Between 2004 and 2009, Thatchtec has developed, in cooperation with the Wageningen University and Research Centre, a new method for (biological) soil disinfection. This method uses 100% plant-based Herbie granulates (or liquids) which are put in the soil, followed by covering the soil with a plastic foil during 3-4 weeks. Many experiments, both in the laboratory and in practice, have shown that after this period the soil is, in most cases, free from problematic diseases caused by pathogenic nematodes and fungi. The system has been applied in practice for tomatoes, bell peppers, seed production, lettuce, summer flowers, strawberries, and asparagus. Soil Resetting can be used in greenhouses and outside. Thatchtec has applied for three patents on Soil Resetting, of which the first has been granted. Since its introduction in 2009, more than 25 growers have used Soil Resetting.

1 Soil Resetting is a major improvement compared to the existing approach for biological soil disinfection, which is based on using fresh cut grass. Advantages compared to grass are that the Herbie granulates are available all year, are constant in composition, more compact, and leading to a faster and more effective killing of soil pathogens.

2 such as the nematodes Pratylenchus penetrans en Meloidogyne chitwoodi, -hapla en -incognita and the fungi Fusarium oxysporum en Verticillium dahliae.

**WHAT IS SOIL RESETTING?**

**WHAT ARE THE ADVANTAGES?**

**ENVIRONMENTALLY FRIENDLY**

Chemical biocides are problematic for the environment, and steaming requires large amounts of energy. Soil Resetting does not have these disadvantages!

**VERY EFFECTIVE**

Chemical biocides often do not give 100% killing of soil pathogens. Steaming of the soil often leads to a quick return of the diseases. Soil Resetting gives in most cases 100% killing of pathogens and leaves behind a healthy soil which is expected to remain more resistant against diseases for several years.

**EASY TO APPLY**

Applying Herbie and covering the soil with a plastic foil does not require special equipment and can be performed by most contractors. Planting is possible directly after treatment.

**POSITIVE EFFECT ON THE SOIL**

When chemicals or steaming are used, the biological balance in the soil is disturbed. Moreover, steaming often impairs the soil structure. Soil Resetting, in contrast, adds useful organic materials and life (bacteria and non-pathogenic fungi and nematodes) to the soil.

**EXTRA CROP YIELD.**

Besides preventing crops losses due to diseases, there is often up to 30% extra crop yield.

**FUTURE ORIENTED**

Chemical disinfection is under increasing international pressure and steaming gets more and more expensive. Soil Resetting (at the moment comparable in costs with steaming) will therefore become increasingly more attractive.
WHY DOES IT WORK?

Herbie’s are high in protein content and degrade quickly in the soil. During break down, oxygen is consumed. Due to the presence of the plastic foil, this leads to low oxygen levels (<0.5%) within 1 day. During the further break down under anaerobic conditions, a variety of fermentation products (fatty acids, methane, hydrogen sulfide, etc.) are released. Soil pathogens are very sensitive to these compounds.

Based on >5 years of research, using hundreds of different mixtures of organic materials, it has become clear which composition Herbie needs to have (with respect to proteins, carbohydrates, fats, fibres, etc.) in order to break down quickly and completely, and take care of a good killing of the pathogens.

HOW TO APPLY?

MATERIALS

Herbie granulates (or liquids) and plastic foil are needed. Thatchtec can supply three different types of Herbie granulates and one type of liquid Herbie. All of them are 100% plant based (potato, wheat, soy, and/or corn) and most of them are guaranteed GMO-free. There are differences with respect to the contents of nutrients such as potassium and phosphate. The optimal choice depends mostly on the importance of using GMO-free materials and the desire to add certain nutrients to the soil. Suitable plastic foils are foils with a high oxygen barrier, such as VIF-foils and PA-2 foils.

APPLYING HERBIE AND COVERING THE SOIL

A lime spreader can be used to pour out the Herbie granulates, and a spading device to mix the Herbie through the top layer (typically 30 cm) of the soil. The soil coverage with the foil needs to be air tight.

ADVICE

Thatchtec can advice on the choice of Herbie, the amount, the application depth, the choice of contractor, optimal moisture levels of the soil, etc.

COSTS

Soil Resetting costs in total approximately 2,- Euro/m², of which 1.50 Euro/m² is for the Herbie materials. Above 3 ha the costs are lower.