

Research Center for Plant Protection and Certification



CREA DC - Vercelli



Council for Research in Agriculture and Economics - CREA

CREA is the main Italian public research organization supervised by the Ministry of Agriculture (MIPAAF) dedicated to agro-food supply chains with scientific expertise covering agricultural, livestock, fish, forestry, agro-industrial, nutritional and socio-economic sectors.

The institute currently consists of 12 research centers located throughout Italy, with numerous sites, laboratories, experimental farms and over 2000 employees.

Each center specializes in its own area of expertise; the Plant Protection and Certification Research Center is the national reference for the protection of plants from harmful organisms and for seed certification, including descriptive and agronomic tests for the registration of new varieties in the National Register.

CREA DC – Research Center for Plant protection and Certification

CREA's Plant protection and Certification Research Center, in addition to its plant protection role, carries out tasks arising from EU and national regulations governing seed production and marketing.

A specific technical-administrative area dedicated to seeds, spread over 8 territorial offices (Milan, Tavazzano, Vercelli, Lonigo, Bologna, Rome, Battipaglia and Palermo) carries out the official certification and inspection activities for seed products, including the technological, phytosanitary and genetic analyses of seeds. In addition, on behalf of the MIPAAF and the Community Plant Variety Office (CPVO), it coordinates the examination tests for registration in the National Catalogue of plant varieties and for the recognition of the plant variety right of new varieties (community rights).

CREA DC, operating throughout the seed supply chain, ensures through its inspection and certification activities, the quality and traceability of seeds. Checks are carried out directly in the field to ascertain the identity and varietal purity level of seed crops; then, once the seed has been processed and packaged at seed companies, samples are taken for laboratory tests.

According to current seed legislation, seeds must be officially certified and belong to registered varieties in order to be marketed; only after the prescribed checks and verification of compliance with the minimum quality standards such as varietal and physical purity, phytosanitary status, foreign seed content and germinability an official label is issued, which, affixed to the seed packages, validates the certification and allows its sale.

The Vercelli Office

The Vercelli office conducts official seed certification activities and variety testing for new rice varieties registration. In addition, it is an entrusted examination office by the Community Plant Variety Office, collaborating with public and private entities and conducting research and knowledge dissemination.



The office is equipped with an analytical laboratory and climatic cells. In addition, it manages 10 hectares of paddies at Cascina Boraso in Vercelli, where experimental field trials and post-control of certified rice seed are conducted.

Seed certification

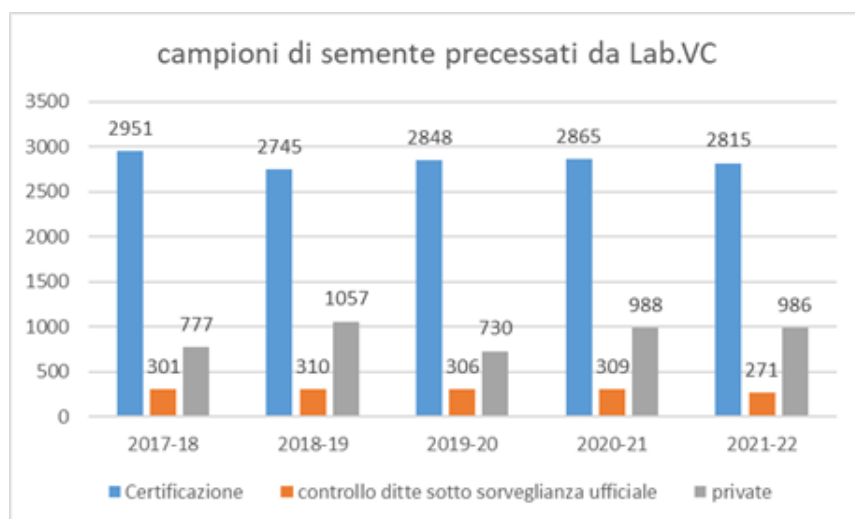
The Vercelli office is in charge of the official control of seed produced in Piedmont, Lombardy, Aosta Valley, Liguria, Sardinia and the province of Piacenza.

It runs approximately 2,500 field inspections annually, visiting 1,200 farms on a total of about 30,000 hectares. The main species are rice, soft and durum wheat, barley, triticale, corn, soybean, sunflower, alfalfa, hemp, beet, and spelt. The office oversees the seed plants of more than 90 seed companies by sampling more than 10,000 seed lots, equaling approximately 150,000 tons belonging to 30 different species.



Analytical Laboratory

Seed testing for official certification or surveillance of companies operating under official supervision and analyses by private request is carried out at the laboratory on various species like rice, durum wheat, common wheat, barley, oats, and triticale. In addition, analyses for the detection of *Aphelenchoides besseyi* nematode in rice seed using the ISTA 7-025 method (in part validate by the office) are also performed.



National variety registration and plant variety rights

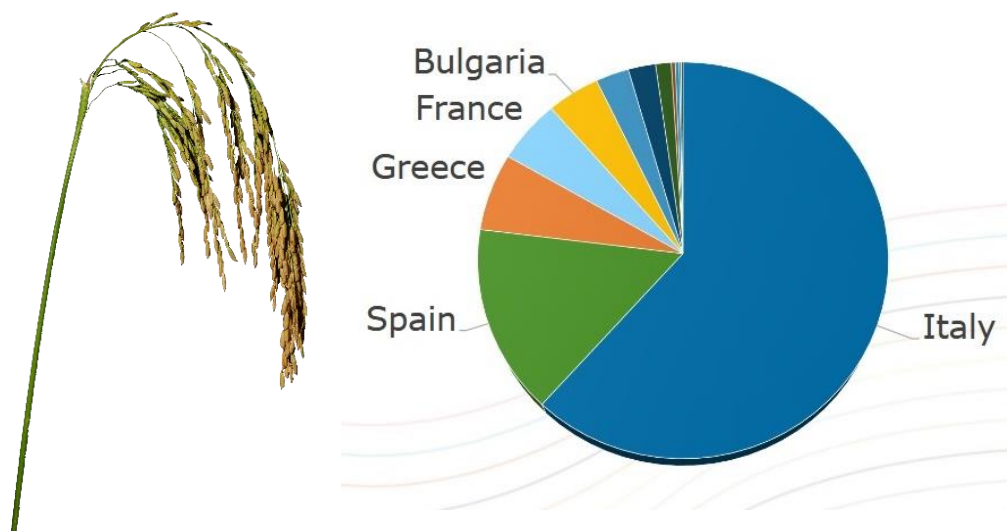
Since 1992, all the analyses and field tests required for new rice varieties to be enlisted in the National Register have been carried out, i.e. DUS (distinguishability, uniformity, and stability), VCU (value of cultivation use) and special tests for different types of resistance evaluation.

The office has also been entrusted as an examination office by the Community Plant Variety Office (CPVO) for granting rice plant variety rights since 1997.

Varietal collection

Since the 1990s, the office began collecting and preserving rice germplasm, mainly from all European growing areas. The germplasm collection now includes more than 700 varieties and is constantly updated with European varieties newly enlisted in the Common Catalogue or granted protection by plant variety rights.

It also comprehends varieties from Egypt, Turkey, the USA, China and Japan.



The collection is managed through a self-developed open-source dedicated software that stores and links the morpho-physiological description, biometric data, panicle and grain images, and seed sample location and inventory. In addition, the software allows tables of characteristics to be created and printed, can compare the phenotype of multiple varieties, and can search varieties by specific traits or by similarity with other varieties.



Collaborations

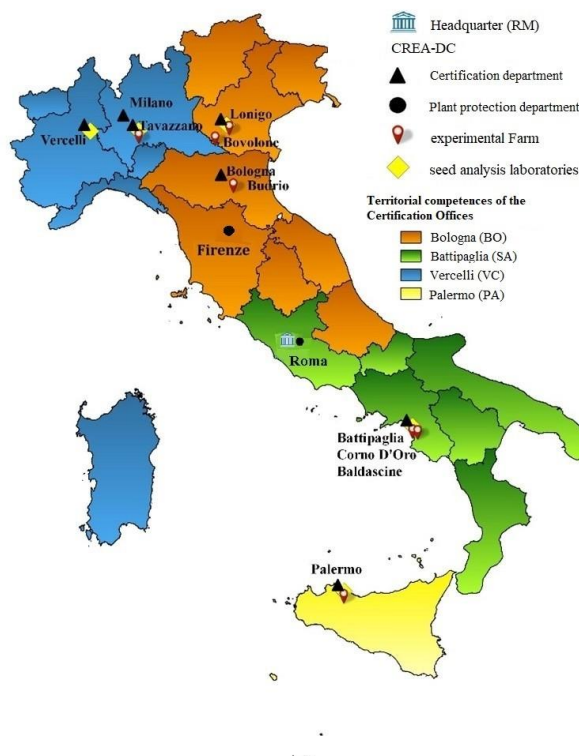
The Vercelli office cooperates with numerous public or private entities to develop innovative technologies or summarise research results. For example, with the "Ente Nazionale Risi" for the market classification of new varieties; with the Regional Phytosanitary Services for authorising operations of new seed companies and assessing the phytosanitary status of crops and seeds; with private entities for the development of new products and technologies.

Experimentation and dissemination



Experimental activities are carried out in the context of national and regional research projects and collaborations with private firms to evaluate plant protection products. In particular, these activities focus on the two primary rice diseases: rice blast and bakanae.

Dissemination of the results obtained from experimental activities is implemented annually through meetings with industry professionals and publications in national and international peer-reviewed journals. In addition, numerous books were dedicated to various aspects of rice cultivation, seed production and varietal choice.



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