

AGRICULTURAL BEET

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Foresight is 2020

Implications of 2019 flooded fields and Prevent Plant acres on 2020 crop fertility strategies: Years like 2019 are not only challenging to endure, they also create ripple effects into the following season. Sugar beet producers are well aware of the implications of growing crops into fallow syndrome since sugarbeet are non-mycorrhizal hosts. However, in preparing crop plans for 2020 we might also consider that fields that remained saturated in 2019 were not conducive for mycorrhizal colonization and may have the potential to exhibit fallow syndrome-like symptoms as well. Below is a portion of a recent article from Dr. Kaiser in the MN Crop News.

A selected excerpt from a Minnesota Crop News by Dr. Dan Kaiser, Extension Soil Fertility Specialist. Prevented planting situations in parts of Minnesota have led to some questions about potential changes to fertilizer applications. Crediting fertilizer applied prior to the 2019 crop in prevented planting situations depends on the nutrients. Mobile nutrients such as nitrate and sulfate which were applied fall 2018 may not be there and may have been used by weeds or cover crops growing in fields this summer.

Crediting of phosphorus and potassium applied in fall 2018 can be done in prevented planting situations as long as plant material was not removed from the field. Phosphorus and potassium are held in soils and will be available for the following crop. If phosphorus and potassium were not applied prior to the 2019 crop, it is not advisable to apply extra fertilizer for the 2020 crop. Soil testing fields which are fallowed can help determine how much fertilizer should be applied. If fertilizer was applied in fall 2018 prior to prevented planting and soils test medium to low in P, it is still advisable to apply a low rate of P as a starter if corn will be grown in 2020.

Fallow Syndrome

Fallow Syndrome can occur in situations where fields are left fallow or in situations where crops which are non-mycorrhizal hosts are grown. Vesicular Arbuscular Mycorrhizal (VAM) colonize corn roots and help with uptake of phosphorus. Non-host crops such as brassica species and forage radishes can reduce VAM colonization on corn roots and plants can look purple early in the growing season due to reduced uptake of phosphorus.

Fallow Syndrome considerations (or areas that may exhibit fallow symptoms due to prolonged saturation).

- 1. Just because you are in a situation where Fallow Syndrome may occur does not mean it will. It is less likely that Fallow Syndrome will occur when (small grain cover crops of oat, wheat, or rye or) weeds have been growing in fields.*
- 2. Fallow Syndrome is correctible by banding phosphorus and cannot be corrected by broadcasting additional P. A rate of 40 lbs. P₂O₅ banded near the row is advisable to help correct Fallow Syndrome, which is more than should be applied directly on the seed.*
- 3. It is not likely that any fertilizer applied once symptoms are present in corn, will help correct the problem. Monitor fields and hopefully fields will improve over time.*