

**2022 Evaluation of Biofertilizers
and Biostimulants for Soybean
production in Kentucky
- Entry Nomination Form -
University of Kentucky**



Biofertilizers and biostimulants constitute an emergent market of products developed for row crop, including soybean. The Kentucky Biofertilizers and Biostimulants Tests are conducted as standardized protocol for field evaluation. The objective is to evaluate the plant nutrient use, health, resilience, and seed quality at harvest in response to the application of these products. The tests provide an unbiased and objective estimate of nutrient uptake, use and efficiency under field conditions in Kentucky.

A biofertilizer is defined as a formulated product containing one or more microorganisms that may enhance the nutrient status, growth and/or yield of plants by either replacing soil nutrients, and/or by making nutrients more available to plants, and/or by increasing plant access to nutrients.

A plant biostimulant is defined as any substance or microorganism applied to plants with the aim to enhance nutrition efficiency, abiotic stress tolerance and/or crop quality traits, regardless of its nutrient content.

The 2022 Tests will be conducted in the major Kentucky soybean production regions. If you have products for soybean for sale in Kentucky and would like to enter them in the state trials, please fill out this nomination form by **March 18th, 2022**. After reception of the nomination form, a notification will be sent to you to confirm that your product has been accepted in the tests.

The fee for each entry is \$500. Application methods must be either stated in the nomination form or provided with each product. For each product, enough quantity should be provided (see page 5 for information) by **April 1st, 2022** to Claire Venard at the address below. A notification will be sent to you when your product(s) has/ve been received.

A statement of fees will be sent to you with instructions for remittance of fees. Please note that no check should be sent until you have been billed.

Thank you for marketing tested products for soybean production in Kentucky and for your interest in the KY tests. Your participation in the tests helps all soybean producers of Kentucky. Preliminary data will be posted on the University of Kentucky Soybean Performance Tests website as the tests at all locations are harvested. A final report will be distributed through the University of Kentucky Extension Offices across the State.

Shipping address: University of Kentucky, Department of Plant and Soil Sciences, N-122 Ag. Science Center North, 1100 South Limestone Street, Lexington, KY 40546-0091

Tel: 859-257-2993 (office) / 859-492-1135 (cell)

Email: cvenard@uky.edu

<http://pss.ca.uky.edu/extension/soybean-variety-trials>

2022 Entry form:

Products that do not require registration with the US Environmental Protection Agency (USEPA) are accepted in the tests. The Products have to be authorized for sale and use in Kentucky.

Nominator name:

Organization name and address:

Phone number and email address:

How do you prefer to be contacted to receive the statement of fees?

By email By mail

Remittance of the fees will be due 30 days after receiving the statement of fees from the Kentucky Agricultural Experiment station.

Would you like to receive printed copies of the “2022 Biofertilizers and Biostimulants for soybean production in Kentucky” report?

A pdf version of the report will be emailed to all nominators. The printed copies and mailing are free of charge.

I don't need any printed copy. I will use the pdf version of the
 report. Yes. Please mail me ___ copy(ies).

By checking the box below, you confirm that you have read the procedures and regulations for the Evaluation of Biofertilizers and Biostimulants for Soybean production in Kentucky Tests on page 3, and you agree with all.

I agree

	Product Name and Category	Application Method
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Evaluation of Biofertilizers and Biostimulants for Soybean production in Kentucky

Purpose and Experimental Protocol

The protocols described here are for field evaluations of products that were developed for soybean: biostimulants that may enhance the nutrient status, growth and/or yield of plants by either replacing soil nutrients, and/or by making nutrients more available to plants, and/or by increasing plant access to nutrients; and biofertilizers, which enhance nutrition efficiency, abiotic stress tolerance and/or crop quality traits, regardless of its nutrient content.

The protocol is designed to generate results as accurate and reproducible as possible in order to provide KY soybean producers with reliable information about the effectiveness of the products. The tests are conducted annually by the Kentucky Agricultural Experiment Station, and are designed as a direct service and benefit to agriculture in the state of Kentucky, and in the United States. Results of these tests are published to provide information to producers and product developers.

Requirements for nomination and testing

Products that do not require registration with the US Environmental Protection Agency (USEPA) are accepted in the tests. The products have to be registered for sale in Kentucky.

Products must be identified by their commercial name(s) required to be on the tag or label, i.e., listed in the manner by which the product will be offered for sale in Kentucky. Use of a brand name or trademark is not acceptable unless it is clearly identified as being other than a part of the product designation. The complete designation, brand and product name, will be published in the performance bulletin.

Selection procedure

The size of the 2022 tests will be approximately 50 entries. Organizations nominate their entries. The entries should be listed on the nomination form in order of priority with the highest priority first. Entries will be accepted until all slots are filled.

TESTING PROTOCOL

The test sites are located across the soybean production regions of Kentucky, which include the major soils and sample a range of environmental conditions.

Soil type across the experimental area will be as homogenous as possible. All management practices such as tillage/no-tillage, pest control, seed variety, fertility, etc., will be identical across the entire experiment and based on current recommended practices by the University of Kentucky Crop Specialists.

The plots are six-row wide (with a row spacing of 15 inches) by 15.5 feet long. All the treatments will be tested on a single soybean variety in the relative maturity group 4 (4.0 to 4.9) is planted (at a rate of 4 live seed per foot of row). The soybean variety will be raised as full-season crop. Procedures used for planting, weed control and harvesting will be similar to those used in actual commercial production of soybean (on-farm production).

Treatments, will be randomized (RCD design) will evaluate the products (biostimulants and biofertilizer) based on the label the products. Recommended application rates and procedures on the label will be used. Equipment used to apply the biostimulants or biofertilizers will be cleaned between application to ensure no contamination between treatments. If a product requires foliar application, the rate, form, timing, placement, type of sprayer and nozzle size for all applications will be recorded. Treatments will be replicated three times, and yield data compared by statistical analysis to untreated plots data.

Table 1 below lists the agronomic and environmental information collected over the course of the soybean growing season.

Site Information	Cultural Practices	Agricultural Management	Environmental information
<ul style="list-style-type: none"> • Soil and landscape • Drainage class • GPS coordinates • Slope • Soil type 	<ul style="list-style-type: none"> • Tillage / No-tillage • Cover crop (species, termination date) • Previous crop 	<ul style="list-style-type: none"> • Routine soil test results for nutrients, soil organic matter and pH • Routine soil test for SCN • Herbicide program • Soybean variety • Planting Date and depth • Seeding rate and population • Harvest date 	From planting to harvest: <ul style="list-style-type: none"> • Daily rainfall • Daily ambient temperatures • Daily relative humidity • Growing degree days • Soil temperature and moisture • Solar radiation

Table 1: site, agronomic, and environmental information collected at all test sites

Observations such as seed shattering scores, hail damage, or pest information may be taken if warranted.

Stand count, yield, lodging score, and seed composition will be collected at all locations at harvest. A research plot combine will be used for harvesting the center 4 rows from the 6 rows plot. Seed samples will be collected at all locations for seed quality evaluation by NIR spectrophotometry.

PUBLICATION OF THE RESULTS

Data for all entries in the Tests will be published according to the policies established by the Kentucky Agricultural Experiment Station. If for any reason the results of the tests are judged to be unreliable or possibly misleading, the results will not be published. Results will be published annually in the University of Kentucky progress report "Evaluation of Biofertilizers and Biostimulants for Soybean production in Kentucky".