




Frequently Asked Questions

On-Farm Trial Network's Cover Crop Biomass & Weed Suppression Protocol

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| Q: What is the purpose of this experiment? | A: To assess the impact of two cover crop species, cereal rye or winter barley, on weed suppression and yield in the subsequent soybean crop. The main research questions are: <ul style="list-style-type: none">• To what extent do cereal rye or winter barley suppress weeds in the following soybean crop?• Is one species more effective at weed suppression than the other?• Does either species affect soybean yield? |
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| Q: What parameters are you measuring? | A: We will measure baseline soil fertility, spring cover crop biomass, in-season weed pressure, and soybean yield. We will also collect historical and current management data to better understand field conditions prior to and during experiment implementation. |
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| Q: Why are you comparing cereal rye to winter barley? | A: Both species overwinter and can produce tons of spring biomass, which can suppress weed germination and growth. Due to the similar growth habits of cereal rye and winter barley, we want to decipher which species is more effective in Illinois soybean systems. |
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| Q: Why does the site need to be reduced/minimal or no-till? | A: Cover crops are typically one part of a conservation systems approach, often in combination with reduced or no-till practices. Conducting this trial in a typical setting ensures the results are directly relevant and applicable to the management systems where cover crops are most commonly and effectively used. |
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- Funded by Illinois Soybean Checkoff
- OFTN 



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- Q: Why are you only focusing on one seeding rate?
- A: Extensive research has already established ideal seeding rates for cereal rye and winter barley with consideration to weed control efficacy. In this trial, our focus is comparing species performance, not seeding rate. Adding rate as a factor would nearly double the size and complexity of the study, making implementation and data collection less feasible.
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- Q: Why is there a control treatment?
- A: A control treatment (no cover crop) is necessary to provide a baseline for comparison and isolate treatment responses. Without a control treatment, we would have no reference as to what the "normal" conditions would have been had the cover crop not been planted. For example, if we count 100 waterhemp plants in the control strip, 10 in the winter barley strip, and 0 in the cereal rye strip, we can conclude that winter barley reduced weed pressure by 90%, and cereal rye by 100%. The control gives us the baseline needed to calculate those differences.
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- Q: Why do the cover crops need to be planted right after harvest?
- A: Early planting allows cover crops to establish strong fall growth, which improves winter survival and ensures they produce enough spring biomass for effective weed suppression. Late planting limits fall growth and delays spring biomass accumulation, which increases the chance of termination interfering with timely cash crop planting.
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- Q: Why do I need to allow 12" of growth in the spring prior to termination?
- A: For cover crops to effectively suppress weed growth, they must be allowed to accumulate sufficient biomass. Taller, more established cover crops create denser residue, which limits sunlight reaching the soil surface, reduces weed seed germination, and outcompetes emerging weeds. Terminating the cover crop too early can reduce its weed-suppressing benefits and compromise the goals of the trial.
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| Q: Why do I need cover crop experience to participate in this research? | A: Farmers with cover crop experience are more likely to have the equipment, knowledge, and management systems needed for successful establishment and termination. Since the trial is being conducted at only four locations across Illinois, we want to minimize the potential for errors and ensure the collection of valuable data. |
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| Q: What are my responsibilities as a farmer/cooperator participating in this study? | A: Farmer responsibilities will include: <ul style="list-style-type: none">• Providing historical and current management information.• Planting and terminating the cover crop.• Planting the subsequent soybean crop.• Harvesting the soybeans using a calibrated yield monitor.• Completing all tasks according to the protocol. |
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| Q: How will this research benefit soybean farmers in Illinois? | A: Illinois farmers have identified herbicide-resistant weed species as a top research priority through the Illinois Soybean Association (ISA) Soybean Production Concerns Survey. This study was designed to address that concern, and its results will serve as a resource for farmers seeking alternative weed management strategies to control herbicide-resistant weeds. |
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| Q: Does this type of research already exist? | A: Similar research studies have been conducted at universities on a small plot scale utilizing cereal rye for weed suppression. However, less has been conducted on a farmer field scale, and even fewer studies have compared the two species ahead of soybeans across Illinois environments. |
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