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Study evaluates cover-crop use in organic vegetables

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Farmers can fine-tune their use of cover crops to help manage costs and maximize benefits in commercial organic production systems, according to U.S. Department of Agriculture scientists.

Production expenses for organic crops such as lettuce and broccoli can exceed \$7,000 per acre, so producers often try to streamline costs with an annual two- to three-crop rotation. USDA Agricultural Research Service horticulturalist Eric Brennan designed a long-term investigation that examined several different cover-cropping strategies for an annual organic lettuce-broccoli production system.

The researcher selected three winter cover crops often grown in the Salinas area—rye, mustard, and a legume-rye mix—and planted each cover crop using either a typical seeding rate or a seeding rate that was three times higher. Seeding rates can influence a cover crop's ability to smother weeds.

During lettuce and broccoli production, Brennan ensured all systems received the same fertilizer and irrigation inputs and pest management. The harvest and sale of the crops, which met all USDA organic standards, were conducted by a commercial harvester.

Brennan said his results indicated that all three cover crops yielded more dry matter than the two tons of crop residue per acre often recommended for maintaining soil organic matter. The legume-rye and rye cover crops produced approximately 25 percent more dry matter biomass than the mustard crops. But effectively suppressing weeds with the legume-rye crops required seeding at three times the typical rate, while rye and mustard crops appeared to suppress weeds adequately with typical seeding rates.

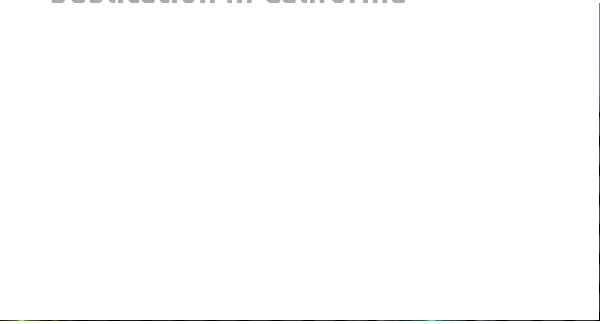
The long-term study also provided Brennan with more data about year-to-year yield variations in the legume-rye mix, including why legumes, which make up most of the seed costs, are not consistently abundant.

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