

**ERGOFITO IN ACTION**

Give Nature What Nature Wants

## Apple Scab Control

*Venturia Inequalis*



ERGOFITO

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## **Life Circle and Epidemiology of Venturia Inaequalis (Apple Scab).**

The effective cycle starts in springs, when temperature and humidity conditions favor the release of Ascospores and Conidia. The ascospores and conidia's germination occurs due to the presence of a thin water layer on the surface of the effected part of the plant. From the conidial or ascosporic's primary infection, new ascospores and conidia will be formed which will constitute the inoculum for secondary infections.

The infection will proceed in the fallen leaves, which guarantee the inoculum preservation during winter. In spring when ambient temperature reaches around 20°C with sufficient humidity, optimal conditions are present for final maturation of the ascocarps and the release of ascospores. The inoculum is able to preserve as mycelium in the tissue lesions of branches and trunk. However in this case there is no sexual reproduction, but it will produce infective conidia in springs.

### **Chemical Treatment:**

Chemical treatment against apple scab is generally very expensive and often detrimental to the environment and humans. It is applied 15 to 20 times a year.

Following the Mills table, applications are done in sequence with rains at the time and conditions favorable for the propagation of apple scab.

### **Main chemical products used to combat apple scab:**

- Mancozeb
- Copper (Cu)
- Strobiluren
- Sterol Biosynthesis Inhibitors
- Triazole

### **Ergofito Treatment, The Biological Natural Solition:**

#### **How does Ergofito help the plants combat plant sicknesses?**

The multiplication of the beneficial bacteria acts in an antagonistic and repressive way towards the phytopathogenic micro-organisms, particularly present in soils lacking humus. The mechanism of this antagonistic/repressive action towards the phytopathogenic micro-organisms can be summarized as follows:

### **1: Micro parasitism:**

Occurs when the lyses of the cell of fungi and pathogen mildew or nematodes through enzymatic activity are attacked.

### **2: Soil sanitation:**

Occurs with the entry of toxic metabolites for the pathogen micro-organisms, such as phenols, tannins, chlorogenic acid and auxins (biochemical resistance)

### **3: Food competition:**

This action takes place by the new micro-organisms devouring the existing food source present in the soil thus starving the pathogens.

### **4: Strengthening of the threshold resistance:**

Promote the structural thickening of the tissues of the epicuticular layers of protection of the leaves and roots that impede penetration into the plant.

### **The mechanism:**

The stimulation of the bacterial activity allows the beneficial (**Ergofito**) micro-organisms to occupy spaces in the plant and the surrounding soil in a complex series of physical, chemical and biological reactions that act against the agent that cause plant diseases.

- Reduction of the spaces, which are normally occupied by pathogens
- Creation of biological antagonistic control of pathogens
- Accentuation in the reaction of the plant's immune system
- Stimulation of the production Phytoalexin

### **Ergofito Action in Preventative and Curative Situations:**

- More efficient defense against parasitic insects due to the plant strengthening
- Fungal preventive action to confront the infections due to Mycogone and Verticillium
- Rot control in seedbeds caused by Pythium & Phytophthora.
- Basal rot control of vegetable crops, agricultural and ornamental due to Phycomycete and Rizoctomia, Sclerotium, Sclerotinia, Botrytis etc.
- Reduction in the incidence of vascular diseases responsible for the withering caused by Fusarium and Verticillum.

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- Preventive and curative action in the arboreal cultures (orchards, urban greenery, citrus etc.) as well as forestal fragrances towards the responsible agents for branch cancer (Nectria, Cytospora, Phopsis etc.). Also towards radical attacks due to Basidiomycetes (Armillaria, Fomes, Stereum, etc.) It will also protect leaves cuts from been penetrated by pathogenic fungi.

### **Ergofito Action:**

Prior applying harmful chemicals to the orchards, it is imperative to structure an effective preventive strategy that will limit the pathogenic attack. In this regard the following is recommended:

1. Remove as much fallen foliage below the tree canopy as possible before spring.
2. Prune the canopy to allow for good aeration and lower the humidity retention.
3. Apply the below protocol:

| Bio Agent            | Quantity          | When                  |
|----------------------|-------------------|-----------------------|
| <b>Ergostart Bio</b> | 150Kg per Hectare | After the Leaves Fall |

*The above will accelerate the leaves decomposition, thus reducing or eliminating their infection ability.*

4. Apply the below protocol:

| Bio Agent                | Quantity        | When                          |
|--------------------------|-----------------|-------------------------------|
| <b>Ergostart Defence</b> | 6Kg per Hectare | After the Leaves Fall         |
| <b>Ergofito Cu/Zn</b>    | 6Kg per Hectare | After the Leaves Fall         |
| <b>Ergofito Defense</b>  | 6Kg per Hectare | One Week After the Above      |
| <b>Ergofito Cu/Zn</b>    | 6Kg per Hectare | At the Same Time as the Above |

*The above is applied to the trunk and branches ensuring that both are well wetted. This will eliminate the spores that are present in the bark and lesions.*

Please refer to Ergofito Fruit trees protocol for the correct fertilisation allowing the tree to build its own natural defense against all attacks.



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