

Corn Fallow Syndrome: What Is It and What Can Be Done?

What is Corn Fallow Syndrome (CFS)?

Corn Fallow Syndrome, also known as Post Flooded Corn Syndrome, is a malady that effects crop nutrition and growth in fields that have been flooded for an extended period and then let fallow. The most common observation of crops suffering from CFS are phosphorus and zinc deficiencies leading to severe stunting, purple leaf discoloration and poorly developed roots. Yield losses can be significant, particularly in corn.



Fallow syndrome symptoms in corn (D. Eisinger Image).

What Causes Corn Fallow Syndrome?

Under normal conditions corn forms a symbiotic relationship with a group of beneficial fungi called mycorrhizae. Mycorrhizae fungi infect roots and aid the plant by foraging for soil nutrients, particularly phosphorus and zinc, and in return the plants provide carbon from photosynthesis that is an energy source for the fungi. In flooded and fallowed fields the population of mycorrhizae can be greatly depressed leading to poor infection of corn roots and development of phosphorus and zinc deficiencies. Symptoms may persist the entire season and yield are almost always depressed. Crops that are noted for their dependency on mycorrhizae include corn, onion, strawberry and tree crops.

What Options Do Growers Have to Combat CFS?

There are three basic approaches to addressing CFS:

1

Cover crops. Research has shown that fields planted to a cover crop can aid in repopulation of mycorrhizal fungi. Planting is best done early to allow for infection and fungal population growth. Brassicas should not be selected as they are extremely weak hosts for mycorrhizae.

2

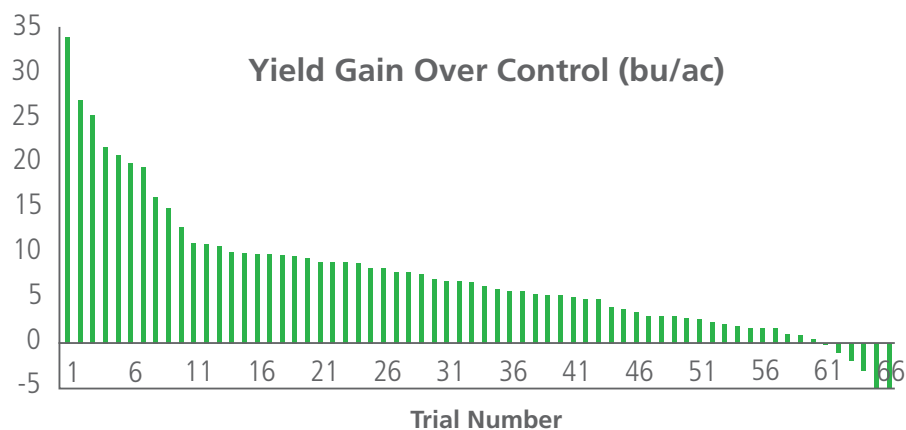
Reinoculate with mycorrhizae. There are commercial preparations of mycorrhizae but they are limited in availability and difficult to apply. Most consider this to be an impractical solution.

3

Band with a high quality starter fertilizer. Starter fertilizers, properly selected for a high ortho P content for immediate availability and properly placed can provide relief from CFS. The addition of a high quality chelated zinc source would also be advisable. Placement in-furrow for enhanced P and Zn uptake as early as possible in the growth cycle of corn is also advised.

NUTRIO® POWERSHIFT® with NUTRIO UNLOCK® Plant Growth Promoting Rhizobacteria

- 80% orthophosphate content for maximum early season availability when soils are cool
- 0.46% fully EDTA Chelated Zinc for maximum availability and avoids soil tie-up
- Contains 7 strains of plant growth promoting rhizobacteria to promote early root and plant growth and aid in nutrient availability and uptake
- Apply in-furrow at a rate of 5 gallons per acre (12.25 lb P_2O_5 , 0.25 lb chelated zinc and 1 quart per acre NUTRIO UNLOCK)
- NUTRIO In-furrow data
- 66 test sites, 91% win rate, average yield gain of 8 bu per acre



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