IOWA STATE UNIVERSITY
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Crop Connections

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Soybean Pest Field Guide
Soybean Aphid Field Guide
SCN Field Guide

It's Time to Start Thinking About Fertilizing Pastures

The question has been coming in regarding the cost of fertilizer and the return productivity for pastures. Higher nitrogen, phosphorus and potassium prices are making people think twice about pasture fertilization. Spring fertilizer applications will not be warranted if spring production is not being managed. After all, what is the need for more production if the existing production is not being utilized.

However, if more production is needed due to more intensive use then nutrient applications can be valuable for increasing productivity. As little as 40 to 50 pounds of nitrogen per acre can boost pasture production by 0.5 to 1 ton per acre. The timing of nitrogen applications can promote productivity when it is needed rather than during the 'spring flush'. Consider a split application in late spring and late summer. A modest rate in late May can lead to a shift of more production going into the summer months. A second modest application in August will usually boost production going into the fall.

Another factor that can limit productivity response from nitrogen is soil test values for phosphorus and potassium. Low and very low testing soils may benefit from phosphorus and potassium applications while generating additional responses to nitrogen applications. Having said that, yield response to applications of phosphorus and potassium are not dramatic or consistent. Grasses will respond to phosphorus and potassium when applied to low or very low testing soils but responses quickly diminishes in the optimum, high or very high soil tests categories.

A good references for pasture fertilization is; Boosting Pasture Production, IBC07-11.

Factors for Impressive Soybean Yields

1. Building capacity for yield by increasing photosynthesis
2. More pods equals more seeds, find ways to reduce pod abortion
3. Healthy roots are critical for healthy yields
4. Variety selection, variety selection, variety selection

More light interception results in more biomass. More biomass at harvest results in more yield. The earlier soybeans get planted, the more time there is from emergence to flowering. This results in more plant biomass.

Soybean yield variation comes from stresses during the seed fill period. Reducing stresses and feeding the plant are critical to encourage rapid biomass production, reduced pod abortion and reduced stress during seed fill. To do this two things must happen; 1) maximize photosynthesis and 2) maintain healthy roots.

Achieve canopy closure quickly and reduce plant stresses during flowering to maximize photosynthesis. This can be achieved by planting earlier and by making sure pesticide applications are done by flowering, whenever possible.

Healthy roots equal healthy yields. Make sure nematodes and other soil born diseases don't compromise root health. Make sure field conditions prior to planting are ideal resulting in minimal sidewall compaction and risk of the seed furrow re-opening. Don't get too anxious for spring field work, either. Ideal conditions for all spring field work reduces root impediment from shallow soil compaction.