

Soil Amend

FFO®
(ORGANIC FOLIAR FERTILIZATION) Liquid Biological Amendment

The product FFO is a liquid biological amendment approved by Senasa and subjected to periodic process and quality controls by the Faculty of Biochemistry of Universidad Nacional del Litoral.

FFO came into the market as a novel product by mid 2005.

Since then, the number of producers that bet on this liquid biological amendment has been exponentially increased. Several tests and demonstrations have been carried out by various professionals and institutions that endorse the product and are at your disposal.

This product is innocuous (certified by UNL – Universidad Nacional del Litoral), 100% natural, produced from earthworm humus, and is approved by Food Safety certifier as a proper material for organic productions.

FFO is not a fertilizer because it does not carry macro-nutrients.

This amendment provides micro-nutrients (boron, zinc, copper, iron, molybdenum, manganese, etc.) and biological elements (fungi, bacteria and yeasts) that are beneficial for plants and favor the fertilization process.

Why to apply FFO ?

- 1) It improves yields.
- 2) It increases radical mass. It develops deeper roots.
- 3) It improves plant health and response against drought.
- 4) It reduces attacks from insects and fungi. (*Bacillus thuringiensis*)

Application

Product application is foliar.

Application time and doses vary according to the harvest.

FFO may be applied from a plane.

Application ways

5 liters of FFO diluted in 100 to 120 liters of water per hectare and per application, using traditional spouts.

The dose is suitable for alfalfa, soy, wheat, maize, sunflower and pastures (oats, *Bromus unioloides* (cebadilla), *Festuca*). It can be mixed with herbicides and/or insecticides, keeping pH value between 6,8 and 8,9. It is not necessary to add correctors.

FFO should not be mixed with fungicides.

Application should not be made in high sun exposure in order to allow for the whole strategic potential of the product.

FFO may be applied from a plane, without dilution, using 7 liters per hectare, per application.

Strong points

FFO contributes to more profitable harvests.

Even though each culture requires specific handling conditions, all plants benefit from this biological amendment that improves fertilization conditions. As a result, we can state that FFO is cost-effective above the soil: it noticeably enhances plant health.

Also, FFO promotes vigorous root growth because it improves soil conditions providing further oxygenation and more effective nourishing, thus reducing erosion effects.

Other available products act at no more than 15 cm down the surface and are bound to make roots grow in a horizontal fashion.

FFO generates a notorious growth from deeper roots, which improves the plant and further oxygenates soils even for future campaigns.

For that reason, we can also state that FFO is cost-effective under the soil.

FFO increases performance and quality; accelerates growth and completes the plants' lifecycles, including blooming and crop development. As a consequence, it shortens the period between sowing and harvest seasons.

Another decisive aspect is the fact that it improves soil-moisture relation, providing for a more efficient use of aquiferous resources.

Its systematic application reduces dependence from chemical fertilizers, thus cutting down production and logistics costs.

When to apply FFO ?

- Soya: at V5 and R3.
- Wheat: at tillering and on flag leaf.
- Maize: on the fourth pair of leaves and when female flowers start appearing.
- Sunflower: on the fourth pair of leaves and when the floret appears, or at the maximal height that allows moving through the plants with the machine.
- Alfalfas: the first application can be made at any moment. It should be repeated after each cut when it is 2 fists high (from 10 to 14 centimeters). From the fourth cut, the product should be applied every other pasturing. In case of pasturing, a first application should be made at any time when buds are one/two-fist high, and a second application after pasturing. Afterwards, two strategic applications should be carried out per year, in early autumn and spring.
- Pastures: (oats, barley, bromus unioloides (cebadilla) and ray grass), at tillering. The second application should be carried out on flag leaf and must be repeated at the first pasturing. Â

Dose

- Â Olive tree (15 liters per ha per application)
- Â Blueberry tree (7- 8 liters per ha per application)
- Â Apple tree and pear tree (15 liters per ha)
- Â Peach tree, plum tree and quince tree (18 liters per ha)
- Â Garlic and shallot (12 to 13 liters per ha)
- Â Onion (10 % of the water volume)
- Â Strawberry (8 liters per ha per application)
- Â Melon •Â Grapes (15 liters per ha per application)
- Â Aromatic plants
- Â Rosemary, thyme, sage, oregano, mint (6 liters per ha per application)
- Â Parsley, ciboulette, basil, coriander (5 liters per ha per application)
- Â Infusions
- Â Yerba mate and tea (15 liters per ha per application)
- Â Beans, chickpea, lentils, peas (9 liters per ha per application)

Please, consult us about other cultures, and we'll develop a plan of usage for you.

Tips for an efficient use of FFO

Physical and chemical conditions (potential chemical fertility) of the plot of land must be taken into account.

A chemical analysis of soil is recommended to assess the results obtained from fertilization with FFO .

Weather conditions must be also taken into account when applying the product: it should not be applied in high sun exposure or windy conditions.

Physiological conditions of the culture must be also considered (harvest period) and recommended application times should be observed. FFO must not be mixed with fungicides in the applying machine.

FFO must be diluted in 100 – 120 liters of water for its subsequent application with pulverization equipment.

FFO should not be used with high pH waters (6 - 8,9).

FFO will improve pasturelands fertility conditions, but will not substitute chemical fertilizers.

FFO will improve potential fertility.

If the plot of land is completely unfertile because it has been overexploited, the product will not reach its optimal performance.

Micro organism identified

Bacterias

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Micrococcus luteus

Bacillus thuringiensis

B.Pumilus

B.Subtilis

B.Sphaericus

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Streptomyces chromofuscus

S.diastaticus
Streptomyces sp.

Pseudomonas
aeruginosa
P.putida
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Stentrophomonas maltophilia

Acinetobacter baumannii Flavobacterium sp.

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Fungus

Alternaria Alternata
Scytalidium lignicola
Mucor circinelloides
Penicillium Variable

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