

## TRAINING MATERIAL

Title:

Compost from green waste and digested mixed-waste by "ACEA Pinerolese" process (ID:210)

Training:

### **What is the product?**

Florawiva® compost is a high quality compost resulting from the natural biological transformation of biowaste. It is a high quality soil amendment, helping to return organic matter to the soil.

### **Who is the vendor of the product?**

The vendor of the technology is ACEA PINEROLESE, based in Pinerolo (TO), Italy. The ACEA PINEROLESE company currently manages not only the entire cycle of waste collection serving 47 Municipalities of the Province of Turin, in Italy, but also the treatment of organic waste, serving roughly 1 million inhabitants.

### **Which other product/technologies are provided by the vendor?**

As far as the waste sector is concerned, the company's services, include the collection of municipal solid waste, separate collection, waste disposal, public hygiene, organic waste treatment.

### **Which are the advantages of the products and the problems addressed?**

Main characteristics:

- it is a concentrated mixed composted soil amendment, which can be replaced with normal fertilizers;
- it is suitable for ornamental plants and vegetable gardens, in fruit growing, nursery gardening and also in the open field;
- it improves the chemical-physical structure of the soil (with organic matter supply);
- it performs a protective action against numerous harmful organisms for crops;
- improves soil biodiversity by increasing microbiological fauna & flora;
- it allows slow release of nutrients;
- it increases cation exchange capacity of soil;
- it reduces leaching;
- it increases water retention capacity and, thereby, decrease vulnerability to erosion and desiccation (droughts).

**Which is the nutrient content of the product?**

Florawiva has the following nutrient content N-P-K: 2,4% N (DM), 2,3% P<sub>2</sub>O<sub>5</sub> (DM), 1,3% K<sub>2</sub>O (DM).

**Which equipment and methods can be used to apply the product?**

The equipments currently on the market are compost spreaders that are able to avoid flooding, ensure emptying of the container and improve uniformity of distribution while maintaining high work capacity. Traditional machines for the distribution of solid fertilizers do not easily adapt to the distribution of compost, which has a particular physical nature, represented by a fibrous-powdery structure. The most suitable mechanical means, on the other hand, are those that can be assimilated or derived from the classic manure spreaders, consisting of a movable-bottomed box to facilitate the conveyance of the soil conditioner to the distributing device and characterized by a considerable load capacity. For optimal distribution of the composted soil conditioner, it is desirable that the product has a humidity of 30-50% (to avoid excessive dustiness); in addition, the material must be as homogeneous as possible. In open field crops, the compost is first distributed on the surface by using a manure spreader and then buried with the mechanical processes that affect a 20-40 cm layer of soil (plowing, digging, milling). It is possible to locate the distribution of compost along the rows of plants even without burial, if the intent is to carry out mulching. For a correct storage of the product and for a better management of it, it is advisable to follow some general indications. If kept in good storage conditions, the product maintains its chemical-physical characteristics almost unchanged. Instead, it will lose nutrients, but will keep the properties of improving the physical characteristics of the soil. The compost must be promptly buried after application in order to avoid oxidation of the organic substance contained in it. If not buried in the ground, Florawiva is an effective mulch for the control of weeds and for the maintenance of soil moisture. The compost is free of weed seeds, but if left out in the open it can favor the germination of seeds that are brought in by natural ways. Florawiva has a high pH and therefore its use for acidophilic crops (blueberry, raspberry, etc...) should be avoided. The product cannot be used in purity except for mulching. In all other cases, it must always be mixed with the soil.

**How to use the product?**

Florawiva is the stable, sanitized and humus-rich end-product of the composting of pre-digested selectively retrieved organic waste streams. It is a secondary raw material containing the stable organic material, called humus, and the inorganic mineral fraction (i.e. of the waste the composting process started with). The high temperature achieved during the process implies that compost is free of pathogens, insect larvae and weed seeds. This property ensures that the use of pesticides and herbicides on compost-enriched soil will be limited compared to not treated soil. The amount of humus and the cation exchange capacity of the material are also improved. The formation of humic acids from microbial degradation also provides suitable properties for use of compost as a soil improver. Florawiva could be used as a soil improver in horticulture and agriculture, regenerating a soil that is exhausted in organic matter and nutrients. Therefore, in addition to significant concentration of nitrogen, phosphorus, potassium, calcium and magnesium, compost contains a lot of organic matter. The nutrients of compost are structured in an organic matrix and are slowly released. Florawiva is a multi-nutrient soil improver with a slow fertilization effect. This property helps to prevent the leaching of nutrients through sudden abundance. This compost is also a high carbon soil improver. The compost supports soil fertility and releases its nutrients slowly, reducing risks of leaching of mineral fertilizers. It is a stabilized product implying that, once applied, no temporary decrease of N-levels occur.

It follows a short guide to the use of Florawiva compost.

#### CEREALICULTURE, HORTICULTURE, FRUIT ORCHARDS

Compost, buried in the open field before sowing or transplanting, has been shown to improve production and quality. The recommended dosages are: 20t/ha with 0.4-0.5t/ha of K sulfate before sowing/transplanting in horticulture. As far as cerealiculture is concerned, it is recommended to distribute 20t/ha of Florawiva combined with 0.2t/ha of potash.

In fruit orchards, it is recommended to apply 35t/ha before planting the orchard: 85-90% before plowing and 10-15 before refining the soil.

#### FERTILIZATION OF ORNAMENTAL LAWN

The recommended dosages are: 20t/ha with 0.4-0.5t/ha of K sulfate before sowing/transplanting before plowing.

#### POTS CULTIVATIONS

It is recommended to mix 30-50% of Florawiva and 50-70% of peat before seeding/transplanting.

#### **Which are the authority permits and in which EU countries?**

ACEA is registered to "Registro Fabbricanti" n°00218/07 for the fertilizer market, and it is authorized to sell 5 conventional products ("Registro uso convenzionale") and one organic product ("Registro uso biologico"), according to the national legislation (D.Lgs. 75/2010).

Florawiva® is a certified quality product by the CIC (Italian Compost Consortium).

#### **How much does it cost?**

Acea Pinerolese's compost is sold around 10-20€/t depending on required volume and packaging. It is sold in 25kg bags, 600kg BigBags and bulk.





For more information: [https://nutriman.net/farmer-platform/product/id\\_210](https://nutriman.net/farmer-platform/product/id_210)