

Bio Vibrant – From ideal soil to nutrient density

Summary

The Bio Vibrant project is based on three challenging aspects of modern agriculture:

- Disassociation of food from the soil that produces it. The intensive land use policies implemented by the agri-food industry have added to generalised disregard for the structure and formulation of soil, ignoring the chemical, physical and biological elements of which it is composed.

- Soil impoverishment and imbalances. The excessive application of synthetic elements to increase short-term production, control diseases and unwanted populations, etc. has damaged soil's natural processes, caused mineral surpluses and deficiencies and limited the development of crops, intensifying the effects of diseases and the disappearance of biological control agents.

- Loss of nutrient density in foods. Continuous cultivation based on the provision of the main nutrients, relegating organic material and abusing synthetic products, has led to mineral exhaustion and consequently to a major decrease in the nutrient density of foods. Early studies like The Chemical Composition of Foods conducted by McCance and Widdowson for the Medical Research Council in 1940 (subsequently updated in several versions from 1946 to 1991) already reflected losses of minerals in fruit, vegetables and meat ranging from 10 to 76%.

Improving the availability of water, through treatment with FLUXXONE Magnetic, and the soil balance, by adopting the Ideal Soil guidelines, strengthens the quantity and quality of agricultural production.

The application of this method increases agricultural competitiveness, responsibly restoring impoverished soil and producing foods with high nutrient density: Bio Vibrant foods.

Objectives

- Recover the nutrient density of foods.
- Increase agricultural productivity.
- Extend shelf life by improving the preservation of fresh foods.
- Develop an efficient, technology-based, low-cost and cost-saving agroecological model.
- Improve water management.
- Reduce phytosanitary treatments.
- Determine the cooking methods that best preserve nutrients.
- Generate an efficient mountain agriculture model to act as a health and nutrition benchmark that is ethical, inclusive and environmentally excellent.
- Increase the availability of Bio Vibrant products.
- Facilitate the relationship between consumers and the farming industry in order to produce a social model that is modern, healthy and associated with the countryside.

Description of initiatives outlined in the project

A network of test and control plots will be created and analysed to determine the initial composition in accordance with the Ideal Soil method.

A Fluxxone Magnetic device will be installed in the water and the organic and mineral composition of the soil will be corrected based on the interpretation of the analyses undertaken in the test areas.

The products cultivated in the test and control plots will be subjected to analyses and comparative studies.

Food cooking and preservation processes will be studied to determine the best methods of transferring nutrient-dense foods to the end consumer.
The results and the methods of obtaining fresh and transformed Bio Vibrant foods will be disseminated.

Expected results and practical recommendations

The implementation and development of the project are mainly expected to validate and disseminate this innovation by demonstrating the improvement in nutrient density, in addition to the productive capacity and preservation of crops treated with the BIOVIBRANT system.

The expected results of the project are:

1. The creation of a network of productive plots in La Cerdanya.
2. The soil of the productive plots will generally improve, achieve the right balance and gradually recover its functionality.
3. The crops that have incorporated Bio Vibrant technology into their production system have not been affected by pests, their production levels have increased and analyses show that their nutrient density levels are higher than those of foods available in the market.
4. The organic farming industry expresses an interest in implementing this technology due to its benefits in the production phase (reduction of diseases, absence of treatments, more vitality in the crops, etc.) or in the sales and marketing phase, where more added value can be created for fresh produce and derivative products.
5. High-pressure processing achieves higher mineral, vitamin and organoleptic property preservation levels than those of conventional systems.

It should be taken into account that obtaining Bio Vibrant foods through Ideal Soil and FLUXXONE enrichment techniques requires the land to undergo a process of adaptation with respect to its soil and products. It is a work method that ensures the long-term preservation of soil for farmers interested in maintaining a good soil balance for optimal production. At least three years of work and preparation are considered necessary for soil recovery, following which work is required to maintain it in optimal condition.

Task force leader

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Typology of entity:

Task force coordinator

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Typology of entity:
Agricultural producers group or association

Subject area(s) of application

Agricultural production system
Farming/forestry competitiveness and diversification
Farming practice
Fertilisation and nutrients management
Food quality/processing and nutrition
Pest/disease control
Plant production and horticulture
Soil management/functionality
Water management

Geographical area(s) of application

Province(s)
Region(s)
Cerdanya

Dissemination of the project *(publications, conferences, multimedia...)*

Presentations and talks.

- Seminars, trade fairs and talks scheduled for specific groups (farmers, engineers, Plant Defence Group (ADV) technicians...) will be used for dissemination and digital support will be provided at major venues.

On the Internet.

- A corporate website will be built through SMART RURAL LAB SL, presenting information related to the project and its results.
- The FLUXXONE website (www.fluxxone.es) will dedicate a section to the results and processes of the project and its dissemination campaigns.
- The YouTube platform will be used to publish short videos with information about the various development, implementation and results phases of the project along with a brief pedagogical explanation.

Project website

www.fluxxone.es

More information on the project

Project dates

Budget approved

Starting date (month-year): June 2018
Completion date (month-year):
Current status: *Underway*

Total budget: €137,800.00
DARP funding: €56,316.00
EU funding: €42,484.00
Own funding: €39,000.00

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**Departament d'Agricultura,
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Order ARP/133/2017, of 21 June, approving the regulatory bases of grants for cooperation for innovation through the promotion of the creation of European Association for Innovation task forces in terms of agricultural productivity and sustainability and the execution of innovative pilot projects by these groups.

Resolution ARP/1868/2017, of 20 July, calling for applications for grants for the year 2017.

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