

Ancient grains for new health products

Riferimenti

Tipo di progetto

Gruppo Operativo

Acronimo

GRADITI

Tematica

Prodotti di qualità

Information

Time frame

2019 - 2023

Durata

42 months

Partners (no.)

12

Regione

Campania

Comparto

Cerealicoltura

Localizzazione

ITF34 - Avellino

Costo totale

€329.989,88

Fonte di finanziamento principale

Programma di sviluppo rurale

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2014IT06RDRP019: Italy - Rural Development

Programme (Regional) - Campania

Parole chiave

Food quality / processing and nutrition

Sito web

<https://www.graditi.it/>

Project status

completed

**Objectives**

This project proposal has the final objective of identifying formulations of products with a high health value, based on the use of flour obtained from ancient grains, a precious biodiversity heritage to be preserved, appropriately selected. To achieve these objectives, cultivation protocols that may include the introduction of ancient grains and to promote rotations of ancient wheat-hemp-leguminous crops to evaluate the soil fertility level compared to a three-year monoculture period must be identified. The selected grains must be ground with large stone with an accurate control of the temperature of the flour in the milling phase, allow to keep intact the beneficial properties of the grain to obtain wholemeal flours, type 2 or type 1 with high nutritional value and above all they contain more dietary fiber which is of great importance in the prevention of certain types of cancer and neurovegetative diseases. GRADITI also wants to be a short supply chain project. By excluding the intermediate steps (wholesalers, retailers, etc.) the supply chain is shortened, the km traveled by the product decreases for the benefit of the environment and the manufacturer can sell his goods at a price that allows him to support himself. At the same time, the consumer supports the local economy by accessing an excellent quality food at a sustainable price. It will be the task of the public research bodies participating in the project to define the most suitable cultivation protocols, evaluate the functional properties, the bioagronomic, technological and biochemical characteristics of the selected grains, provide product formulations with the grains obtained with high health characteristics and evaluate them. the effects on consumer health. Finally, as a future fallout, the creation of the GRADITI brand will be assessed so that the companies that join can provide the consumer with products with high nutritional value.

Activities

The project activities are developed in 6 WP. In WP1, the farms involved will make available the implementation of the varieties identified, according to the methods suggested by Isafom. The latter will also be responsible for planning ancient grain-hemp-leguminous rotations in order to limit the loss

of soil fertility compared to a three-year monoculture. WP2 provides for the study of lactic acid bacteria and yeasts of ancient grains typical of the Irpinia area. It involves the involvement of ISA-CNR and primary producers. In WP3, microbial starters are set up to obtain new bakery products / bread from ancient grains and involves the involvement of ISA-CNR and processing companies. The WP plans to develop microbial starters for the production of new bakery products / bread from ancient grains of the Irpinia area through the use of the strains of lactic acid bacteria and yeasts selected in WP2. The starter cultures developed will be used in micro-bakery tests in order to select the ones with the best performances. The WP4 Development and optimization of new products from ancient grains and verification of the quality characteristics. In this WP, the use of four varieties of ancient grains (Risziola, Carosella, Cappelli, Saragolla) for the production of fresh pasta and craft beer is The project activities are developed in 6 WP. In WP1, the farms involved will make available the implementation of the varieties identified, according to the methods suggested by Isafom. The latter will also be responsible for planning ancient grain-hemp-leguminous rotations in order to limit the loss of soil fertility compared to a three-year monoculture. WP2 provides for the study of lactic acid bacteria and yeasts of ancient grains typical of the Irpinia area. It involves the involvement of ISA-CNR and primary producers. In WP3, microbial starters are set up to obtain new bakery products / bread from ancient grains and involves the involvement of ISA-CNR and processing companies. The WP plans to develop microbial starters for the production of new bakery products / bread from ancient grains of the Irpinia area through the use of the strains of lactic acid bacteria and yeasts selected in WP2. The starter cultures developed will be used in micro-bakery tests in order to select the ones with the best performances. In the WP4, the development and optimization of new products from ancient grains and verification of the quality characteristics is expected. This WP will take care the use of four varieties of ancient grains (Risziola, Carosella, Cappelli, Saragolla) for the production of fresh pasta and craft beer. The different varieties will be used in tests for the production of fresh pasta and artisan brewing in order to select the one capable of giving the finished product the best quality and sensorial characteristics. WP5 provides for the evaluation of the chemical-nutritional characteristics of raw materials and finished products which will be carried out following the recommendations of the world health organizations on the guidelines for proper nutrition. The WP6 that involves the Idis Foundation - City of Science, refers to the dissemination of the results Dissemination aims to enhance the project outputs and support the value of the innovation generated, also through the dissemination and affirmation of the "GRADITI" quality mark. It is an activity that works in synergy with the other WPs of the project and which is based on the realization of a plurality of actions, which involve the use of different channels and communication tools. . The different varieties will be used in tests for the production of fresh pasta and artisan brewing in order to select the one capable of giving the finished product the best quality and sensorial characteristics. WP5 provides for the evaluation of the chemical-nutritional characteristics of raw materials and finished products which will be carried out following the recommendations of the world health organizations on the guidelines for proper nutrition. The WP6 involving the Idis Foundation - City of Science, refers to the dissemination of the results Dissemination aims to

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Context

In the last years, farmers have come to the squares all over Italy to complain about grain prices and to block ships loaded with foreign grain. With a price of 18-20 euros per quintal, they can't even pay the expenses. There is a great responsibility for the processing companies, but also for the consumers themselves, who ignore the origin of the raw materials of spaghetti, pizza, croissants and other local delicacies. In Italy, imports of soft wheat amount to 75% of the total. The durum wheat ones, for the production of made in Italy pasta, are between 50% and 60%. At risk there are not only the production of wheat and the future of over three hundred thousand farms that grow it, but also an area of about 2 million hectares at risk of desertification. We must return to cultivating our wheat, to make quality, to make our made in Italy truly special and rich in values. But first of all we need to shorten the supply chain. Each of us should make sure that the bread comes 100% from its territory, this is a way to save the planet and our economy, even before made in Italy. The controls of healthy agriculture are fundamental in countries like Italy, in our plains, on the most remote areas of the Alps or of the Apennines. The work of recovery of the ancient varieties carried out by many small farmers in the most impervious areas, but also in the regions where the consumption of soil devours large slices of territory every year, is extraordinary. Ancient grains today are an excellent opportunity in many respects, including in terms of remuneration. The shortening of the supply chains, the proximity markets and the purchasing groups are fundamental in this process. Today we need farmers who cultivate, who repopulate the countryside, who manage to give us healthy products. Ancient grains are therefore a real treasure to be preserved and rediscovered: unlike the other types of wheat on the market, in fact, they do not undergo any alteration and remodeling by man, while keeping their authenticity intact. In addition, being less refined and less gluten-rich they contribute to reducing the onset and development of intolerances and to preventing the onset of tumor pathologies and the development of intolerances.

Partenariato

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Pratiche abstract

Description

The project provides for cooperation between farms, processing companies and research bodies with multidisciplinary expertise to increase the competitiveness of the cereal supply chain. With this in mind, "GRADITI" means to develop some proposal actions in accordance with socio-economic, cultural and environmental characteristics; hence the idea of programming a production line of products obtained from autochthonously identified varieties that are characteristic and enhance the territory. The main objective is the formulation of cereal-based products, therefore of large consumption, with characteristics aimed at respecting nutritional recommendations. The highly operational nature of the proposed approach and of the protocols that will be developed, provide for the immediate applicability of the tested innovations and also the articulation of the dissemination activities is oriented towards rapid diffusion among companies in the sector. The various actors in the supply chain, therefore, having ascertained the nutritional principles of the bakery products made following the study, research and experimentation phase carried out, will basically only have to decide whether or not to join the initiative and adopt the production specifications or sell the particular products. obtained, all at low or relatively low costs against the improvement of the competitiveness obtained and the creation of added value for the products. The shortening of the supply

chain should lower the cost / benefit ratio and therefore positive repercussions in terms of employment are expected which will give a great economic support to the local agricultural economy.

Results

From an economic point of view, the results of the research of the project will have positive economic repercussions on both the agricultural and industrial sectors. In fact, the enhancement of ancient grains already in the agricultural phase and thanks to the possibility of manipulation and transformation in the individual companies involved for the production of specialties, can allow an increase in company income. The effects on the territory are aimed at: - the strengthening of upstream and downstream production activities; - a greater link between basic producers and processing and marketing companies; - the strengthening of the link between the research institutes operating in the area and the economic and productive reality; - the qualitative improvement of the transformed production; - the strengthening of short supply chains. Ancient grains today are an excellent opportunity in many respects, also in terms of remuneration. The shortening of the supply chains, the proximity markets and the purchasing groups are fundamental in this process. Today we need farmers who cultivate, who repopulate the countryside, who manage to provide healthy products. From an environmental point of view, the adoption of ancient grains in crop systems has a transversal impact in safeguarding the environment and in contrasting climate change. The effects on the environment are certainly attributable to the fact that you do not need pesticides because they are resistant to phytopathogens. It is a crop that benefits from organic matter and reduces the use of chemical fertilizers that cause groundwater pollution. The absence of pesticides favors the protection of the microflora of the soil and fauna. With this proposal, which involves the involvement of different territorial actors, we want to make a contribution to the resolution of problems related to the safeguarding of agricultural biodiversity, to a sustainable use of the soil and a healthy diet, through the formulation of high quality products. Only by working closely with nature, by combining traditional cultivation practices with modern chemical protection techniques, it is possible to obtain sufficient production, safe food and respect for the ecosystem.

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- the qualitative improvement of the transformed production;
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Integrated management is a model of sustainable development to be pursued with a common effort of all stakeholders in the agricultural supply chain, focusing attention on training the professional user and on the use of good agricultural practices. The integrated production that is proposed in the project will be an agro-food production system that uses all

production methods and means of defense against the adversity of agricultural production, aimed at minimizing the use of synthetic chemicals and rationalizing fertilization, respecting the ecological, economic and toxicological principles. The possibility of reintroducing ancient grains in marginal or no longer cultivated areas can be a means of contrasting against the processes of desertification and climate change.

- Identification of agronomic performances in terms of yield of some ancient grains typical of the Irpinia area such as Risciola, Carosella, Senatore-Cappelli durum wheat lines
- Hectares of land in which to experiment with the use of three-year rotations in which the ancient wheat is grown in succession with a new crop such as hemp and with a legume to evaluate the effect of maintaining soil fertility compared to a three-year rotation of monoculture with cereals;
- Number of products / type made with ancient wheat flour mixed with complementary components from a nutritional and health point of view
- Number of companies participating in the short chain (divided between primary, processing and marketing companies)
- Quantity of products sold under the GRADITI brand
- Quantity of fertilizer deriving from agricultural and non-synthetic waste
- Level of reduction of emissions into the atmosphere with new bioeconomy techniques
- Hectares of marginal or no longer cultivated areas in which the cultivation of ancient grains is reintroduced as a means of contrasting against the processes of desertification and climate change.

Results

- Information about the varieties to be implemented using the most sustainable techniques
- Development of experimental protocols that take into account the type of soil of the company involved, its geographical position (height and exposure) and experimental plots to be defined according to the size of the companies involved between 1000 and 3000 square meters.
- Obtaining flours from ancient grains with varying degrees of reduction
- Definition of the lactic population and yeasts present in the ancient grains typical of the Irpinia area supplied by primary companies. Creation of a stock (set of lactic acid bacteria and yeasts) from ancient grains.
- Selection of yeast strains with proto-technological properties.
- Selection of starter cultures for bakery.
- Development on an industrial scale of breads obtained by fermentation with the selected starter cultures
- Development on an industrial scale of craft beer and fresh pasta obtained through the use of ancient grain varieties.
- Definition of technological conditions suitable for obtaining nutritionally valid products;
- Definition of the mixing ratios between the cereals identified and other ingredients according to the final product to be obtained;
- Formulation protocols for the recipes of the selected and approved products.
- Indications of the health aspects of the products made;
- Deposit of the GRADITI brand, distinctive of companies producing innovative products, linked to tradition, of excellent quality, at a sustainable price.

Link utili

Titolo/Descrizione	Url	Tipologia
Sito web GRADITI	https://www.graditi.it/	Sito web
Relazione scientifica del progetto	https://www.graditi.it/relazione-scientifica-graditi-febbraio-2024/	Materiali utili

