

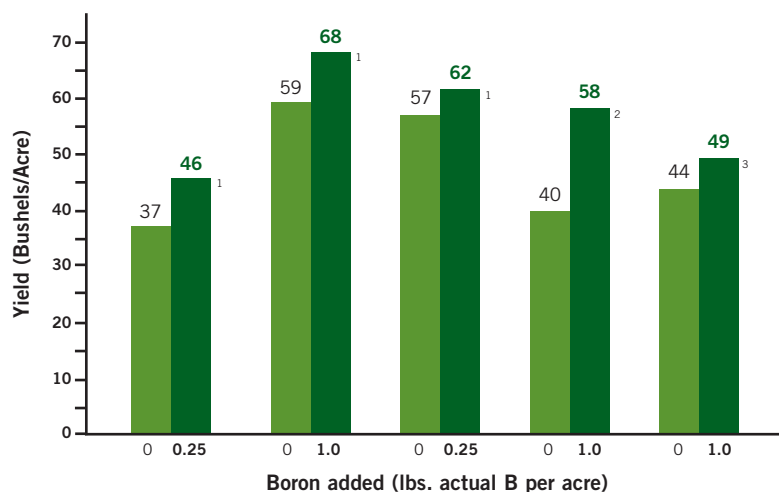
# B in soybeans

Boron fertilization of soybeans has been shown to increase grain yield at many locations in several states. University researchers have found yield increases ranging from 5 to 18 bushels per acre.

Boron is essential for all plant growth. Soybeans, like all legumes, have a high boron requirement. Boron is necessary for:

- Stimulation of root growth
- Increased root nodule development for nitrogen fixation
- Increased branching and flowering
- Increased bloom retention
- Increased pod number
- Better seed development and grain yield

## Yield data from five locations



1. Oplinger, E.S., R.G. Hoelt, J.W. Johnson and P.W. Tracy. 1993. Boron fertilization of soybeans: A regional summary. pp. 7 – 16 in Murphy, L.S. (ed.) Foliar Fertilization of Soybeans and Cotton, Potash and Phosphate Inst. Tech. Bull. 1993 – 1.
2. Gascho, G.J. 1993. Boron and nitrogen applications to soybeans: Foliar and through sprinkler irrigation, pp. 17 – 33 in Murphy, L.S. (ed.) Foliar Fertilization of Soybeans and Cotton, Potash and Phosphate Inst. Tech. Bull. 1993 – 1.
3. Graves, C.R., G.M. Lessman, L.M. Safley, T. McCutchen, and J. Connell. 1979. Tenn. Farm and Home Sci. 2:10 – 12.

# Fertilization of soybeans

Recommended lbs. of boron per acre per year

Yield goal (Bushels/Acre)	Application methods <sup>3</sup>	Boron Soil Test Rating		
		Low	Medium	High
Less than 30	Broadcast preplant <sup>2</sup>	1.0	0	0
	Band at planting	0.25	0	0
	Sidedress	0.25	0	0
	Foliar <sup>3</sup>	0.25	0	0
30 to 45	Broadcast preplant <sup>2</sup>	1.0	0	0
	Band at planting	0.25	0.25	0
	Sidedress	0.50	0.50	0
	Foliar <sup>3</sup>	0.25	0.25	0
More than 45	Broadcast preplant <sup>2</sup>	1.0	1.0	0
	Band at planting	0.25	0.25	0
	Sidedress	0.50	0.50	0
	Foliar <sup>3</sup>	0.25	0.25	0.25

1. Boron banded 2 in. beside and 2 in. below seed row at planting, foliar, and sidedressed boron are all more efficient methods than broadcast before planting.

2. If soil is limed just before planting, increase preplant broadcast boron to 2 lbs. per acre.

3. Foliar applications may be repeated up to a total of 0.5 lbs. per acre boron. Do not exceed 1 lb. per acre total boron application by any combination of methods unless lime is applied just before planting.

## How much boron is enough?

- Soybeans produced under intensive, high-yield management need boron in the fertilization program to ensure that this essential element will not be a limiting factor.
- Rates of boron fertilization should be based on yield goals along with soil tests and/or plant analyses. The chart above gives general application rates and guidelines.

## Timing your boron application

- Boron may be applied in dry or fluid blends. With dry bulk blend fertilizer, broadcasting before planting is recommended, using *Granubor*<sup>®</sup> 2.
- Boron in liquid suspensions may be applied broadcast before planting, banded at planting, or sidedressed, using *Fertibor*<sup>®</sup> in suspensions.
- Boron in liquid fertilizers may be broadcast before planting, banded at planting, sidedressed, or fertigated using *Solubor*<sup>®</sup>. This material may also be mixed with pesticides or, in aqueous spray, applied to foliage.\*
- *Never apply boron in direct contact with the seed.*

\*Foliar sprays should not exceed 0.5 lbs./acre boron per application.

\*Fertigation allows timely split applications of boron when it is needed by the crop and minimizes leaching. Drip-trickle fertigation allows incremental applications of 0.1 to 0.25 lbs./acre boron through the drip system.

\*The total amount of boron added in foliar sprays or split applications should not exceed the total broadcast recommendations.

## For more information

- Call US Borax at 1 (800) 699 9005
- Visit our website at [www.borax.com/agriculture](http://www.borax.com/agriculture)

**Fertibor**<sup>®</sup>

**Solubor**<sup>®</sup>

**Granubor**<sup>®</sup> 2