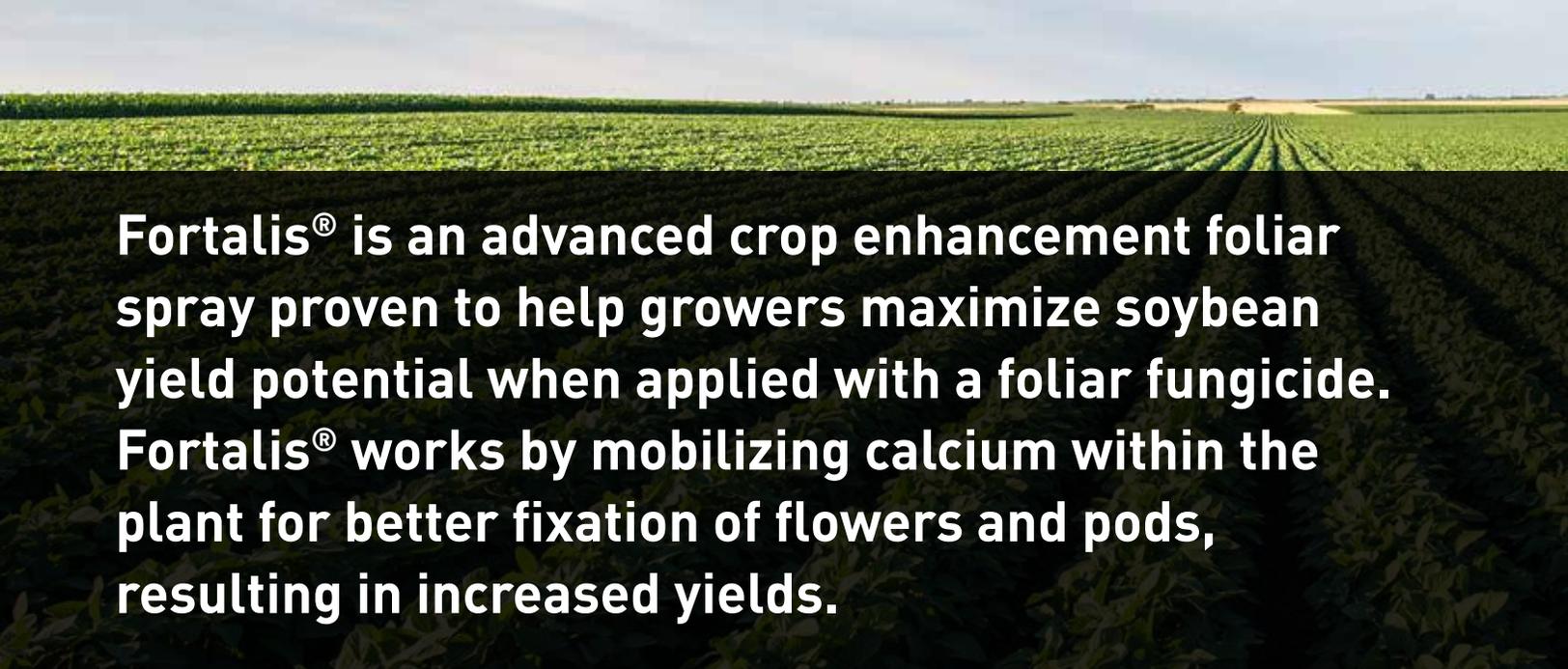


**Fortalis<sup>®</sup>** 



## Fortalis<sup>®</sup> Technical Overview





**Fortalis® is an advanced crop enhancement foliar spray proven to help growers maximize soybean yield potential when applied with a foliar fungicide. Fortalis® works by mobilizing calcium within the plant for better fixation of flowers and pods, resulting in increased yields.**

## **Fortalis® and plant stress signalling**

Fortalis® optimizes the mobility of calcium in plant tissues as part of the natural stress signalling process. Calcium typically has low mobility in the soybean plant. The distribution of calcium is poor in tissues of low transpiration and little apoplastic flow, such as in flowers and pods. This factor is even more problematic where flowers and pods are further away from the main stem. Poor mobility and distribution of calcium leads to flower and pod abortion.

- Stress during flowering and pod formation results in abortion.
- Abortion of flowers and pods reduces productivity.
- Abortion rate may reach 84%, with the probability being highest for developing flowers and pods furthest from the main stem.

**For numerous reasons, better distribution of calcium within the soybean plant leads to higher yield.**

### **Strengthens the cell wall and plant membrane**

- Better fixation of flowers and pods
- Resistance to pathogens

### **Enhances the formation of pollen tubes and germination of pollen**

- Larger number of pods
- Larger number of grains

### **Assists with the transport of nutrients**

- Phosphorus from leaves to pods
- Larger grains



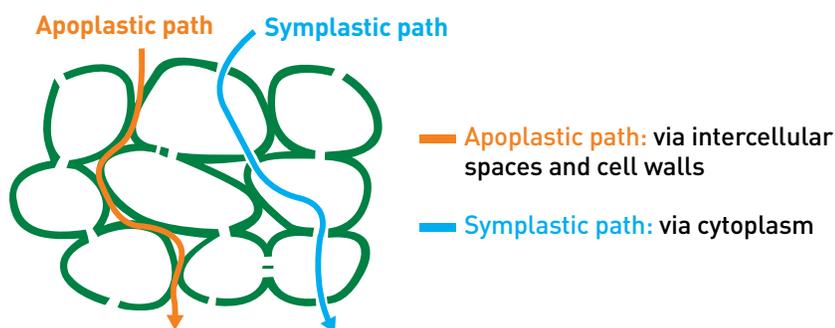
# The benefits of Fortalis®

Fortalis® improves fixation of flowers and pods, increasing the productive potential of soybean crops. The result is more soybean pods per plant and bigger seeds per pod.

## About CaT™ technology

Fortalis® contains CaT™ technology, a synthetic molecule that improves the mobility and distribution of calcium in the plant tissues.

CaT™ technology stimulates selective ion transport channels in membranes increasing the calcium concentration within the cytoplasm of cells as part of the stress signaling process. This improves localized calcium movement via the cytoplasm (symplastic pathway) rather than via the cell wall (apoplastic pathway) which is important in tissues with low transpiration, such as flowers and pods.



- CaT™ technology action stimulates selective ion transport channels in membranes increasing the calcium concentration within cells (part of the signalling process).
- This improves localized calcium movement via the symplastic pathway, which is vital in tissues with low transpiration and hence little apoplastic flow.
- By optimizing mobility and distribution of calcium in plant tissue as part of the plant's natural stress signalling process, CaT™ technology enables the soybean plant to retain more flowers and pods.

## Use and application guidelines

Apply 14 oz/acre of Fortalis® with foliar fungicide from growth stage R1 to R3. It is tank mix compatible with leading insecticides and fungicides. However, like any product containing calcium in its formulation, one should avoid mixing it with glyphosate and/or glufosinate. Note that not all potential tank mixes including other pesticides and additives have been tested for crop safety. Jar testing of all tank mix partners is recommended.

Fortalis® has a pH of 2.5. Note that Fortalis® is more concentrated in a slurry. Application by airplane will result in a more acidic pH than application by tractor.

Trials of CaT™ technology have shown no signs of increased phytotoxicity.

Trials have found that the effect on Fortalis® on the growth of soybean pods may not be visually apparent. The increase in yield will be most readily measurable in weight at harvest.

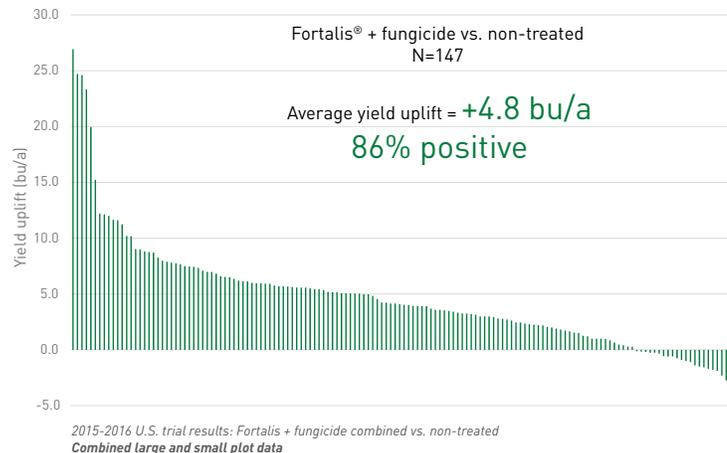


# Trial results show improved soybean yield and consistency

Field trials conducted in 2015–2016 have demonstrated the effectiveness of Fortalis®.

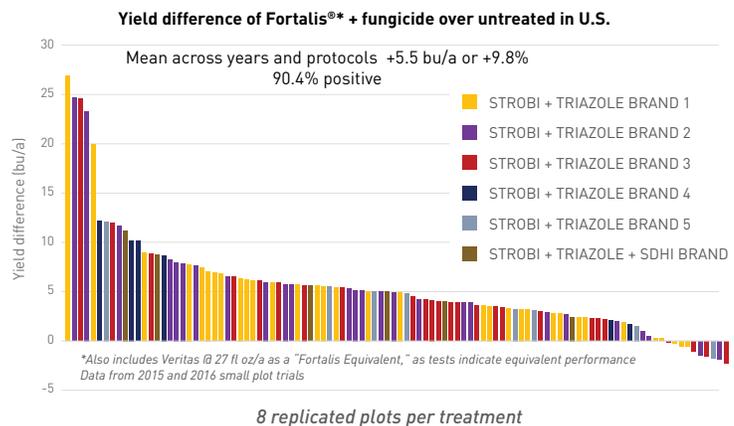
## Comprehensive trial data

Consistent yield increase with Fortalis® + fungicide across small and large plots in the U.S. (2015 and 2016)



## Small-plot replicated trial data

Consistent yield increase with Fortalis® + fungicide in small plots in the U.S. (2015 and 2016)



Pi Quality Standard sets a robust and transparent standard in efficacy, innovation, safety and compliance.



Fortalis® will be available beginning Spring 2017. Contact us for a personal consultation on the science behind Fortalis® and its proven results. Learn more at [FortalisYields.com](http://FortalisYields.com)



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