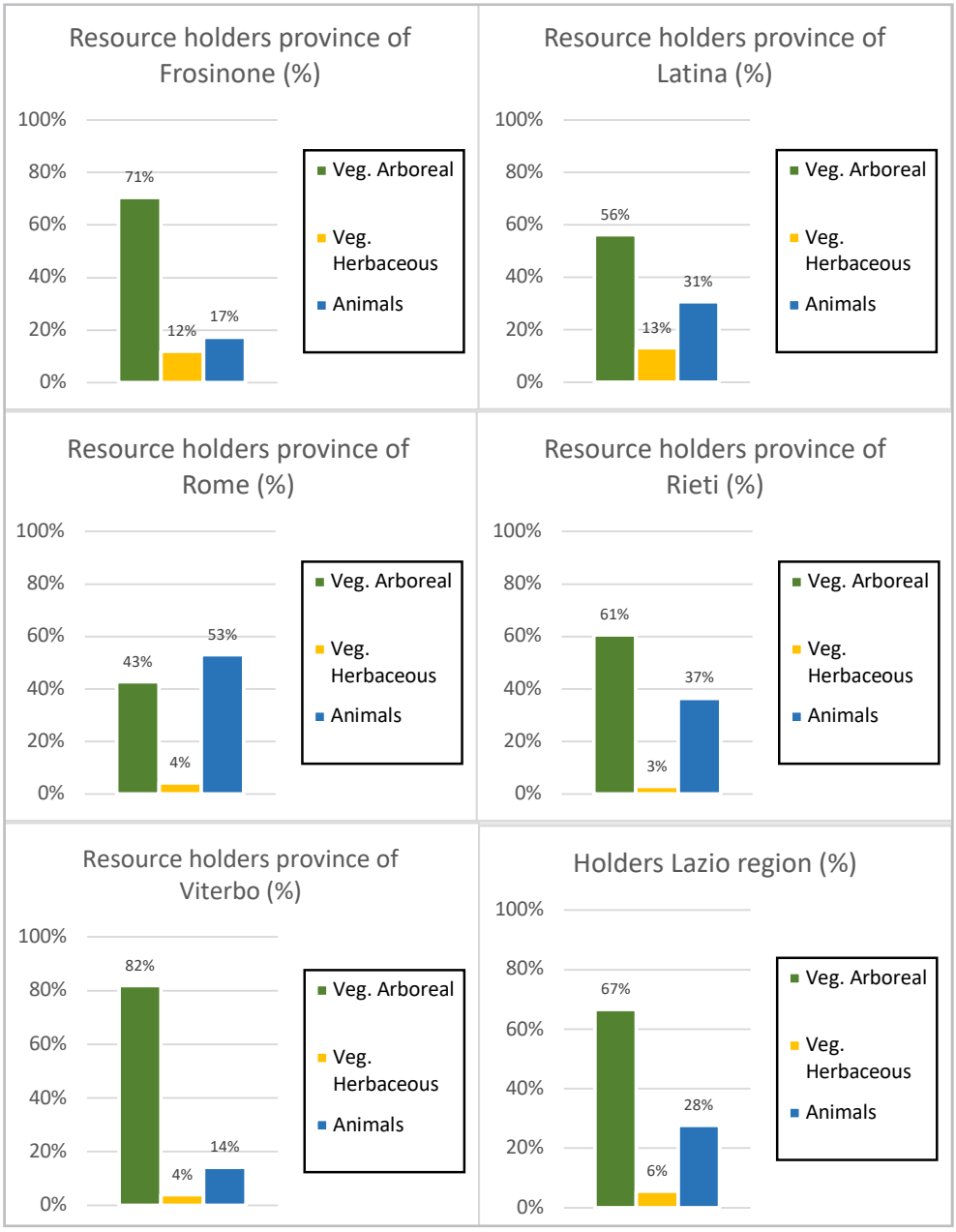
PURPOSES OF THE CONSERVATION AND SAFETY NETWORK

- Monitor and encourage active in situ/on-farm conservation of protected genetic resources through on-farm cultivation or breeding
- Control and foster the exchange of propagating material in order to make it available for both cultivation and scientific research
- Monitor the risk of genetic erosion through the evaluation of genetic resource consistency
- Encourage, where possible, their reintroduction or extension of cultivation or breeding
- Promote local activity through training seminars and days in the field, on methods of propagation, reproduction and cultivation of genetic resources; organization of pomological exhibitions and implementation of Network projects, with the involvement of farmers and breeders, designed to foster participatory and decentralized agricultural scientific research
- Offer technical assistance, to Network members, aimed at solving agricultural and sanitary problems, as well as for the protection of genetic variability of protected resources
- Promote the traditional knowledge of different local farming and breeding communities, who safeguard the protected resources.
- Promote the economic valorization of genetic resources and their productions

Breeders and farmers in the Conservation and Safety Network, who meet the requirements to become a farmer/farmer guardian, can be registered, upon request, in the National Network of Biodiversity of Agricultural and Food Interest, established by Law No. 194 of December 1, 2015.
On ARSIAL's website at: www.arsial.it, the Conservation and Safety Network Charter and membership forms are available.

Members of the Conservation and Safety Network Data updated as of December 31, 2021
Plant sector No. 2,338
Animal sector No. 948
Total number of members No. 3,286

Percentages, at province level, of genetic resource holders, Conservation and Safety Network members



EX SITU CONSERVATION

EX SITU CONSERVATION
of Lazio's indigenous genetic resources at risk of erosion

Ex situ conservation of plant genetic resources takes place in the germplasm Bank and catalog orchards of the Agency and other scientific institutes:

- ARSIAL Demonstration Farm - Montopoli di Sabina (Rieti) - collection of olive, fruit and vine germplasm; Apis mellifera ligustica protection apiary
- ARSIAL Demonstration Farm - Alvito (Frosinone) - collection of horticultural and fruit germplasm
- ARSIAL Demonstration Farm - Cerveteri (Rome) - artichoke germplasm collection
- ARSIAL Demonstration Farm - Velletri (Rome) - collection of grapevine germplasm
- National Catalog Collection of the Crea VE in Conegliano (Treviso) - collection of grapevine germplasm
- National Fruit Germplasm Conservation Camp of Crea OFA (Rome) - fruit germplasm collection
- Experimental Teaching Company "Nello Lupori" University of Tuscia (Viterbo) - collection of fruit germplasm
- Germplasm bank, ARSIAL main office (Rome) - herbaceous germplasm

ORCHARDS ARSIAL COLLECTION

ARSIAL Experimental Farm in Montopoli di Sabina (Rieti)

Fruit germplasm collection

Collection of olive germplasm

Apis mellifera ligustica conservation apiary

ARSIAL Demonstration Farm in Alvito (Frosinone)

Horticultural catalog orchard

Fruit germplasm collection

ARSIAL Demonstration Farm in Alvito (Frosinone)

Experimental field trials for soft wheat

ARSIAL Demonstration Farm in Velletri (Rome)

Collection of vine germplasm

CENSUS OF INDIGENOUS GENETIC RESOURCES OF AGRICULTURAL INTEREST

To know, protect and enhance the indigenous genetic heritage of Lazio ARSIAL, since 2001, has started a census throughout the region, which is still ongoing, of indigenous animal varieties and breeds in a state of neglect and at risk of genetic erosion or extinction.

The census involves: the reconnaissance of germplasm already cataloged and preserved in the collections of scientific institutions; bibliographic and iconographic research, including archival research, designed to historically verify the autochthony of the recovered resources, their local names, identify any homonyms, and gather information on the areas of diffusion or introduction.
In this research on the territory, local communities are involved, thus becoming an active part of the census and rediscovery of the heritage of genetic resources they hold and the traditions associated with them. In this regard, the census also involves the in-depth study, through an ethnographic methodology, of knowledge related to the socio-cultural capital connected to biodiversity, thus making it possible to assess its economic potential and the risks associated with the loss of local agrobiodiversity and the culture connected to it. The documentation, gathered through on-farm interviews, allows the creation of audiovisuals on Lazio's genetic resources and the knowledge and traditions of the small local farming communities that guard them.

For the purpose of registration in the Voluntary Regional Register, all identified genetic resources, plant and animal, are characterized morphologically and genetically according to the Guidelines for the *Conservation and Characterization of Plant, Animal and Microbial Biodiversity of Agricultural Interest,* published by the MiPAAF.
In addition, information is gathered on the characteristics of the agroecosystem in which they are preserved, on the cultivation practices traditionally adopted, and on data regarding the size of crops/breeding farms, for estimating the degree of risk of genetic erosion.
Propagation material (scions and seeds) is also collected for plants for *ex situ* conservation in the Catalog Orchards and/or ARSIAL's Germplasm Bank.
The Agency also provides for the registration of fruit and olive varieties in the National Register of Varieties of fruit plants allowed for marketing, and for vine varieties in the National Register of wine grape varieties and the Regional Register of vine varieties classified as suitable for wine grape production in the Lazio Region.
For the animal breeds identified and studied, ARSIAL provides breed standards for the establishment of Herd Books.
All morpho-genetic characterization activity is performed in collaboration with numerous scientific institutions.

ASSESSMENT OF THE DEGREE OF RISK OF GENETIC EROSION

For each indigenous plant and animal genetic resource to be registered in the Voluntary Regional Register, an *in situ* conservation range is defined and the degree of risk of genetic erosion is calculated.

Parameters for assessing the degree of erosion risk and risk categories of plant genetic resources

PARAMETERS		DESCRIPTION	DEGREE OF RISK	VALUE
A	**Presence of the product on the market**	Markets and/or producers' cooperatives.	Low	1
		Sector: main varieties in some PDO, PGI, DOCG, DOC, IGT brand.		
		Niche: available in small areas locally.	Medium	2
		Segment: secondary varieties in some PDO, PGI, DOCG, DOC, IGT.		
		Availability of some fruit for self-consumption or for study purposes.	High	3
		Not available.		
B	**Presence in the catalogs of nursery workers/seed companies**	Fruit trees registered in the National Register of varieties of fruit plants allowed for marketing.	Low	1
		Vegetables and other agricultural species registered in the National Register of conservation varieties.		
		Vine varieties registered in the National Register of vine varieties and in the Regional Register of vine varieties suitable for wine grape production.		
		Vine varieties under registration in the National Register of vine varieties and in the Regional Register of vine varieties suitable for wine grape production.	Medium	2
		Fruit trees under registration in the National Register of varieties of fruit plants allowed for marketing.		
		Material available at a few breeders and nursery workers.		
		Fruit trees not registered in the National Register of varieties of fruit plants allowed for marketing.	High	3
		Horticultural and agricultural species not registered in the National Register of conservation varieties.		
		Vine varieties not registered in the National Register of vine varieties and the in Regional Register of vine varieties suitable for wine grape production.		
		No multiplication/reproduction for off-farm distribution.		
C	**Number of Farmers**	Greater than 100	Low	1
		Between 30 and 100	Medium	2
		Less than 30	High	3
D	**Area (% of regional surface concerned)**	Surface area> 5%	Low	1
		5%>Surface>1%	Medium	2
		Surface area <1%	High	3
		Presence of plants/cultures reported by the census activity		
		Isolated plants or crops in family gardens and vegetable gardens		
E	**New Plant Trends**	Presence of new plants	Low	1
		Absence of new plants	High	3

From the sum of the values for the different parameters, the overall value attributable to the genetic resource is obtained. The overall degree of erosion risk attributed to each genetic resource is determined based on the following assessment**:**
Low ≤ 9; Medium 10-13; High ≥ 14

Parameters for assessing the degree of erosion risk and risk categories of animal genetic resources

Schemes for assessing the risk of genetic erosion of a breed of livestock interest are based primarily on the number of surveyed breeders and the male-to-female ratio of the population, taking into consideration genetic and demographic aspects.

The assessment grid proposed by the FAO, which takes into consideration several demographic elements, is based primarily on the effective population number (EN) as defined by Wright (1931) and the number of male (MN) and female (FN) breeders surveyed. Populations are classified into seven different risk categories.

PARAMETERS **Demographics and Genetics**			**Risk Category**
FN	**MN**	**EN**	
0	0	0	**Extinct**
Whether sufficient germplasm exists for breed reconstitution			**Cryopreserved**
≤ 100	≤ 5	≤ 120	**Criticism**
101-1000	6-20	121-1200	**Damaged**
1001-2000	21-35	1201-2400	**Vulnerable**
>2000	>35	>2400	**Not at risk**
If there is no up-to-date information			**Unknown**

LAZIO'S INDIGENOUS HERBACEOUS SPECIES

The Voluntary Regional Register has 50 local varieties of herbaceous crops, at risk of genetic erosion, pertaining to 19 species (Appendix 3).

ARSIAL, in collaboration with CREA and the University of Tuscia, in order to genetically confirm the varieties already registered in the Voluntary Regional Register on the basis of morphological characterization alone and proceed with the registration of new native genetic resources at risk of erosion, has carried out the characterization with molecular markers of all the accessions, both of the protected varieties and of those recently surveyed, collected from farmers and preserved in ARSIAL's germplasm Bank. The results of molecular analysis enabled the numerous accessions to be genetically distinguished from both commercial varieties of the same type and from other local varieties of the same species.
The analyses confirmed the identity of all the local varieties already protected allowed, in 2020, the registration of the Ortano Artichoke and of the Aquino Horse Bean in the VRR, and revealed numerous accessions of the different species, which can be identified as additional new local varieties to be registered in the Voluntary Regional Register.

The results acquired for the different herbaceous species will also allow to establish the main guidelines for *in situ*/on-farm conservation management of local varieties and initiate the establishment of seed supply chains.

Bean
With regard to local bean varieties, ARSIAL, in collaboration with the DIBAF of the University of Tuscia in Viterbo, carried out a morphological (seed descriptors), biochemical (analysis of reserve proteins, phaseolines and phytohemagglutinins) and molecular genetic (SSR), which covered all *Phaseolus vulgaris* (common bean) and *Phaseolus coccineus* (runner bean) accessions surveyed by ARSIAL throughout the region. The studies confirmed the identity of the 19 local varieties of P. vulgaris and the 2 varieties of *P. coccineus* already protected by Regional Law No. 15/2000 and allowed the identification of several other local varieties belonging to the two species, eligible for registration in the VRR.
Morphological analysis of the bean seed showed 34 different morphotypes. Reserve protein analysis showed the presence of T-type, C-type (associated with the gene pool of beans of Andean origin) and S-type (associated with the gene pool of beans of Mesoamerican origin) phaseolines. The results indicate that both gene pools exist in Lazio's P. vulgaris germplasm, although most local varieties are of Andean origin, confirming what has been shown for other Italian collections at regional level.

Corn
In collaboration with CREA-IC, Bergamo and Bologna offices, the research project "recovery and characterization of traditional varieties of corn (*Zea mays* L.) indigenous in the Lazio region" is under way.

The objective of the project is the morpho-physiological and genetic characterization of 50 corn accessions, of which 38 were identified by the Agency's technicians during the census, while the other accessions, collected between 1950-1960 in Lazio, come from the Germplasm Bank of the CREA-CI in Bergamo. This characterization is aimed at assessing the genetic distinctiveness of the corn accessions surveyed by ARSIAL, identifying the variety they belong to and assessing their possible degree of hybridization with modern commercial corn; the chemical composition of the harvested grain will also be determined.

The results of the aforementioned project will enable the registration of new indigenous genetic resources at risk of erosion in the Voluntary Regional Register, their reintroduction in Lazio, and their commercial enhancement.

Number of accessions for each herbaceous species analyzed in genetic characterization projects with molecular markers, and number of indigenous varieties of which some are registered in the VRR (in brackets)

Research organization	Species	No. of analyzed accessions (form lazio)	No. of indigenous varieties (of which registered in the VRR)
Department for Innovation in biological, agro-food and forest systems - DIBAF University of Tuscia - Viterbo	Common bean	114	66 (19)
	Runner bean	34	4 (2)
	Artichoke	26	4 (3)
	Garlic	30	2 (2)
	Emmer	13	4 (2)
	Soft wheat	14	10
Department of Agricultural and Forestry Sciences - DAFNE University of Tuscia - Viterbo	Tomato	51	9 (3)
	Brassicas	19	10 (5)
	Celery	13	2 (1)
CREA-OF, Vegetable and Ornamental Crops - Pontecagnano	Pepper	12	2 (1)
CREA-IC, Cereal and Industrial Crops - Bergamo and Bologna	Corn	50	1* (1)
CREA-DC, Plant Protection and Certification - Battipaglia	Horse bean	2	1 (1)

* the total number of indigenous varieties of Corn accessions is not jet known because genetic characterization is ongoing; in this research are included accessions of the indigenous variety of Agostinella that is already morphologically characterized and registred in the VRR.

Aniene Valley's Seed House

The Seed House of the Aniene Valley is a pilot project conducted by ARSIAL in collaboration with the Monti Simbruini Regional Natural Park, the 10th Mountain Community of the Aniene Valley, the Municipality of Vallepietra and the Department for Innovation in Biological, Agrifood and Forestry Systems (DIBAF), of the University of Tuscia in Viterbo.
The project, which represents a new experience for Lazio, is aimed at the dynamic conservation, in situ/on farm, of the indigenous varieties of the Aniene Valley: Fagiolo Cioncone, Fagiolina Arsolana, Fagiolo Regina di Marano Equo, Fagiolo Cappellette, Fagiolo Romanesco, Fagiolo Pallino, Fagiolone di Vallepietra, and Mais Agostinella. The project involves the establishment of a local network of custodian farmers, engaged in proper community management of seed reproduction, and a small germplasm bank, managed by the Simbruini Mountains Park Authority.

Seed Houses, such as the one in the Aniene Valley, are informal seed systems managed by local farming communities; they represent a valuable collective action that plays a crucial role in controlling the propagation material used by farmer communities and in the evolutionary, in situ/on-farm conservation of local genetic resources, thus ensuring varietal purity and maximum genetic variability; this type of seed system also allows for evolutionary, not static, in situ conservation of genetic resources, which will thus continue to adapt to new environmental situations.
Annually, farmers contribute a seed lot to a small germplasm bank managed by the community itself. The seed lots stored in the bank, which guarantees their preservation over time, are a valuable guarantee against any negative event, both biotic and abiotic (pest attacks, virosis, drought, etc.) that could destroy crops; seeds stored in the bank are in fact available for farmers affected by an adverse event, but also for new farmers who wish to undertake cultivation in the area of autochthony.
Farmers who are part of the seed house, in order to avoid genetic pollution or reduction in variability, commit to following simple species-specific specifications for growing and producing seed.
Within this framework, an important role is played by ARSIAL's technicians and agronomists, who take on the function of true animators, capable of bringing local communities, rich in their knowledge, into a dialogue with technicians, who bring agronomic and scientific expertise.

Seed houses, which represent a "community of custodian farmers", are also recognized for the purposes of the National Network of Biodiversity of Agricultural and Food Interest, referred to in Article 4 of Law No. 194/2015, and can, upon request, be registered in the Network mentioned above.
ARSIAL, based on the experience gained from this pilot project, aims to encourage and expand the initiatives of territorial networks, such as seed houses, designed to ensure a system of cooperation between growers, researchers, agronomists, historians and technical animators, aimed at the dynamic conservation of indigenous varieties, under the control and supervision of a scientific institution.

INDIGENOUS FRUIT TREES IN LAZIO

Over the years, 118 varieties indigenous in Lazio, at risk of genetic erosion and belonging to 11 species of fruit trees (Appendix 3), have been surveyed and registered in the Voluntary Regional Register.

In addition, the Agency, in order to make the nursery material of the protected varieties available on the market, has taken steps to register them, with Officially Recognized Description (ORD), in the national Register of varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
Grafted plants of the fruit varieties registered in the Voluntary Regional Register are therefore available from the 7 nursery companies participating in the Conservation and Safety Network, whose references, with the list of varieties marketed by each of them, is available on ARSIAL website: https://www.arsial.it/biodiversita/rete-di-conservazione-e-sicurezza/
A study is currently underway, in collaboration with several research organizations, for the genetic characterization of varieties registered in the Voluntary Regional Register and of the accessions not yet under protection. To date, **1154** accessions belonging to different fruit species have been analyzed, broken down as shown in the table. In this first phase, the main objective is to find possible synonyms (same genotype but different name), homonyms (same name but different genotype) and to compare indigenous germplasm with commercial reference varieties.

This study will be implemented with further analysis on accessions surveyed in the last period and with subsequent in-depth studies.

Research organization	Species	NO. OF ANALYZED ACCESSIONS
Research Center for Olive, Citrus and Tree Fruit - CREA - OFA	Apple tree	386
Department of Agronomy, Animal, Food, Natural Resources and Environment - DAFNAE University of Padua	Pear tree	311
	Apricot	17
	Peach	36
	Plum tree	61
	Chestnut tree	81
	Hazel tree	4
	Fig tree	56
Department of Agricultural and Forestry Sciences - DAFNE University of Tuscia - Viterbo	Cherry tree	148
	Sour cherry	29
	Pomegranate	25

INDIGENOUS OLIVE TREES IN LAZIO

ARSIAL, already in the 1980s, in collaboration with the current CREA-OFA, Spoleto office, carried out a great work of collection and characterization of olive germplasm of Lazio.

This activity of exploring old and often abandoned traditional olive groves and collecting germplasm was subsequently intensified with the enactment of Regional Law No. 15 of March 1, 2000, which, as part of the census, made it possible to identify, morpho-genetically characterize and register in the Voluntary Regional Register, 13 indigenous varieties of olive trees, at risk of genetic erosion. (Appendix 3)

Following numerous new reports and findings of several old specimens of unknown varieties and in order to clarify synonyms and homonyms, ARSIAL, in collaboration with the CNR-IBBR of Perugia, through the project "Recovery and enhancement of local olive varieties of Lazio", completed in 2021, has proceeded to check from a genetic viewpoint all the indigenous olive heritage surveyed over the years by ARSIAL.

In order to confirm the identity of indigenous varieties already protected by Regional Law No.15/2000, verify the genetic uniqueness of recently reported varieties and some old specimens found in the area, 452 samples were collected.

For varietal confirmation, both protected olive varieties collected *ex situ*, in the ARSIAL catalog orchard in Montopoli di Sabina (Rieti), and the respective mother plants preserved *in situ*/on farm, at historical farmers, were sampled. In addition, all reported plants and numerous old specimens of unknown varieties, found in the area, were sampled.

The samples were subjected to molecular analysis and the profiles, obtained with SSR markers, were compared with those of thousands of varieties, both Italian and from other Mediterranean olive-growing countries.

On the most interesting genotypes among those analyzed, morphological and phenological characterization was also performed, and chemical analysis of drupes and organoleptic evaluation of monovarietal oils were carried out.

First of all, genetic analyses revealed 20 additional olive varieties, indigenous and at risk of genetic erosion, which can be registered in the Voluntary Regional Register. Numerous single and unknown genotypes were also identified, represented either by large, old, single and isolated specimens or by small groups that were likely obtained by vegetative multiplication of varieties cultivated in ancient time in Lazio, now almost completely disappeared.

Finally, the work carried out has made it possible to clarify, also on the basis of in-depth historical studies, synonyms and homonyms of some varieties, such as the Sirole, which, already registered in the Regional Voluntary Register, was found to be genetically the same as other varieties reported to ARSIAL: Ciera dei Colli, Salviana (or Fecciara), and Vallecorsana, surveyed in distinct and distant areas and each, with a centuries-old history of cultivation.

In the Atina (Frosinone) area, a number of plants pertaining to the white olive type, which were found to be genetically different from each other, were also surveyed. In implementing Regional Law No.

INDIGENOUS VINE VARIETIES IN LAZIO

Vine varieties entered in the Voluntary Regional Register

TABLE GRAPES
3 VARIETIES

Pellegrino
Pizzutello Bianco b.**
Pizzutello Nero n.

WINE GRAPE
44 VARIETIES

Abbuoto n.*	Forastera b*	Pecorino b.*
Albarosa rs.****	Greco b.*	Pedino b.****
Aleatico n.*	Greco bianco b.*	Petroveccia b.***
Angelica b.***	Greco nero n.*	Piedirosso n.*
Biancolella b.*	Guarnaccia b.*	Reale bianca b.*
Bombino bianco b.*	Lecinaro n.*	Romanesco b.***
Bombino nero n.*	Maturano b.*	Rosciola rs.*
Calamaro n.***	Maturano nero n.*	Tostella b.***
Canaiolo nero *	Moscato di Terracina b.*	Raspato n.*
Capolongo b.*	Nero buono n.*	Uva dei Vecchi b.****
Capolongo rosso r.***	Nerone n.***	Uva Giulia n.*
Cesenese nero n.*	Maiolica n.*	Uva Greca puntinata b.***
Cimiciara b.***	Olivella nera n.*	Uva Mecella b.****
Corapecora n.***	Pampanaro b.*	Verdello b.*
Foiana b.***	Passerina b.*	

*Vine varieties entered in the National and Regional Registries of vine varieties suitable for the production of wine grapes
**Vine varieties entered in the National Registry of vine varieties suitable for the production of table grapes
***Vine varieties characterization for entry in the National and Regional Registries of vine varieties suitable for the production of wine grapes
**** Vine conservation only

15/2000, over the years, 47 vine varieties have been surveyed, characterized from a genetic and ampelographic viewpoint (according to the OIV protocol), and registered in the Voluntary Regional Register (Appendix 3), of which 3 are table grapes and 44 are wine grapes. With the surveys carried out in the last two years, an additional 10 native grape varieties were surveyed and characterized, which are in the process of being registered in the VRR.
To date, of the 44 wine grape varieties registered in the VRR, only 29 are enough to make wine for commercial purposes, being registered in the National Register of vine varieties and in the Regional Register of vine varieties suitable for wine grape production. For 11 grape varieties, the Agency is providing the characterization according to the OIV protocol and the micro-vinification necessary for their registration in the National and Regional Registries of vine varieties suitable for the production of wine grapes, while for the remaining 4 varieties only germplasm preservation is planned in the catalog orchards of ARSIAL and CREA-VE.
In addition to ampelographic, genetic and micro-wine characterization, which are necessary for the protection of grape varieties and for the marketing of wines, in the last two years the Agency, through a collaboration with CREA-DC, assessed the phytosanitary status of accessions of indigenous vine varieties of Lazio and for the varieties which were found not to be free of viruses, as provided for in Regulation 2019/2072, the subsequent initiation of a remediation program.
In addition, ARSIAL, after sanitary remediation with thermotherapy, has started the clonal selection process for the indigenous grape variety Moscato di Terracina biotype "ARSIAL 656".

INDIGENOUS LIVESTOCK HERITAGE OF LAZIO

Characterization and protection activities

The Voluntary Regional Register, in the Animal section (Appendix 4), currently has 24 breeds of livestock interest, of which 9 have been identified by ARSIAL as part of the census, characterized genetically, registered in the Voluntary Regional Register and for which the relevant Herd Books have been activated.

In these years of activity, with the fundamental support of the economic resources made available by the RDP, numerous projects of morphological, genetic and phenotypic characterization have been initiated, which have allowed to recover and preserve the indigenous livestock heritage of Lazio. The research activities financed by ARSIAL and those of Herd book holders represent the prerequisite for implementing adequate breeding management programs, with particular regard to reproductive aspects, in order to avoid inbreeding and genetic drift phenomena, which particularly afflict the breeds of limited reduced diffusion. For the animal resources with the most critical issues, in addition to ensuring access to the support of Lazio's RDP upon application by breeders to the Conservation and Safety Network, action was also taken with a view to exposing their marginal condition by activating, at the Associations of animal breeders, the Herd books required by the current regulations on animal reproduction; this is an operation of great importance that, by limiting the processes of genetic drift, guarantees a clearer representation of the consistencies of animals meeting the breed standards and, above all, activates dynamics of reproduction management, triggers a documented management in BDN (Banca Dati Nazionali – National Data Base - NDB), favors

Breeds surveyed and characterized by ARSIAL, registered in the VRR and relevant Herd Books		
Surveyed breeds	**Year of registration in the VRR**	**Herd Book Activation**
Monticellana White Goat	2003	Registered in the Herd book, kept by ASSO.NA.PA National Association of Pastoralism.
Roman Horse of the Maremma Laziale	2004	Registered in the Herd book kept by A.N.A.R.E.I.A - National Association of Breeders of Italian Equine and Asinine Breeds (for the purpose of conservation of horse and asinine breeds of limited diffusion)
Capestrina Goat	2005	Registered in the Herd book kept by ASSO.NA.PA National Association of Pastoralism
Gray Ciociara Goat	2005	Registered in the Herd book kept by ASSO.NA.PA National Association of Pastoralism
Fulva Goat	2006	
Quadricorn Sheep	2006	
Nero dei Monti Lepini (Black pig of Lepini Mountains)	2006	Registered in the Herd book of the Swine Breeds, kept by ANAS - National Association of Swine Breeders.
Nero Reatino (Black pig of Rieti)	2006	Registered in the Herd book of the Swine Breeds, kept by ANAS - National Association of Swine Breeders.
Viterbese Donkey	2011	Registered in the Herd book kept by A.N.A.R.E.I.A - National Association of Breeders of Italian Equine and Asinine Breeds (for the purpose of conservation of horse and asinine breeds of limited diffusion)

the emergence of farms and their possible related activities (production and sale of breeding stock, production of meat, cheese and cured meats, often attributable to traditional products, etc.). Moreover, thanks to the census activity, it has been possible to recover the relationship with the territory which, following the scientific characterization activities, has gradually brought to light the indispensable role of the communities: precisely the cultural contamination arising from the relationship between technical activities and historical-ethnographic reconnaissance has led to a change in paradigms on the conservation of agro-biodiversity: Lazio's experience allows us to anticipate the evidence that active on-farm conservation and development of indigenous genetic resources are also possible by leveraging the role of communities and not only on individual holders who, faced with countless problems, monitor the territory by practicing extensive breeding, in disadvantaged and marginal environmental contexts.

Genetic and morphological characterization of the Apis mellifera ligustica of Lazio

The *Apis mellifera* ligustica, registered in the VRR in July 2017, is a bee subspecies at high risk of genetic erosion due to a number of factors such as: the bees' peculiar reproductive and mating characteristics; the replacement of ligustica queen bees with hybrid or alien queen bees; bee mortality due to environmental pollution and lack of anti-varroa prophylaxis; and

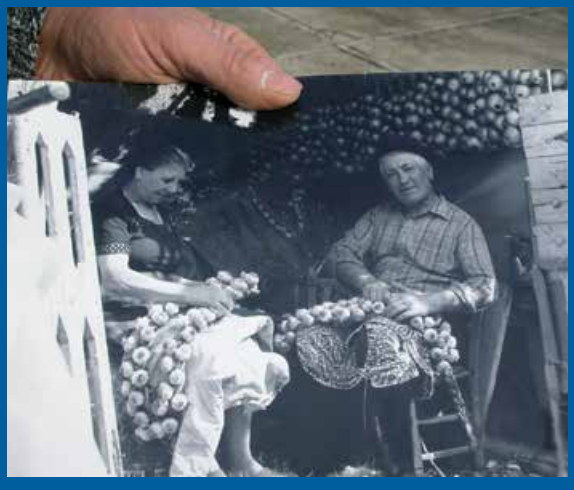
the sizeable proportion of amateur beekeepers, compared to professional beekeepers.
ARSIAL, starting in 2018, has initiated with the Istituito Zooprofilattico Sperimentale del Lazio e della Toscana *M. Aleandri*, a project of "Genetic and morphological characterization of *Apis mellifera* ligustica of Lazio", aimed at studying and monitoring the state of genetic erosion of this resource. The activities of the project include the identification of possible indigenous populations in Lazio, adapted to the different phytoclimatic areas of the territory, *in situ*/on-farm conservation, of swarms of pure-bred ligustica in protected apiaries at local beekeepers, in protected natural areas, the use of instrumental insemination of queens, in order to conserve purity, and the creation of a DNA database.
To date, the project has seen the involvement of 37 beekeepers, 3 Associations of Beekeepers of Lazio, 4 Protected Natural Areas (Circeo National Park, Riviera di Ulisse Regional Park, Vejo Park, State Natural Reserve Presidential Estate of Castel Porziano), which have actively contributed to the implementation of the project itself and especially to the establishment and management of 4 protected apiaries protected by Regional Law No. 15/2000. Sampling was conducted on 128 hives with morphometric survey of adult bees, the results of which showed, out of 43 families analyzed, a ≥ 95% correspondence with *Apis mellifera* ligustica. Genetic analyses, performed on 50 samples taken in apiaries located in the 4 phytoclimatic areas, showed the existence of 3 evolutionarily divergent subspecies from the point of view of mitochondrial DNA.

A HISTORY FOR AGROBIODIVERSITY

In order to register a plant or animal resource in the Regional Voluntary Registry, Regional Law 15/2000 provides that there needs to be historical evidence attesting to its presence or introduction in the regional territory for at least fifty years. To meet this criterion, historical and bibliographic research is essential. The traces of the presence of indigenous fruit trees, vegetable species or animal breeds in the Lazio region are identified mainly in archives records or old agronomic publications, agrarian land registers, reports of agrarian committees, historical photographs, archeological finds or pictorial forms. In addition, the essential help of the farmers themselves is not to be underestimated as through their personal and family memories they become, with their stories, valuable oral sources for reconstructing the history of the resource they helped to protect and preserve.

THE FARMER GUARDIAN OF AGROBIODIVERSITY AND KNOWLEDGE

The richness of agricultural biodiversity is closely linked to the geographic variability of Lazio and local agricultural production systems. The sizeable presence of family farming and smallholdings, located mainly in hilly and mountainous areas, has allowed for the survival of numerous species of agricultural interest that have not been replaced by cultivars that better met criteria of productivity and mechanization of crop cycles. The peculiarities of the territories, the diversity in soils and climate, combined with the selective action of farmers, led to adaptation of these varieties to the geographical context over time. At the same time, in a dynamic relationship with the land, local communities developed cultivation and soil and water management techniques that best met production needs while respecting the land vocation. Tools, equipment, grafting, pruning or fertilizing techniques, seed selection, and processing of raw materials are to all intents and purposes cultural expressions of the agricultural work from which gestures, knowledge, and languages particularly rich in meaning and social value have sprung, such as rituals related to food consumption or social events, and religious festivals. This empirical knowledge has been recognized for all intents and purposes as an integral part of our cultural heritage (in Italy with the Ministerial Order Ministry of Agricultural, Food and Forestry Policy/Ministry of Cultural Heritage and Activities and Tourism April 2008-identification of Italian agri-food products as an expression of the Italian cultural heritage and by UNESCO in 2003). The age of the holders and the difficulty in the generational transmission of this knowledge, however, contribute to making such knowledge, like agrobiodiversity, at "risk of erosion". Driven by these considerations, ARSIAL has become the promoter of ethnographic research projects on the wealth of knowledge of local communities, making use of the collaboration with the University La Sapienza of Rome. The research put in place included the development of special forms for the survey of intangible assets on indigenous animal and plant resources in order to classify the knowledge possessed by farmers who are members of the Conservation and Security Network on plant varieties and animal breeds included in the VRR or about to be included in the Registry. The ethnographic method allows for the identification of practices, ways of life, approaches and actions of individuals or communities where agricultural biodiversity continues to be cultivated and raised. The collected information also makes it possible to gather unexpressed or overt intentions, potentialities or weaknesses within communities or individual farms. Moreover, the forms, once they are completed, are very useful and helpful in assisting the work of ARSIAL technicians working in the field of agrobiodiversity and are closely linked to historical research.



AGROBIODIVERAPP"ON THE ROADS OF AGRICULTURAL BIODIVERSITY IN LAZIO REGION"

With the project "On the roads of agricultural biodiversity in Lazio Region", financed by the Fund for the protection of biodiversity of agricultural and food interest, established by Law No. 194/2015, ARSIAL has set itself the goal of giving public recognition and visibility, especially to "walkers", the work that for over twenty years it has pursued in the field of protection and enhancement of indigenous biodiversity of agricultural interest in Lazio and at risk of genetic erosion.

Based on the rich network of paths that already cross our region and penetrate rural areas, ARSIAL has designed an App that tells the story of the agricultural biodiversity of those territories.

AgroBiodiverApp is a mobile App designed as an interactive guide that, thanks to gpx tracks and geolocation, makes it possible to visualize the routes and, stage by stage, along the path chosen by the walker, helps him/her in reading the historical and current rural landscape. The App points out sites of agricultural biodiversity conservation and provides description sheets of local plant, animal and genetic resources protected by Regional Law No. 15/2000.

The App also provides information on quality productions, PDO, PGI or traditional agri-food Products related to agricultural biodiversity, indicates the distance to farms and farm stays that preserve biodiversity, and directs the traveler to the farms and breeding farms of the holders or places where it is possible to buy and taste the products derived from protected resources.

In this first phase of the project, the itineraries proposed in AgroBiodiverApp are the four Paths of faith officially recognized in the Network of paths in Lazio, namely the Via Francigena of the north and that of the south, the path of St. Benedict and the path of Francis in its variants; in addition, it outlines the stages of a fifth informal path that from Rome heads south along the Via Prenestina and that from the Valle Latina trespasses into Molise along the Val di Comino.

The extension of the itineraries included in the App is ongoing so as to include a growing number of businesses and resources spread within the Lazio region.

BIODIVERSITY AND INNOVATION

ARSIAL and the association Rete Semi Rurali in 2019 successfully collaborated in organizing a course dedicated to updating agronomists, technicians, farmers and students on various technical-scientific and legislative aspects related to the management of biodiversity of agricultural interest and the implementation of a participatory and evolutionary genetic improvement project aimed at selecting heterogeneous genetic materials adapted to the different agro-ecosystems of Lazio, especially in the areas where local varieties have not been found.

The key moment of the course of technical and scientific training seminars, "Promoting Diversity to Innovate Agricultural Systems", was the school on Participatory and Evolutionary Genetic Improvement, held by the Rete Semi Rurali at DIBAF of the University of Tuscia, February 25-28, 2020, with the aim of providing technicians, farmers, students and administrators with the necessary tools to increase their knowledge in this field.

The "Participatory and Evolutionary Genetic Improvement Project to obtain seeds adapted to different agro-ecosystems in Lazio and in particular to low-input farming systems", covered 3 species: soft wheat, tomato and lentil and involved different actors, promoting community management of agricultural biodiversity.

The project was developed on three levels: introduction of heterogeneous genetic material in Lazio and reproduction of seed; exposure and learning of an innovative method and approach in managing agricultural biodiversity; and identification of opportunities for the creation of heterogeneous material from Lazio's local varieties preserved by ARSIAL.

Evolutionary population of soft wheat

The reproduction of seed of the evolutionary population of soft wheat (established at ICARDA and arrived in Italy with the SOLIBAM project) was attended by more than twenty farms; during on-the-field days organized at the farms, farmers and technicians visited the fields to observe the adaptation of the evolutionary population to the different soils and climatic conditions of the different areas, and to exchange insights on cultivation techniques and different experiences of product processing.

Evolutionary population of tomato
The reproduction of seed of the SOLIBAM Cuor di bue tomato population was carried out in 2019, at two farms in the province of Rome where, following a specific experimental protocol, farmers and citizens participating in on-the-field day were invited to express their opinion on the individual plants and their sensory assessment of the berries.

Thus, 2 breeding populations were obtained at each farm by a single environmental selection. In the second year, the experimentation, carried out at only one of the two farms, consisted of sowing seed from the previous year (seed controlled by ARSIAL at the CREA-DC laboratories in order to verify the absence of pathogens), and comparing the population reproduced the first year with the progeny of some previously selected plants. During the summer of 2020, production data (number and weight of berries) were collected, and new seed from the population was obtained. In the third year, a modest amount of seed from the tomato population, reproduced in the first year of the experiment, was distributed to about ten farms in Lazio, in the different provinces.

Evolutionary population of lentil
For the lentil species, a mixture was obtained from local varieties (study conducted in collaboration with the Scuola Superiore Sant'Anna in Pisa).

For more information, seminar presentations and the project report can be downloaded from www.arsial.it at the biodiversity "thematic focus".

APPENDIX 1

Regional Law No. 15, of March 1, 2000
Protection of indigenous genetic resources of agricultural interest (1)

Art. 1
Purpose
1. The Lazio Region favors and promotes, as part of the policies of development, promotion and preservation of agro-ecosystems and quality productions, the protection of indigenous genetic resources of agricultural interest, including wild plants related to cultivated species, in respect of species, breeds, varieties, populations, cultivars, ecotypes and clones for which there exist interests from the economic, scientific, environmental, and cultural points of view and which are threatened by genetic erosion.
2. Species, breeds, varieties and cultivars of external origin, which have been introduced into the regional territory for at least fifty years and which, having become integrated into the agro-ecosystem of Lazio, have acquired specific characteristics to the extent of being of interest for the purposes of their protection, may also be considered indigenous for the purposes of paragraph 1.
3. Species, breeds, varieties, currently disappeared from the region and preserved in botanical gardens, breeding farms, experimental institutes, public or private gene banks, research centers of other regions or countries, for which there exists an interest in encouraging reintroduction, may also be protected under this law.

Art. 2
Voluntary Regional Register
1. In order to enable the protection of genetic heritage, the Voluntary Regional Register is established, divided into animal section and plant section, in which species, breeds, varieties, populations, cultivars, landraces and clones of regional interest referred to in Article 1 are registered.
2. The Register referred to in paragraph 1 shall be kept by Lazio's Regional Agency for Agricultural Development and Innovation (ARSIAL).
3. The Regional Council, within six months as from the date of entry into force of this law, shall lay down the methods to keep the Voluntary Regional Register and for the registration in it of the species and varieties referred to in Article 1, taking into account the following criteria:
(a) The voluntary regional Register, consisting of the animal and plant sections, shall be organized in a manner that takes into account the technical characteristics of similar instruments that may exist nationally and internationally, so as to make it as homogeneous and comparable with them as possible;
(b) the accessions referred to in Article 1(1) must be identifiable by a minimum number of characters defined for each individual entity in order to be registered in the Voluntary Regional Register;
(c) registration in the Voluntary Regional Register shall be free of charge and carried out by ARSIAL, after obtaining the favorable opinion of the competent technical-scientific commission referred to in Article 3;
(d) registration shall take place upon the initiative of ARSIAL ex officio, or upon the proposal of the Regional Council, scientific bodies, public bodies, private organizations and associations, and individual citizens;
(e) specific historical-technical-scientific documentation shall be attached to the application;
(f) the material registered in the Voluntary Regional Register may be removed by ARSIAL, following a favorable opinion of the competent technical and scientific committee referred to in Article 3, when the requirements of Article 1, paragraph 1, are no longer in place.

Art. 3
Scientific and technical committees
1. To carry out the duties under this law, the technical and scientific commission for the animal sector and the technical and scientific commission for the plant sector shall be established.
2. The technical and scientific committee for the animal sector is made up of:
(a) an officer of the regional department in charge of animal genetic resources in agriculture;
(b) an ARSIAL officer with expertise in animal genetic resources in agriculture;
(c) one farmer who keeps animal material whose protection is provided by this law, representing the farming community;
(d) five experts from science and academia with expertise in animal genetic resources in agriculture.

3. The scientific and technical committee for the plant sector is made up of:
(a) two officers of the regional department in charge of herbaceous, tree and forestry plant genetic resources of agricultural interest;
(b) a representative of ARSIAL with expertise in genetic resources of herbaceous, tree and forestry plants of agricultural interest;
(c) a farmer who holds herbaceous, tree or forest plant material of agricultural interest whose protection is provided by this law, representing the agricultural community;
(d) ten experts from science and academia with expertise in herbaceous, tree and forestry plant genetic resources of agricultural interest.
4. The commissions referred to in paragraphs 2 and 3 shall be in office for five years and elect a chairman from among their members.
5. For the designation and appointment of the members of the commissions referred to in paragraphs 2 and 3, as well as for the payment of their attendance fee for each meeting and for the reimbursement of travel expenses and mission allowances, if any, the relevant regional regulations shall apply.
6. ARSIAL shall provide, through its offices, the necessary technical-operational support for the operation of the committees referred to in paragraphs 2 and 3.

Art. 4
Conservation and safety network
1. The protection and conservation of indigenous genetic resources of agricultural interest, registered in the voluntary regional Register referred to in Article 2, is implemented through the establishment of a Conservation and Safety Network, hereinafter referred to as the network, managed and coordinated by ARSIAL, which may be joined by municipalities, mountain communities, experimental institutes, research centers, agricultural universities, interest groups and individual or associated farmers.
2. The Network is responsible for the *in situ* or on-farm conservation of genetic material of regional interest referred to in Article 1 and the multiplication of such material in order to make it available to farm operators who request it, either for cultivation or for selection and improvement.
3. ARSIAL shall prepare lists, on a province-by-province basis, of sites where conservation takes place in accordance with paragraph 2 and shall transmit them annually to the municipalities concerned, which shall provide information regarding the existence of such sites.
4. Farmers included in the network may sell a small quantity of the seed they produce, established for each individual entity at the time of registration in the Voluntary Regional Register. In addition, farmers included in the network may carry out on-farm reseeding.
5. Farmers, agencies, research centers, agricultural universities and associations owning plant or animal material protected by this law and which do not join the network, are required to provide ARSIAL with a portion of the living material for the purpose of multiplication, to ensure the preservation of genetic information at another site.

Art. 5
Genetic resource heritage
1. Without prejudice to the right of ownership over any plant or animal registered in the Register referred to in Article 2, the genetic resources heritage of such plants or animals belongs to the indigenous and local communities, among which the benefits must be equally distributed, as provided for in Article 8j of the Rio Convention on Biodiversity (1992), ratified by Law No. 124 of February 14, 1994.

Art. 6
Sector plan of action
1. The Region shall approve, every five years, by June 30, a sector plan of action in which guidelines are established for activities related to the protection of indigenous genetic resources of agricultural interest. The sector plan shall remain in force until the plan for the following five-year period is approved. (3)
2. In the sector plan referred to in paragraph 1, the Region:
(a) encourages initiatives, both public and private, which tend to preserve indigenous biodiversity of agricultural interest, disseminate knowledge and innovations for the use and enhancement of indigenous materials and products, the protection of which is guaranteed by this law;
(b) directly undertake specific initiatives suitable for the protection, improvement, multiplication and enhancement of indigenous genetic resources;

(c) provides specific initiatives to encourage farmers included in the conservation and safety network.

3. Within the framework and in application of the sector plan referred to in paragraph 1, the Region shall prepare, for each of the years included in the five-year period (4), an annual operational program for the implementation of the planned activities and initiatives, specifying, inter alia, the economic resources available, the extent of individual contributory interventions and the relevant beneficiaries, the procedures for access to and disbursement of benefits, the priority areas of intervention and the forms of control of the initiatives carried out.

4. Beneficiaries of contributions under the operational programs are all operators who join the network, as well as farmers who produce for the market the indigenous material of agricultural interest identified in the Voluntary Regional Register.

5. Annual operational programs are implemented by ARSIAL and are checked and monitored by the regional department in charge of agriculture.

Art. 7

Prohibitions and penalties

1. Within regional protected natural areas, areas of community, national and regional interest identified by Regional Council Resolution No. 2146 of March 19, 1996, and in sites included in the lists referred to in Article 4, paragraph 3, as well as in areas neighboring the aforesaid areas, for a distance of at least 2 kilometers, the use of genetically modified organisms is prohibited.

2. The following penalties apply to violations of the provisions of this Law:

a) (2);

(b) administrative sanction ranging between 500,000 lire to 3 million lire for those who violate the obligation set forth in Article 4, paragraph 5;

(c) administrative sanction of up to 1 million lire for violations not expressly provided for.

3. Violations shall be assessed in accordance with Law No. 689 of November 24, 1981, and subsequent modifications and integrations, regulated by Regional Law No. 30 of July 5, 1994.

4. The supervision and imposition of the sanctions referred to in paragraph 2 shall be carried out by the territorially competent municipalities. The provisions of Article 182, paragraph 2, of Regional Law No. 14 dated August 6, 1999, shall apply to the distribution between the Region and the municipalities of the amounts of sanctions imposed.

Art. 8

Suspensive clause of effectiveness and prevention of overlapping

1. The aid provided for in this law shall be implemented as of the date of publication in the Official Bulletin of the Region (BUR – Bollettino Ufficiale della Regione - OBR) of the notice on the positive outcome of the examination of compatibility by the Commission of the European Communities pursuant to Articles 87 and 88 of the Treaty establishing the European Community.

2. Funding granted under this law is not granted cumulatively with the funding provided for the same initiatives by other state and regional laws.

Art. 9

Financial rule

1. The charges under this law are part of the annual appropriations provided for in the regional budget in favor of ARSIAL.

This regional law shall be published in the Official Bulletin of the Region. It is the obligation of any person concerned to observe and enforce it as a law of the Lazio Region.

Notes:

(1) Updated text published in the Official Bulletin of the Lazio Region No. 9, March 30, 2000.

(2) Letter repealed by Article 14(1)(a) of Regional Law No. 15 of November 6, 2006.

(3) Paragraph replaced by Article 68(2)(a) of Regional Law No. 14 of August 11, 2021.

(4) Term amended by Article 68(2)(b) of Regional Law No. 14 of August 11, 2021.

The text has no legal force; therefore, the effectiveness of the original legislative acts remains unaffected.

APPENDIX 2

Law No. 194 of December 1, 2015
Provisions for the protection and enhancement of biodiversity of agricultural and food interest.

Art. 1
Subject matter and purpose

1. This law, in accordance with the Convention on Biodiversity, agreed at Rio de Janeiro on June 5, 1992, enforced by Law No. 124 of February 14, 1994, the International Treaty on Plant Genetic Resources for Food and Agriculture, adopted in Rome on November 3, 2001, enforced by Law No. 101 of April 6, 2004, the National Plan on Biodiversity of Agricultural Interest and to the National Guidelines for the *in situ*, on-farm and *ex situ* conservation of plant, animal and microbial biodiversity of agricultural interest, referred to in the Decree of the Minister of Agriculture, Food and Forestry of July 6, 2012, published in the Official Gazette No. 171 of July 24, 2012, sets forth the principles for the establishment of a national system for the protection and enhancement of biodiversity of agricultural and food interest, aimed at protecting local genetic resources of food and agricultural interest from the risk of extinction and genetic erosion.
2. The protection and enhancement of biodiversity of agricultural and food interest are also pursued through the protection of rural land, contributing to limit depopulation phenomena and preserve the land from genetic pollution and loss of genetic heritage.
3. The national system of protection and enhancement of biodiversity of agricultural and food interest consists of:

a) the National Register of Biodiversity of Agricultural and Food Interest referred to in Article 3;
b) the National Network of Biodiversity of Agricultural and Food Interest referred to in Article 4;
c) the National Portal of Biodiversity of Agricultural and Food Interest referred to in Article 5;
d) the Standing Committee on Biodiversity of Agricultural and Food Interest referred to in Article 8.

4. For the purposes of this law, central, regional and local governments, as well as relevant public agencies and bodies, are required to provide the subjects of the national system for the protection and enhancement of biodiversity of agricultural and food interest with data and information at their disposal.
5. For the purpose of enhancing and transmitting knowledge about biodiversity of agricultural and food interest, the Ministry of Agricultural, Food and Forestry Policies, the regions and the autonomous provinces of Trento and Bolzano may also encourage the activities of farmers aimed at recovering local plant genetic resources of food and agricultural interest and carrying out prevention and land management activities necessary to achieve the objectives of conservation of biodiversity of agricultural and food interest.
6. The Ministry of Agricultural, Food and Forestry Policies, the Ministry of Education, Universities and Research, the regions, the autonomous provinces of Trento and Bolzano and universities may promote projects aimed at the transmission of acquired knowledge on biodiversity of agricultural and food interest to farmers, students and consumers through appropriate training activities and cultural initiatives.

Art. 2
Definitions

1. For the purposes of this law, "genetic resources of food and agricultural interest" means genetic material of plant, animal and microbial origin that has actual or potential value for food and agriculture.
2. For the purposes of this law, "local resources" mean genetic resources of food and agricultural interest:

a) that originate in a specific territory;
b) which, while alien in origin, but not invasive, have long been introduced into the current target area, naturalized and traditionally integrated into its agriculture and animal husbandry;
c) which, although indigenous in a specific territory, have by now disappeared and preserved in botanical gardens, farms or conservation or research centers in other regions or countries.

3. For the purposes of this law, "custodian farmers" are defined as farmers who engage in the on-farm or *in situ* conservation of local animal genetic resources of food and agricultural interest at risk of extinction or genetic erosion, in accordance with the procedures defined by the regions and autonomous provinces of Trento and Bolzano. For the purposes of this law, "custodian breeders" are defined as breeders who engage in the conservation, on-farm or *in situ*, of local animal genetic resources of food and agrar-

ian interest at risk of extinction or genetic erosion, in accordance with the procedures set forth in the specifications for the keeping of herd books or Register records referred to in Law No. 30 of January 15, 1991, and Legislative Decree No. 529 of December 30, 1992, and in the regional provisions issued in this regard.

4. For the purposes of this law, expressions not otherwise defined shall be used according to the meaning which is assigned to them in the international agreements referred to in Article 1, the National Plan on Biodiversity of Agricultural Interest, the National Guidelines referred to in Article 1, or any subsequent amendments thereto.

Art. 3

National Register of biodiversity of agricultural and food interest

1. The National Register of Biodiversity of Agricultural and Food Interest is established at the Ministry of Agricultural, Food and Forestry Policies.

2. The Register lists all local genetic resources of food and agricultural interest of plant, animal or microbial origin that are at risk of extinction or genetic erosion.

3. The registration of a genetic resource of local food and agricultural interest in the Register is assessed to verify whether there exist the correct characterization and identification of the resource, its adequate conservation *in situ* or on-farm or *ex situ*, the correct indication of the storage area and the prospect of generating propagation material. In the absence of even one of the requirements indicated in the first period, registration cannot occur.

4. Species, varieties or breeds already identified by the plant directories or registries of the autonomous regions and provinces of Trento and Bolzano or by the herd books and Register records referred to in Law No. 30 of January 15, 1991, and Legislative Decree No. 529 of December 30, 1992, as well as indigenous genetic types of endangered animals according to the FAO classification, shall be included in the Register by right.

5. Genetic resources of food and agricultural interest registered in the Register shall be maintained under public responsibility and control, shall not be subject to intellectual property right or other right or technology restricting access or reproduction by farmers, including patents of an industrial nature and cannot be subject, in any case, to protection by plant variety rights pursuant to the International Convention for the Protection of New Varieties of Plants, adopted in Paris on December 2, 1961 and revised in Geneva on November 10, 1972, October 23, 1978 and March 19, 1991, enforced by Law No. 110. The genetic resources of food and agricultural interest are not patentable either, even partially derived from those listed in the Register, nor their parts and components, pursuant to the International Treaty on Plant Genetic Resources for Food and Agriculture, adopted in Rome on November 3, 2001, enforced by Law No. 101 of April 6, 2004.

6. For the implementation of the provisions of this article, the authorization of expenditure in Article 4, paragraph 1, of Law No. 101 of April 6, 2004, is increased by Euro 288,000 for the year 2015.

Art. 4

National network of biodiversity of agricultural and food interest

1. The National Network of Biodiversity of Agricultural and Food Interest is established, consisting of:

a) local, regional and national facilities for *ex situ* germplasm conservation;
b) custodian farmers and breeders.

2. The Network performs all activities aimed at preserving local genetic resources of food and agricultural interest from the risk of extinction or genetic erosion, through *in situ* or on-farm or *ex situ* conservation, as well as encouraging their reintroduction into cultivation or other forms of enhancement.

3. The Network is coordinated by the Ministry of Agricultural, Food and Forestry Policies, in agreement with the regions and autonomous provinces of Trento and Bolzano.

Art. 5

National portal of biodiversity of agricultural and food interest

1. The National Portal of Biodiversity of Agricultural and Food Interest is established at the Ministry of Agricultural, Food and Forestry Policies for the purpose of:

a) establishing a system of interconnected databases of locally identified, characterized and existing

genetic resources of food and agricultural interest in the national territory;
b) enabling the dissemination of information on local genetic resources of food and agricultural interest in order to optimize interventions aimed at their protection and management;
c) enabling the monitoring of the conservation status of biodiversity of agricultural and food interest in Italy.

2. Public research institutions shall communicate to the Portal, including through their respective documentation platforms, the results of research conducted on local food and agricultural genetic resources of interest for the purposes of this law.

3. For the implementation of the provisions of this article, the authorization of expenditure in Article 4, paragraph 1, of Law No. 101 of April 6, 2004, is increased for the year 2015 by Euro 152,000.

Art. 6

In situ, on-farm and ex situ conservation

1. The Ministry of Agricultural, Food and Forestry Policies, the regions and the autonomous provinces of Trento and Bolzano, within their respective competencies, shall identify, with no new or increased charges on public finances, public and private entities with proven experience in the field to activate the *ex situ* conservation of local genetic resources of food and agricultural interest in their territories, including for the purpose of participation in the National Network of Biodiversity of Agricultural and Food Interest.

2. The regions and autonomous provinces of Trento and Bolzano shall identify, with no new or increased charges on public finances, custodian farmers, including at the request of the farmers themselves, to activate the conservation, *in situ* or within farms, of local plant genetic resources of food and agricultural interest at risk of extinction or genetic erosion in their territory, as well as to encourage and promote the activity they perform, and shall provide for their registration in the National Network of Biodiversity of Agricultural and Food Interest.

Art. 7

National Plan and Guidelines for the conservation of biodiversity of agricultural and food interest

1. The update of the National Plan on biodiversity of agricultural Interest and the National Guidelines for the *in situ*, on-farm and *ex situ* conservation of plant, animal and microbial biodiversity of agricultural interest, referred to in the Decree of the Minister of Agricultural, Food and Forestry Policies of July 6, 2012, published in the Official Gazette No. 171 of July 24, 2012, is provided for by decree of the Minister of Agricultural, Food and Forestry Policy, after agreement in the Permanent Conference for Relations between the State, Regions and Autonomous Provinces of Trento and Bolzano and after consulting the Standing Committee on Biodiversity of Agricultural and Food Interest referred to in Article 8.

2. The National Plan on biodiversity of agricultural interest and the National Guidelines referred to in paragraph 1 shall be updated periodically, and in any case at least every five years, in order to take into account the progress achieved in implementing activities and developments in scientific research, as well as developments in the relevant regulations at the national and international levels.

Art. 8

Standing Committee on biodiversity of agricultural and food interest.

1. In order to ensure the coordination of actions at the state, regional and autonomous provinces of Trento and Bolzano levels on the protection of biodiversity of agricultural and food interest, the Standing Committee on biodiversity of agricultural and food interest is established at the Ministry of Agricultural, Food and Forestry Policies. The Committee shall be renewed every five years.

2. The Committee is chaired by a representative of the Ministry of Agricultural, Food and Forestry Policies and consists of six representatives of the regions and autonomous provinces of Trento and Bolzano, identified by the regions themselves at the Permanent Conference for Relations between the State, Regions and Autonomous Provinces of Trento and Bolzano, a representative of the Ministry of Education university and research, a representative of the Ministry of the Environment and Protection of Land and Sea, a representative of the Ministry of Health, and three representatives of custodian farmers and breeders designated by the Permanent Conference for Relations between the State, the regions and the

autonomous provinces of Trento and Bolzano.

3. In particular, the Committee has the following tasks:

a) identify the objectives and results of individual actions contained in the National Plan on biodiversity of agricultural Interest;

b) gather the research requests made by public and private entities and forward them to relevant scientific institutions;

c) facilitate the exchange of experience and information in order to ensure the implementation of the relevant legislation;

d) collect and harmonize the proposals for action aimed at the protection and sustainable use of local genetic resources of food and agricultural interest, coordinating the actions to be implemented;

e) facilitate the transfer of information to local operators;

f) establish a common system of identification, characterization and evaluation of local genetic resources of food and agricultural interest.

4. The Committee shall also perform the functions formerly assigned to the Standing Committee on genetic resources established by Decree No. 6214 of March 10, 2009, of the Minister of Agriculture, Food and Forestry Policy, which is abolished.

5. The decree of the Minister of Agricultural, Food and Forestry Policies, to be issued within ninety days from the date of entry into force of this law after agreement at the Permanent Conference for relations between the State, the regions and the autonomous provinces of Trento and Bolzano, shall govern the organization and functioning of the Committee, as well as the procedures for the integration of the members referred to in paragraph 2 with representatives of research bodies and institutions. The functioning of the Committee shall be provided for with the human, instrumental and financial resources available under the current legislation and, in any case, with no new or greater charges on public finances. Participation in the Committee does not entitle to payment of compensations, attendance fees, emoluments, allowances or reimbursement of expenses by whatever name they may be known.

6. The Minister of Agricultural, Food and Forestry Policy shall submit to the Houses an annual report by the Committee on the implementation of the provisions of this article.

Art. 9

Protection of plant varieties registered in the Register and agri-food products protected by trademarks

1. In Paragraph 4 of Article 45 of the Industrial Property Code, set forth in Legislative Decree No. 30 of February 10, 2005, as amended, the following subparagraph shall be added after subparagraph (b):

"b-bis) the plant varieties registered in the National Register of biodiversity of agricultural and food interest, as well as varieties from which productions marked with protected designation of origin, protected geographical indication or traditional specialty guaranteed and from which derive traditional agri-food products".

Art. 10

Fund for the protection of biodiversity of agricultural and food interest

1. For the purpose of protecting the biodiversity of agricultural and food interest covered by this law, an appropriation of Euro 500,000 annually from 2015, the Fund for the protection of biodiversity of agricultural and food interest, earmarked to support the actions of farmers and breeders in the implementation of this law, as well as for the support of public entities engaged, exclusively for multiplication purposes, in the production and conservation of seeds of conservation varieties at risk of genetic erosion or extinction.

2. The Minister of Agricultural, Food and Forestry Policy, acting in concert with the Minister of the Environment and the Protection of Land and Sea and the Minister for Economic Affairs and Finance, by agreement at the permanent Conference for relations between the State, the regions and the autonomous provinces of Trento and Bolzano, by decree, to be issued within ninety days from the date of entry into force of this law, defines, in compliance with the expenditure limit referred to in paragraph 1, the procedures for the functioning of the Fund and identifies the actions for the protection of biodiversity to support.

Art. 11

Marketing of seed of conservation varieties

1. Paragraph 6 of Article 19-bis of Law No. 1096 of November 25, 1971, as amended, is replaced by the following:

"6. Farmers who produce the seed varieties registered in the National Register of Conservation Varieties, in the places where these varieties have evolved their characteristic properties, are granted the right to direct and local sale of seeds or propagation materials related to these varieties and produced on the farm, as well as the right to free trade within the national Network of biodiversity of agricultural and food interest, in accordance with the provisions of Legislative Decree No. 149 of October 29, 2009, and Legislative Decree No. 267 of December 30, 2010, without prejudice to the provisions of the current phytosanitary legislation".

Art. 12

Establishment of biodiversity paths of agricultural and food interest

1. The State, regions and autonomous provinces of Trento and Bolzano may carry out periodic promotional campaigns for the protection and enhancement of biodiversity of agricultural and food interest. In this context, special paths are also provided in order to encourage the knowledge of local genetic resources of food and agricultural interest registered in the National Register of biodiversity of agricultural and food interest and the development of the territories concerned, including by indicating the places of conservation *in situ* or on farms or *ex situ* and the places of marketing of products related to the same resources, including direct sales points.

Art. 13

Community of food and of the biodiversity of agricultural and food interest

1. In order to raise awareness, to support agricultural and food production, in particular of the national Network referred to in Article 4, as well as to promote behaviors aimed to protect biodiversity of agricultural and food interest, the Ministry of Agricultural, Food and Forestry Policies, the regions and the autonomous provinces of Trento and Bolzano, also with the contribution of protection consortia and other recognized entities, may promote, with no new or increased charges on public finances, the establishment of communities of food and of the biodiversity of agricultural and food interest.

2. For the purposes of this law, "communities of food and of the biodiversity of agricultural and food interest" are defined as local areas resulting from agreements between local farmers, custodian farmers and breeders, ethical purchasing groups, educational and university institutions, research centers, associations for the protection of the quality of the biodiversity of agricultural and food interest, school canteens, hospitals, food service establishments, commercial establishments, small and medium-sized artisan agricultural and food processing enterprises, and public entities.

3. The agreements referred to in paragraph 2 may have as their purpose:

a) the study, recovery and transmission of knowledge about local genetic resources of food and agricultural interest;
b) the implementation of forms of short supply chain, direct sales, exchange and purchase of agricultural and food products within local circuits;
c) the study and dissemination of practices typical of organic farming and other farming systems having a low environmental impact and aimed at saving water, reducing carbon dioxide emissions, improving soil fertility and reducing the use of packaging for the distribution and sale of products;
d) the study, recovery and transmission of traditional knowledge related to agricultural crops, natural seed selection to cope with climate change and proper nutrition;
e) the creation of educational, social, urban and collective gardens as tools for the enhancement of local varieties, education on the environment and agricultural practices, social aggregation and the redevelopment of brownfield or degraded areas or of unused farmland.

Art. 14

Establishment of the National Day of Biodiversity of agricultural and food interest

1. The Republic recognizes May 20 as the National Day of Biodiversity of agricultural and food interest. This recognition does not result in a reduction in the working hours of public offices, nor, if falling on a weekday, does it constitute a vacation or result in a reduction in the timetable for schools of all levels, pursuant to Articles 2 and 3 of Law No. 54 of March 5, 1977.

2. On the occasion of the National Day of Biodiversity of agricultural and food interest, ceremonies,

initiatives, meetings and seminars are organized, particularly in schools of all levels, dedicated to the universal values of agricultural biodiversity and how to protect and preserve the existing heritage.

Art. 15
Initiatives at schools
1. In order to raise young people's awareness of the importance of agricultural biodiversity and how to protect and conserve the existing heritage the regions, in preparing the implementing measures of rural development programs, may promote projects aimed at implementing, at schools of all levels, actions and initiatives aimed at the knowledge of agri-food products and local resources.

Art. 16
Interventions for research on the biodiversity of agricultural and food interest
1. The three-year plan of the activities of the Council for research in agriculture and analysis of agricultural economics, drawn up in accordance with Article 2 of Legislative Decree No. 454 of October 29, 1999, provides for interventions for research on biodiversity of agricultural and food interest and the techniques necessary to foster, protect and develop it, as well as interventions aimed at the recovery of sound practices with reference to human nutrition, animal nutrition with non-genetically modified products and water conservation.
2. The Minister of Agricultural, Food and Forestry Policies shall allocate, by decree, a part of the resources entered annually in the budget of the Ministry of Agricultural, Food and Forestry Policies for financing the innovative projects on biodiversity of agricultural and food interest, after the completion of the selection procedures by public tender provided for in the current legislation.

Art. 17
Implementing provisions
1. The Minister of Agricultural, Food and Forestry Policies, by agreement at the permanent Conference for relations between the State, the regions and the autonomous provinces of Trento and Bolzano, having consulted the Committee referred to in Article 8, by decree to be issued within ninety days from the date of entry into force of this law, defines the procedures to establish and operate the Register referred to in Article 3 and identifies the technical procedures for the implementation of the national Network referred to in Article 4, as well as the reference centers specialized in the collection, preparation and conservation of local genetic resources of food and agricultural interest in accordance with the provisions of the national Guidelines referred to in Article 7.

Art. 18
Financial Provisions
1. The costs deriving from the provisions of Articles 3, 5 and 10, amounting to a total of Euro 940,000 for the year 2015 and Euro 500,000 as from the year 2016, shall be provided for by a corresponding reduction in the appropriation of the special fund in the current account, for the purpose of the three-year budget 2015- 2017, under the program "Reserve and special funds" of the mission "Funds to allocate" of the statement of estimates of the Ministry for Economic Affairs and Finance for the year 2015, partially using for the purpose the appropriation relating to the Ministry of Agricultural, Food and Forestry Policies.
2. The administrations concerned shall provide for the implementation of the provisions of this law, with the exception of those in Articles 3, 5 and 10, in the context of the human, instrumental and financial resources available under the current legislation and, at any rate, with no new or increased charges on public finances.

This law, bearing the seal of the State, shall be included in the official Reports of the regulatory acts of the Italian Republic. It is incumbent on anyone having the obligation to do so to observe and enforce it as a law of the State.

APPENDIX 3

REGIONAL LAW NO. 15 OF MARCH 1, 2000
VOLUNTARY REGIONAL REGISTER - PLANT SECTION
LIST OF REGISTERED INDIGENOUS VEGETAL GENETIC RESOURCES
AS OF 2022

No.	Type of crop	Common name of the species	Name of genetic resource (synonyms)	Risk of genetic erosions, as of July 2015	"Conservation Area in situ"	Date of registration in the Voluntary Regional Register	Registration in National Register
1	tree	Apricot	Apricot of Monteporzio	High	province of Rome	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
2	tree	Apricot	Apricot of Velletri	High	Velletri (Rome), Cisterna (Latina)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
3	tree	Apricot	S. Maria in Gradi -AL1	Medium	province of Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
4	tree	Azerole	Red Azerole	Medium	Lazio	November 19, 2001	Variety undergoing registration in list B of the National Register of the Varities of fruit plants allowed for marketing (Legislative Decree 124/2010)
5	tree	Chestnut	"Marrone Premutico (Primatico, Primaticcio, Primotico viterbese, Pelusiello)"	High	Viterbo, Municipality of Manziana (Rome)	July 7, 2005	Variety registered in the Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
6	tree	Cherry	Bella di Pistoia	Medium	provinces of Rieti, Rome and Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
7	tree	Cherry	Biancona	Medium	provinces of Rieti, Rome and Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
8	tree	Cherry	Buonora	High	provinces of Rieti, Rome and Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
9	tree	Cherry	Cerasa a sacco	High	Cisterna (Latina)	September 7, 2020	Variety entered in the Officially Recognized Description (ORD) in the National Register of varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
10	tree	Cherry	"Core (Durona)"	Medium	provinces of Rieti, Rome and Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
11	tree	Cherry	Crognalina di Marcellina	High	Marcellina (Rome)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
12	tree	Cherry	Crognolo	High	provinces of Rieti, Rome and Viterbo	July 7, 2005	Variety registere with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).

No.	Type of crop	Common name of the species	Name of genetic resource (synonyms)	Risk of genetic erosions, as of July 2015	"Conservation Area in situ"	Date of registration in the Voluntary Regional Register	Registration in National Register
13	tree	Cherry	Graffione	High	provinces of Rieti, Rome and Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
14	tree	Cherry	"Lingua de Fori (Liguaccia)"	High	provinces of Rieti, Rome and Viterbo	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
15	tree	Cherry	Maggiolina	Medium	provinces of Rieti, Rome and Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
16	tree	Cherry	Morona	Medium	provinces of Rieti, Rome and Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
17	tree	Cherry	"Patrei nera (Patrea nera)"	High	Maenza (Latina)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
18	tree	Cherry	"Patrei rossa (Patrea rossa)"	High	Maenza (Latina)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
19	tree	Cherry	Petrocca	High	provinces of Rieti, Rome and Viterbo	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
20	tree	Cherry	Ravenna a gambo corto	High	provinces of Rieti, Rome and Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
21	tree	Cherry	Ravenna a gambo lungo	High	provinces of Rieti, Rome and Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
22	tree	Cherry	"Ravenna precoce (Ravenna del Papa, Ravenna Primotica)"	Medium	provinces of Rieti, Rome and Viterbo	July 7, 2005	Variety entered in the Officially Recognized Description (ORD) in the National Register of varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
23	tree	Cherry	Ravenna tardiva	Medium	provinces of Rieti, Rome and Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
24	tree	Apple	"Agostina (Agostinella rossa)"	High	Castelli Romani (Roman Castles), Monti Lepini (Lepini Mountains) (Rome - Latina)	September 7, 2020	Variety regiostered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
25	tree	Apple	Agre di Sezze	High	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
26	tree	Apple	Agre di Viterbo	High	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).

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27	tree	Apple	Appia	Medium	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
28	tree	Apple	Bebè	High	Poggio Mirteto (Rieti) and neighboring municipalities	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
29	tree	Apple	Calvilla	Medium	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
30	tree	Apple	Capo d'Asino	High	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
31	tree	Apple	"Cerina "	Medium	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
32	tree	Apple	Cipolla (onion-shaped)	Medium	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
33	tree	Apple	Cocoine	High	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
34	tree	Apple	Coppana	High	Magliano Sabina (Rome)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
35	tree	Apple	Dolce di Sezze	High	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
36	tree	Apple	Fragola	Medium	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
37	tree	Apple	Francesca	Medium	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
38	tree	Apple	Francesca di Castelliri	High	province of Frosinone	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
39	tree	Apple	Gaetana	High	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
40	tree	Apple	Gialla di Soriano	High	Soriano nel Cimino (Viterbo)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
41	tree	Apple	Limoncella	Medium	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).

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42	tree	Apple	Maiolina	High	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
43	tree	Apple	'Mbriachella	Medium	provinces of Rieti and Rome	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
44	tree	Apple	Nana	Medium	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
45	tree	Apple	Paoluccia	Medium	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
46	tree	Apple	Paradisa	Medium	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
47	tree	Apple	"Pianella (Rosa)"	High	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
48	tree	Apple	Pontella	Medium	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
49	tree	Apple	Prata	Medium	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
50	tree	Apple	Rosa di Alatri	Medium	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
51	tree	Apple	Rosa gentile	High	province of Rome	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
52	tree	Apple	Rosa piatta ciociara	High	province of Frosinone	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
53	tree	Apple	"Rosetta (Rosina)"	High	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
54	tree	Apple	Rossa di Carpineto	High	Carpineto Romano (Rome)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
55	tree	Apple	Rossa di Soriano	High	Soriano nel Cimino (Viterbo)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
56	tree	Apple	"Roscetta (Ruscetta)"	High	Castelliri (Frosinone)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).

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57	tree	Apple	Sant' Agostino	High	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
58	tree	Apple	San Giovanni	Medium	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
59	tree	Apple	"San Giovanni dei Lepini (San Giovanni di Carpineto)"	High	Carpineto Romano (Rome)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
60	tree	Apple	Spugnaccia	High	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
61	tree	Apple	Sublacense	High	province of Rome	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
62	tree	Apple	Tonnorella	Medium	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
63	tree	Apple	Velletrana di Subiaco	High	province of Rome	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
64	tree	Apple	Verdona	High	province of Rieti	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
65	tree	Apple	Verdonica	High	province of Rieti	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
66	tree	Apple	Zuccherina	Medium	Lazio	November 19, 2001	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
67	tree	Pomegranate	Di Formia MG3	High	province of Latina	July 7, 2005	Variety under registration in list B of the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
68	tree	Pomegranate	Di Formia MG4	High	province of Latina	July 7, 2005	Variety under registration in list B of the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
69	tree	Pomegranate	Di Gaeta MG1	High	province of Latina	July 7, 2005	Variety under registration in list B of the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
70	tree	Pomegranate	Di Gaeta MG2	High	province of Latina	July 7, 2005	Variety under registration in list B of the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
71	tree	Hazel	"Barrettona (Cappello del prete)"	High	province of Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
72	tree	Hazel	"Casamale (Comune di Sicilia)"	High	province of Viterbo	July 7, 2005	Variety entered in the Officially Recognized Description (ORD) in the National Register of varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).

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73	tree	Hazel	"Rosa (Nocchia Rosa)"	Medium	province of Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
74	tree	Olive	Marina	Medium	municipalities of Alvito, Gallinaro, Picinisco, San Donato Valcomino and Settefrati (Frosinone)	May 19, 2004	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
75	tree	Olive	Minutella Casaré	High	municipalities of Itri, Priverno and Sonnino (Latina)	May 19, 2004	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
76	tree	Olive	Oliva dei Monti	High	municipalities of Marcellina, San Polo dei Cavalieri, Tivoli (Rome) and their neighboring municipalities	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
77	tree	Olive	Palmuta	High	municipalities of Marcellina, Palombara Sabina, San Polo dei Cavalieri, Tivoli (Rome) and their neighboring municipalities	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
78	tree	Olive	Rappaiana	High	municipalities of Marcellina, Palombara Sabina, San Polo dei Cavalieri, Tivoli (Rome) and their neighboring municipalities	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
79	tree	Olive	Romana	High	municipalities of Marcellina, Palombara Sabina, San Polo dei Cavalieri, Tivoli (Rome) and their neighboring municipalities	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
80	tree	Olive	Roscetta Gagliarda	High	municipalities of Marcellina, Palombara Sabina, San Polo dei Cavalieri, Tivoli (Rome) and their neighboring municipalities	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
81	tree	Olive	Rosciola Nostrana	Medium	municipalities of Marcellina, Palombara Sabina, San Polo dei Cavalieri, Tivoli (Rome) and their neighboring municipalities	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
82	tree	Olive	Rotonda di Tivoli	Medium	municipalities of Marcellina, Palombara Sabina, San Polo dei Cavalieri, Tivoli (Rome) and their neighboring municipalities	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).

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83	tree	Olive	Salvia	High	municipalities of Fara in Sabina (Rieti), Montelibretti, Moricone, Nerola and Palombara Sabina (Rome)	May 19, 2004	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
84	tree	Olive	Sbuciasacchi	High	municipalities of Marcellina, Palombara Sabina, San Polo dei Cavalieri, Tivoli (Rome) and their neighboring municipalities	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
85	tree	Olive	Sirole / Ciera dei Colli / Salviana / Vallecorsana	Medium	municipalities of Civitella San Paolo, Fiano Romano, Filacciano, Nazzano, Ponzano Romano, Rignano, Sant'Oreste, Torrita Tiberina (Rome). Vallecorsa, Castro dei Volsci and neighboring municipalities - Monte San Giovanni Campano, Veroli and neighboring municipalities (Frosinone). Sabina in the area around Rome and Rieti (Rieti - Rome)	May 19, 2004	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
86	tree	Olive	Vallanella	Medium	municipalities of Itri, Priverno and Sonnino (Latina)	May 19, 2004	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
87	tree	Pear	Abitir	High	province of Frosinone	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
88	tree	Pear	Agostina	High	Alatri (Frosinone)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
89	tree	Pear	"Angina (Ancina)"	High	Lazio	March 7, 2006	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
90	tree	Pear	Baccelli	High	province of Rome	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
91	tree	Pear	"Barocca (Invernale di S. Vito)"	High	province of Rome	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
92	tree	Pear	Biancona	High	provinces of Latina e and Rome	March 7, 2006	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
93	tree	Pear	Bottiglia	Medium	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).

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94	tree	Pear	Campana	Medium	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
95	tree	Pear	Cannella	High	province of Rieti	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
96	tree	Pear	Castrese	High	provinces of Latina and Rome	March 7, 2006	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
97	tree	Pear	"Cocozzola (Zucchina)"	High	province of Rome	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
98	tree	Pear	Cucuzzara	High	Alatri (Frosinone)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
99	tree	Pear	Cucuzzella	High	Castelliri (Frosinone)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
100	tree	Pear	De lu Prete	High	province of Rieti	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
101	tree	Pear	Del Principe	High	province of Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
102	tree	Pear	Di Posta	High	province of Frosinone	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
103	tree	Pear	"Di Santa Cristina (Peruzza) "	High	province of Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
104	tree	Pear	Fegatella	High	provinces of Latina and Rome	March 7, 2006	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
105	tree	Pear	"Garofano (Garofalo)"	High	Lepini Mountains (Rome - Latina)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
106	tree	Pear	"Invernale di Valle Imperiale (Invernale di Fondi)"	High	Fondi (Latina)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
107	tree	Pear	Monteleone	High	province of Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
108	tree	Pear	Pera mela	High	provinces of Latina and Rome	March 7, 2006	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).

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109	tree	Pear	Rossa di Maenza	High	provinces of Frosinone, Latina and Rome	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
110	tree	Pear	Sellecca	High	province of Frosinone	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
111	tree	Pear	"Spadona Ciociara (Spadona di Alatri) "	High	Alatri, Fumone, Ferentino (Frosinone)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
112	tree	Pear	Spadona di Castel Madama	Medium	province of Rome	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
113	tree	Pear	"Spina (Spinacarpi, Coccia d'Asino, Casentina)"	Medium	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
114	tree	Pear	Trentonce	High	province of Rieti	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
115	tree	Pear	Tunnella	High	provinces of Latina and Rome	March 7, 2006	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
116	tree	Pear	"Urgnina (Vernina)"	High	Ciociaria (Frosinone)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
117	tree	Peach	Ala	High	province of Rome	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
118	tree	Peach	Pesca Cuore	High	Velletri (Rome)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
119	tree	Peach	"Reginella (Pesca Uovo, Early Crawford)"	High	provinces of Rome and Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
120	tree	Peach	Reginella II	Medium	provinces of Rome and Viterbo	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
121	tree	Peach	"Tardiva di San Gregorio (Tardiva di San Vittorino)"	High	province of Rome	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).

No.	Type of crop	Common name of the species	Name of genetic resource (synonyms)	Risk of genetic erosions, as of July 2015	"Conservation Area in situ"	Date of registration in the Voluntary Regional Register	Registration in National Register
122	tree	Peach	" Nettarina Crasiommolo clone A (Crisomolo, Graziommolo)"	High	province of Rome	March 17, 2021	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
123	tree	Peach	"Nettarina Crasiommolo clone B (Crisomolo, Graziommolo)"	High	province of Rome	March 17, 2021	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
124	tree	Peach	"Nettarina Crasiommolo clone C (Crisomolo, Graziommolo)"	High	province of Rome	March 17, 2021	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
125	tree	Plum	Coscia di Monaca di Ponzano Romano	Medium	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
126	tree	Plum	Di Gallinaro	High	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
127	tree	Plum	Recinella (Mirabella, Racinella, Zuccherina)	High	province of Frosinone	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
128	tree	Plum	"Regina (R. Claudia verde, Pernigona verde, Reale, Lecina di Santa Francesca)"	High	Veroli, Fumone, Arce (Frosinone), Province of Viterbo	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
129	tree	Plum	"Rosina di Velletri (Ramicella rosa)"	High	Velletri, Lanuvio (Rome)	September 7, 2020	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
130	tree	Plum	San Giovanni	High	Lazio	July 7, 2005	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
131	tree	Sour Cherrry	Nana dei Castelli	High	Lazio	April 3, 2009	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
132	tree	Grape	Abbuoto n.	Medium	provinces of Latina, Rome, Viterbo and Frosinone	May 19, 2004	Grape variety registered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
133	tree	Grape	Albarosa rs.	High	municipality of Grottaferrata (Rome)	September 25, 2009	

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No.	Type of crop	Common name of the species	Name of genetic resource (synonyms)	Risk of genetic erosions, as of July 2015	"Conservation Area in situ"	Date of registration in the Voluntary Regional Register	Registration in National Register
134	tree	Grape	Aleatico n.	Low	provinces of Latina, Rieti, Rome and Viterbo	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
135	tree	Grape	Angelica b.	High	province of Frosinone	September 25, 2009	
136	tree	Grape	Biancolella b.	Low	Pontine Islands (Latina)	September 4, 2017	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
137	tree	Grape	Bombino bianco b.	Low	Lazio	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
138	tree	Grape	Bombino nero n.	Medium	provinces of Frosinone and Rome	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
139	tree	Grape	Calamaro n.	High	province of Frosinone	September 4, 2017	
140	tree	Grape	"Canaiolo nero n. (Cannaiola di Marta, Cannaiola)"	Medium	municipalities of Capodimonte, Marta and Tuscania (Viterbo)	November 19, 2001	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
141	tree	Grape	Capolongo b.	Medium	province of Frosinone	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
142	tree	Grape	"Capolongo rosso r. (Tstaregl rosso r.)"	Medium	province of Frosinone	September 4, 2017	
143	tree	Grape	"Cesenese nero n. (Cesenese di Castelfranco)"	Medium	province of Rieti	September 25, 2009	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
144	tree	Grape	Cimiciara b.	High	province of Frosinone	March 17, 2021	
145	tree	Grape	Corapecora n.	High	province of Frosinone	September 4, 2017	
146	tree	Grape	Foiana b.	High	province of Frosinone	September 4, 2017	
147	tree	Grape	Forastera b.	Medium	Pontine Islands (Latina)	September 4, 2017	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
148	tree	Grape	Greco b.	Medium	Lazio	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region

No.	Type of crop	Common name of the species	Name of genetic resource (synonyms)	Risk of genetic erosions, as of July 2015	"Conservation Area in situ"	Date of registration in the Voluntary Regional Register	Registration in National Register
149	tree	Grape	Greco bianco b.	Medium	provinces of Latina, Rome and Viterbo	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
150	tree	Grape	Greco nero n.	Medium	provinces of Latina, Rome and Viterbo	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
151	tree	Grape	Guarnaccia b.	Medium	Pontine Islands (Latina)	September 4, 2017	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
152	tree	Grape	Lecinaro n.	Medium	province of Frosinone	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
153	tree	Grape	Maturano b.	Medium	province of Frosinone	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
154	tree	Grape	Maturano nero n.	High	province of Frosinone	September 25, 2009	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
155	tree	Grape	Moscato di Terracina b.	Low	provincies of Frosinone, Latina and Rome	July 7, 2005	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
156	tree	Grape	Nero buono n.	Low	provinces of Latina and Rome	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
157	tree	Grape	Nerone n.	High	municipalities of Agosta, Canterano, Cervara di Roma, Gerano, Marano Equo, Rocca Canterano, Subiaco (Rome)	April 3, 2009	
158	tree	Grape	"Maiolica n. (Nostrano)"	High	municipality of Piglio (Frosinone)	April 3, 2009	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
159	tree	Grape	Olivella nera n.	Medium	province of Frosinone	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
160	tree	Grape	Pampanaro b.	Medium	province of Frosinone	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
161	tree	Grape	Passerina b.	Low	provinces of Frosinone and Rome	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
162	tree	Grape	Pecorino b.	Medium	province of Rieti and Rome	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
163	tree	Grape	Pedino b.	Medium	municipality of Montefiascone (Viterbo)	September 25, 2009	

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No.	Type of crop	Common name of the species	Name of genetic resource (synonyms)	Risk of genetic erosions, as of July 2015	"Conservation Area in situ"	Date of registration in the Voluntary Regional Register	Registration in National Register
164	tree	Grape	"Pellegrino (Pellegrina)"	Medium	Lazio	July 7, 2005	
165	tree	Grape	Petroveccia b.	High	province of Frosinone	September 4, 2017	
166	tree	Grape	Piedirosso n.	Medium	Pontine Islands (Latina)	September 4, 2017	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
167	tree	Grape	"Pizzutello bianco b. (Pizzutello di Tivoli, Dito di Donna)"	Low	provinces of Latina and Rome	July 7, 2005	Grape variety registered in the National Register of Table Vine Varieties.
168	tree	Grape	Pizzutello nero n.	Medium	provinces of Latina and Rome	April 3, 2009	
169	tree	Grape	Reale bianca b	Medium	provincia di Frosinone	September 4, 2017	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
170	tree	Grape	Romanesco b.	High	municipality of Montefiascone (Viterbo)	September 25, 2009	
171	tree	Grape	Rosciola rs.	Medium	province of Rome	July 9, 2003	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
172	tree	Grape	Tostella b	High	province of Rieti	September 4, 2017	
173	tree	Grape	"Ulivello nero n. (Raspato nero n.)"	Medium	province of Frosinone	September 4, 2017	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
174	tree	Grape	Uva dei vecchi b.	High	municipality of Montefiascone (Viterbo)	September 25, 2009	
175	tree	Grape	Uva Giulia n.	Medium	province of Frosinone	September 4, 2017	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
176	tree	Grape	"Uva Greca Puntinata b. (Greco, Empibotte) "	High	province of Viterbo	March 17, 2021	
177	tree	Grape	Uva Mecella b.	High	municipality of Pescosolido (Frosinone)	September 25, 2009	
178	tree	Grape	Verdello b.	Medium	provinces of Rieti and Viterbo	May 19, 2004	Grape variety entered in the National Register of Vine Varieties and in the Regional Register of Vine Varieties classified as suitable for the production of wine grapes in the Lazio Region
179	herbaceous	Garlic	Aglio Rosso di Castelliri	Medium	municipalities of Castelliri and Isola Liri (Frosinone)	March 7, 2006	

No.	Type of crop	Common name of the species	Name of genetic resource (synonyms)	Risk of genetic erosions, as of July 2015	"Conservation Area in situ"	Date of registration in the Voluntary Regional Register	Registration in National Register
180	herbaceous	Garlic	Aglio Rosso di Proceno	Medium	municipality of Proceno (Viterbo)	March 7, 2006	
181	herbaceous	Artichoke	Carciofo Campagnano	Medium	provinces of Latina, Rome and Viterbo	July 7, 2005	
182	herbaceous	Artichoke	Carciofo Castellamare	Medium	provinces of Latina, Rome and Viterbo	July 7, 2005	
183	herbaceous	Artichoke	Carciofo Ortano	High	municipality of Orte (Viterbo)	January 9, 2020	
184	herbaceous	Cabbage broccoli	Cavolo Rapa di Atina	High	municipalities of the Valle di Comino (Frosinone)	October 12, 2011	
185	herbaceous	Cabbage broccoli	Chiaccheteglio	High	municipality of Priverno (Latina)	October 12, 2011	
186	herbaceous	Cabbage broccoli	Pastardone	High	municipalities of Atina and Villa Latina (Frosinone)	October 12, 2011	
187	herbaceous	Chickpea	Cece di Canepina	High	municipality of Canepina (Viterbo)	March 7, 2006	
188	herbaceous	Chickling pea	Cicerchia di Campodimele	High	municipality of Campodimele (Latina)	October 12, 2011	
189	herbaceous	Turnip greens	Broccoletto di Castelliri	High	municipality of Castelliri (Frosinone)	October 12, 2011	
190	herbaceous	Turnip greens	Broccoletto di Priverno	High	municipalities of Maenza, Pontina, Priverno, Prossedi, Roccagorga, Roccasecca dei Volsci and Sonnino (Latina)	October 12, 2011	
191	herbaceous	Turnip greens	Rapa Catalogna di Roccasecca	High	municipalities of Roccasecca, Pontecorvo, Castrocielo, San Giovanni in Carico, Col felice, Rocca d'Arce, Colle S. Magno (Frosinone)	October 12, 2011	
192	herbaceous	Common bean	Cannellino di Atina	Medium	municipalities of Atina, Casalattico, Casalvieri, Gallinaro, Picinisco and Villa Latina (Frosinone)	May 19, 2004	
193	herbaceous	Common bean	Cannellino grigio di Piumarola	High	municipalities of Piedimonte San Germano and Villa Santa Lucia (Frosinone)	October 12, 2011	
194	herbaceous	Common bean	Cannellino rosso di Piumarola	High	municipalities of Piedimonte San Germano and Villa Santa Lucia (Frosinone)	October 12, 2011	

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No.	Type of crop	Common name of the species	Name of genetic resource (synonyms)	Risk of genetic erosions, as of July 2015	"Conservation Area in situ"	Date of registration in the Voluntary Regional Register	Registration in National Register
195	herbaceous	Common bean	Fagiolina Arsolana	High	municipalities of Arsoli, Marano Equo, Riofreddo, Vallepietra, Vallinfreda and Vivaro Romano (Rome)	July 9, 2003	
196	herbaceous	Common bean	Fagiolo a Pisello	High	municipality of Colle di Tora (Rieti)	July 7, 2005	
197	herbaceous	Common bean	Fagiolo Borbontino	High	municipality of Borbona - Rieti	February 15, 2010	
198	herbaceous	Common bean	Fagiolo Cappellette di Vallepietra	High	municipalities of Arsoli, Marano Equo, Riofreddo, Vallepietra, Vallinfreda and Vivaro Romano (Rome)	March 7, 2006	
199	herbaceous	Common bean	"Fagiolo Chiarinelli (Genzianesi)"	High	municipality of Accumoli and Amatrice (Rieti)	October 12, 2011	
200	herbaceous	Common bean	Fagiolo Ciavattone piccolo	High	province of Viterbo	November 19, 2001	
201	herbaceous	Common bean	Fagiolo Cioncone	High	municipalities of Arsoli, Marano Equo, Riofreddo, Vallepietra, Vallinfreda and Vivaro Romano (Rome)	July 9, 2003	
202	herbaceous	Common bean	"Fagiolo del Purgatorio (Fagiolo di Gradoli)"	Medium	province of Viterbo	November 19, 2001	
203	herbaceous	Common bean	Fagiolo Gentile di Labro	High	municipality of Labro (Rieti)	October 12, 2011	
204	herbaceous	Common bean	Fagiolo Giallo	High	province of Viterbo	November 19, 2001	
205	herbaceous	Common bean	Fagiolo Mughetto	High	municipality of Accumoli and Amatrice (Rieti)	October 12, 2011	
206	herbaceous	Common bean	Fagiolo Regina di Marano Equo	Medium	municipalities of Arsoli, Marano Equo, Riofreddo, Vallepietra, Vallinfreda and Vivaro Romano (Rome)	March 7, 2006	
207	herbaceous	Common bean	Fagiolo Romanesco di Vallepietra	High	municipalities of Arsoli, Marano Equo, Riofreddo, Vallepietra, Vallinfreda and Vivaro Romano (Rome)	March 7, 2006	
208	herbaceous	Common bean	Fagiolo Solfarino	High	province of Viterbo	November 19, 2001	
209	herbaceous	Common bean	Fagiolo Verdolino	High	province of Viterbo	November 19, 2001	

No.	Type of crop	Common name of the species	Name of genetic resource (synonyms)	Risk of genetic erosions, as of July 2015	"Conservation Area in situ"	Date of registration in the Voluntary Regional Register	Registration in National Register
210	herbaceous	Common bean	Pallino di Vallepietra	High	municipalities of Arsoli, Marano Equo, Riofreddo, Vallepietra, Vallinfreda and Vivaro Romano (Rome)	March 7, 2006	
211	herbaceous	Runner bean	"Ciavattone di Grisciano (Fagiolone di Grisciano)"	High	municipality of Accumoli and Amatrice (Rieti)	October 12, 2011	
212	herbaceous	Runner bean	"Fagiolone di Vallepietra (Fagiolo Ciavattone)"	Medium	municipalities of Arsoli, Marano Equo, Riofreddo, Vallepietra, Vallinfreda and Vivaro Romano (Rome)	July 9, 2003	
213	herbaceous	Emmer	Farro dell'Alta Valle del Tronto	Low	municipalities of Accumoli, Amatrice, Borbona, Cittareale, Colli sul Velino, Fiamignano, Labro, Leonessa, Morro Reatino, Petrella Salto, Posta and Rivodutri (Rieti)	November 19, 2001	
214	herbaceous	Emmer	Farro della Valle dell'Aniene		municipalities of Cinto Romano, Riofreddo, Vallinfreda and Vivaro (Rome)	November 19, 2001	
215	herbaceous	Horse bean	Favetta di Aquino	High	municipalities of Aquino e Castrocielo (Frosinone)	January 9, 2020	
216	herbaceous	Fennel	Finocchio di Tarquinia	High	municipalities of Montalto di Castro, Monte Romano, Tarquinia e Tuscania - Viterbo. Allumiere and Civitavecchia (Rome)	March 7, 2006	
217	herbaceous	Strawberry	Fragolina di Nemi	High	municipality of Nemi (Rome) and neighboring municipalities	July 9, 2003	Variety registered with Officially Recognized Description (ORD) in the National Register of Varieties of fruit plants allowed for marketing (Legislative Decree 124/2010).
218	herbaceous	Lentil	Lenticchia di Onano	High	municipality of Onano (Viterbo)	May 19, 2004	
219	herbaceous	Lentil	Lenticchia di Rascino	Low	municipalities of Fiamignano and Petrella Salto (Rieti)	February 15, 2010	
220	herbaceous	Lentil	Lenticchia di Ventotene	Medium	municipality of Ventotene (Latina)	February 15, 2010	
221	herbaceous	Corn	Mais Agostinella	High	municipality of Vallepietra (Rome)	May 19, 2004	

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No.	Type of crop	Common name of the species	Name of genetic resource (synonyms)	Risk of genetic erosions, as of July 2015	"Conservation Area in situ"	Date of registration in the Voluntary Regional Register	Registration in National Register
222	herbaceous	Pepper	Peperone Cornetto di Pontecorvo	Medium	municipalities of Pontecorvo, Esperia, S. Giorgio a Liri, Pignataro Interamna, Villa S. Lucia, Piedimonte S. Germano, Aquino, Castrocielo, Roccasecca, San Giovanni Incarico (Frosinone)	March 7, 2006	
223	herbaceous	Tomato	Pomodoro da secca di Minturno	High	municipalities of Minturno, Formia e Castelforte (Latina)	July 7, 2005	
224	herbaceous	Tomato	Pomodoro Scatolone di Bolsena	High	municipality of Bolsena (Viterbo)	November 19, 2001	
225	herbaceous	Tomato	Pomodoro Spagnoletta di Formia e Gaeta	Medium	municipalities of Itri, Gaeta, Formia, Minturno, Castelforte, Spigno Saturnia, Santi Cosma e Damiano (Latina)	July 7, 2005	
226	herbaceous	Celery	Sedano Bianco di Sperlonga	Medium	municipalities of Fondi e Sperlonga (Latina)	July 9, 2003	
227	herbaceous	Purple clover	Trifoglio Bolognino dell'Alto Viterbese	Medium	municipality of Viterbo	October 12, 2011	
228	herbaceous	Zucchini	Zucchino di Cerveteri tipo Romanesco	High	municipality of Cerveteri (Rome)	March 7, 2006	

APPENDIX 4

REGIONAL LAW NO. 15 OF MARCH 1, 2000
VOLUNTARY REGIONAL REGISTER - ANIMALS SECTION
LIST OF INDIGENOUS ANIMAL GENETIC RESOURCES ENTERED IN THE REGISTRY AS OF 2022

No	Common name of species	Genetic resource name (synonyms)	Risk category of genetic erosion, as of December 2020	Breeding area	Date of Entry in the Voluntary Regional Register	Date of Entry in the Voluntary Regional Register
1	Honeybee	Apis mellifera ligustica		Lazio	July 19, 2017	
2	Donkey	Amiata donkey	Damaged	Lazio	November 20, 2001	Registered in the Herdbook kept by A.N.A.R.E.I.A - National Association of Breeders of Italian Equine and Asinine Breeds (for the purpose of conservation of horse and asinine breeds of limited diffusion)
3	Donkey	Martina Franca donkey	Damaged	Lazio	November 20, 2001	Registered in the Herdbook kept by A.N.A.R.E.I.A - National Association of Breeders of Italian Equine and Asinine Breeds (for the purpose of the preservation of horse and asinine breeds of limited diffusion)
4	Donkey	Ragusano donkey	Damaged	Lazio	November 20, 2001	Registered in the Herdbook kept by A.N.A.R.E.I.A - National Association of Breeders of Italian Equine and Asinine Breeds (for the purpose of conservation of horse and asinine breeds of limited diffusion)
5	Donkey	Viterbese donkey / Allumiere donkey	Critical	Lazio	February 9, 2011	Registered in the Herdbook kept by A.N.A.R.E.I.A - National Association of Breeders of Italian Equine and Asinine Breeds (for the purpose of conservation of horse and asinine breeds of limited diffusion)
6	Bovine	Maremmana	Damaged	Lazio	November 20, 2001	Registered in the Herdbook kept by ANABIC - National Association of Italian Beef Cattle Breeders.
7	Goat	Bianca Monti-cellana	Damaged	Lazio	June 23, 2003	Registered in the Herdbook, kept by ASSO.NA.PA - National Association of Pastoralism.
8	Goat	Capestrina	Critical	Lazio	May 5, 2005	Registered in the Herdbook, kept by ASSO.NA.PA - National Association of Pastoralism.
9	Goat	Fulva Goat	Critical	Lazio	February 28, 2006	
10	Goat	Ciociara Grigia	Critical	Lazio	May 5, 2005	Registered in the Herdbook, kept by ASSO.NA.PA - National Association of Pastoralism.
11	Horse	Lipizzan	Damaged	Lazio	May 5, 2005	Registered in the Herdbook kept by A.N.A.R.E.I.A - National Association of Breeders of Italian Equine and Asinine Breeds
12	Horse	Maremmano Horse	Damaged	Lazio	November 20, 2001	Registered in the Herdbook kept by ANAM - National Association of Maremma Breeders Horse Breeders.
13	Horse	Roman horse of Maremma Laziale (part of Maremma located in Lazio)	Critical	Lazio	April 28, 2004	Registered in the Herdbook kept by A.N.A.R.E.I.A - National Association of Breeders of Italian Equine and Asinine Breeds (for the purpose of conservation of horse and asinine breeds of limited diffusion)
14	Horse	Italian Rapid Heavy Draft Horse	Vulnerable	Lazio	November 20, 2001	Registered in the Herdbook kept by ANACAITPR - National Association of Breeders Italian Rapid Heavy Draft Horse.

No	Common name of species	Genetic resource name (synonyms)	Risk category of genetic erosion, as of December 2020	Breeding area	Date of Entry in the Voluntary Regional Register	Date of Entry in the Voluntary Regional Register
15	Horse	Tolfetano	Damaged	Lazio	November 20, 2001	Registered in the Herdbook kept by A.N.A.R.E.I.A - National Association of Breeders of Italian Equine and Asinine Breeds (for the purpose of conservation of horse and asinine breeds of limited diffusion)
16	Horse	Esperia Pony	Damaged	Lazio	November 20, 2001	Registered in the Herdbook kept by A.N.A.R.E.I.A - National Association of Breeders of Italian Equine and Asinine Breeds (for the purpose of conservation of horse and asinine breeds of limited diffusion)
17	Rabbit	Leprino of Viterbo	Critical	Lazio	April 28, 2004	Registered in the Herdbook of the rabbit species, kept by ANCI - National Association of Italian Rabbit Breeders
18	Sheep	Quadricorn Sheep	Critical	Lazio	February 28, 2006	
19	Sheep	Sopravissana	Damaged	Lazio	November 20, 2001	Registered in the Herdbook, kept by ASSO.NA.PA –National Association of Pastoralism.
20	Chicken	Ancona	Critical	Lazio	June 23, 2003	Registered in the Herdbook of the rabbit species, kept by ANCI - National Association of Rabbit Breeders
21	Pig	Apulo - Calabrese (Black Domestic Pig from Apulia and Calabria)/ Black of the Lepini Mountains	Damaged	Lazio	February 28, 2006	Registered in the Herdbook of the Porcine Species, kept by NAS - National Association of Pigs Breeders.
22	Pig	Apulo - Calabrese/ Black of Rieti		Lazio	February 28, 2006	Registered in the Herdbook of the Porcine Species, kept by NAS - National Association of Pigs Breeders.
23	Pig	Casertana (of Caserta)	Damaged	Lazio	February 28, 2006	Registered in the Herdbook of the Porcine Species, kept by NAS - National Association of Pigs Breeders.
24	Pig	Cinta senese		Province of Viterbo	April 28, 2004	Registered in the Herdbook of the Porcine Species, kept by NAS - National Association of Pigs Breeders.