

Soy what?

Boron: the mighty micronutrient has bean there and done that

Did you know that more soybeans are grown in the United States than anywhere else in the world? It's true, but you would never know it by the talk about soybeans. Yet this small bushy green plant related to clover, peas and alfalfa is the world's foremost provider of protein and oil. These legumes find their way into hundreds of edibles, such as cooking oils, coffee creamers, margarine, mayonnaise, pharmaceuticals, chocolate coatings, candy and yes, even soy sauce. The technical uses are plentiful as well. For instance, these beans have application in anti-corrosion agents, diesel fuel, electrical insulation, and paints and inks.

Just how big is the U.S. soybean market? Farmers in more than 29 states grow soybeans, making soybeans the second largest crop in cash sales, preceded only by corn. Nearly 64 million tonnes are produced annually in the U.S., supplying half the world's demand. Some 26.5 million hectares of land are under soybean cultivation. Every other row of soybeans grown goes into the export market. Japan is the second largest customer and the European Union makes up the largest collective market.

The boron bonus

Bringing a healthy soybean crop to market is what every profitable farmer wants to do. One of the best ways to do this is to make sure the crop has the right essential nutrients for growth. Boron is one of the micronutrients needed in soybean production. Boron fertilization has been shown to increase grain yield at many locations throughout the U.S. University researchers have found yield increases ranging from 1 to 5 bushels per hectare* (or a 7 to 20 percent increase).

Boron supplementation with *Solubor*[®] fertilizer borate is recommended during the middle stage of the soybean's growth, and is applied as a leaf spray. When farmers see the first flowers in their soybean field, it's time to start applications of *Solubor*. Following this, the plants are at the critical reproductive stage as the flowering ends and the pod in which the beans develop begins to form. What does the *Solubor* actually do? It gives the soybean plant a micronutrient boost of boron just as the plant enters the crucial bean maturing stage. It also has proven to increase bloom retention, pod numbers and bean yields. *Solubor* can be sprayed alone or with insecticides or fungicides.

Promising results have been discovered with the combined use of *Solubor* and an insecticide called *Dimilin*** . After three years of trials, University of Georgia researchers found that the combination resulted in a 1 to 2 bushels per hectare increase in yields. When applying boron and *Dimilin* together, there appears to be an improved pod set and retention and better insect control, particularly for the velvetbean caterpillar and soybean looper. More than 25 percent of the state of Georgia's 162,000 hectares of soybeans received the *Solubor/Dimilin* treatment. Two of the farms reported a yield increase of 26 percent with the application.

Soybeans may be overshadowed by lofty crops like corn, but its value in everyday life makes it a giant in its own right. And *Solubor* fertilizer borate is helping to play a part in the soybean's success story.

* a bushel of soybeans weighs 60 pounds or 27.22 kilograms; one acre equals 0.405 hectares
***Dimilin* is a registered trademark of Uniroyal Chemical Company, Inc.



Dimilin and Solubor can effectively be applied by air or ground equipment (left).

While farmers in China grew soybeans more than 5,000 years ago, early use in the U.S. was as a forage crop. Today, the soybean provides valuable protein and oil.

Photos: Grant Heilman