



ESST – INSPIRE - SEED STARTER

The history of seed treatment goes back over 300 years. In 1670 a ship carrying wheat grain went down off the coast of England near the city of Bristol. Evidently, the ship was close enough to shore that nearby farmers were able to retrieve some of the grain. Having been soaked in sea water, the grain was not fit for processing into flour, but some farmers planted it. The crop that resulted was remarkably free of smut, whereas most of the fields planted with grain that had not been soaked in seawater showed heavy smut infestation.

Over the next 100 years, various people tried treating wheat seed with salt, lye, urine, etc. to see if they could reduce the amount of smut that developed. Use of a salt/brine mixture was known in various parts of Europe. The French botanist Tillet published an article on this in 1770 indicating that treating seed with such materials would reduce the amount of smut. In 1807, the Swiss scientist Prevost showed that treating smut spores with a liquid solution of copper sulphate inhibited their germination. Over the next 100 years, recommendations were issued to treat wheat seed with copper sulphate to reduce the infection with common bunt. However, this compound is a general biocide and, as a result, it reduced germination. In 1895, the use of formaldehyde was suggested by the Germans. It gained in popularity due to its effectiveness and low cost but was unsafe for the seed and the person treating it.

Typically, chemical seed treatments are fungicides or insecticides, applied to seed, to control diseases of seeds and seedlings; insecticides are used to control insect pests. Some seed treatment products are sold as combinations of fungicide and insecticide.

Fungicidal seed treatments are used for three reasons:

1. to control soil-borne fungal disease organisms (pathogens) that cause seed rots, damping-off, seedling blights and root rot
2. to control fungal pathogens that are surface-borne on the seed, such as those that cause covered smuts of barley and oats, bunt of wheat, black point of cereal grains, and seed-borne safflower rust
3. to control internally seed-borne fungal pathogens such as the loose smut fungi of cereals

Typically, chemical seed treatments DO NOT offer benefits associated with root development, drought proofing or crop yield.

WHY IS ESST DIFFERENT?

ESST does NOT contain fungicides or insecticides. **ESST** is a liquid biological seed treatment and root growth promoter formulated to improve seed germination, emergence, root mass, vigour, uniformity and yield. **ESST** constituents include, but are not limited to, macro and micro nutrients, amino acids, organic acids, root growth stimulants, enzymes, proteins, complex carbohydrates, vitamins minerals and beneficial microbes. **ESST** also contains constituents that stimulate indigenous microbes in the root zone. **ESST** has proven to be a reliable performer in low and high rainfall areas and in all soil types except extreme calcareous soils.

Earthsmart - Sept. 2008
N reduced 50% from 2007
ESST seed treatment at seeding
Foliar nutrients + herbicide at 3 leaf



Earthsmart - July 10, 2008
N reduced 50% from 2007
ESST - Seed treatment at seeding
ESCF - Cereal's fertilizer + herbicide at 3 leaf

