

Starter Fertilizer



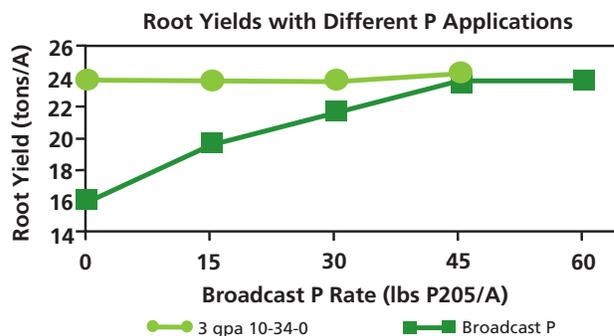
Starter Fertilizer (Banded Phosphorus) Leads the Way in Promoting Emergence and Early Plant Growth

The dual advantage of Banded Phosphorus is increased revenue per acre and lower fertilizer costs.

The use of starter fertilizer is an effective way to apply Phosphorus fertilizer to the sugarbeet crop. The starter fertilizer is applied directly over the seed and promotes growth in the germinating plant. Phosphorus movement typically occurs from the source (fertilizer granule of soil P) into the sugarbeet root by diffusion. Some factors reducing diffusion rate of Phosphorus to the root are dry soil conditions or cold temperatures. Some factors increasing the diffusion rate of Phosphorus to the root are warmer soil temperatures and/or an increase in the P concentration. Banding applies a small amount of Phosphorus compared to the full broadcast rate, but the Phosphorus is concentrated in a smaller volume of soil near the root of the crop. Effectively, this increases the concentration of Phosphorus and thus the rate of diffusion of Phosphorus to the root. This is why banding Phosphorus fertilizer is effective in increasing plant growth in years with cold soil conditions at planting.

Research conducted at NWROC by Dr. Al Sims and Dr. Larry Smith in 1999-2003

- 3 gallons of 10-34-0/acre applied in-furrow gave maximum root yields.
 - Additional broadcast Phosphorus was not needed
- 45 to 60 lbs/acre of 18-46-0 were required to maximize yields
- Research conducted on both low and high Phosphorus testing soils



American Crystal Sugar Company Grower Practice Data

from years 2000 to 2004 indicates the fields that utilized starter fertilizer had \$9/acre higher revenue per acre. In addition to the increased revenue was the potential cost savings of \$7.25/acre from utilizing 3 gal of 10-34-0 vs. 100# 18-46-0. Total potential benefit is \$16.25/acre.

Revenue Per Acre by Banded Phosphorus 5 Year Summary (2000-2004)



YOUR WAY TO GROW

Fertility | Variety Selection | Stand Establishment | Weed Control | Disease and Insect Control | Harvest

Successfully Applying Starter Fertilizer

- Apply 3 gallons of 10-34-0 or similar product in furrow directly over beet seed
 - Phosphorus is the key ingredient for early season plant growth, not N or K
- Can be tank mixed with water for better application uniformity and less risk of stand loss
- Can be tank mixed with Mustang Max insecticide given adequate tank agitation

Necessary Equipment

- Tank
- Manifold
- Pump
- Controller - Can be as simple as an electronic switch on valve
- Total cost for system starts at \$1,200 and goes up depending on mounting of tank, size of tank, type of controller and capacity/quality of pump



Benefits of Starter Fertilizer

- Early season vigor and growth
- Potential final yield increases especially in cool, wet springs
- **Cost savings:**
3 Gallons 10-34-0 replacing broadcast application of 100# 18-46-0
- Reduction in amount of Phosphorus applied to the environment
- Healthier plants tolerate stresses better (herbicide applications and frost)

For additional information contact your agriculturist or extension specialists. See the 1977, 1978, 1980, 1982, 1983, 1984, 1985, 1994, 1995, 1996, 1997, 2000, 2001, 2002, 2003, and 2004 Sugarbeet Research & Extension reports at www.sbreb.org.

Web sites:

www.crystalsugar.com
www.precisionpartners.com

