LAND-GRANT UNIVERSITIES HAVE IT COVERED

Cover crops are often planted to reduce erosion, decrease runoff, sequester carbon, and enhance soil health on agricultural land. But there's no one-size-fits-all strategy. Some cover crops are expensive to plant. Some varieties don't grow well in certain soil types, crop systems, or climates, and others take over as weeds. The land-grant university system has a unique ability to help farmers across the U.S. select and manage cover crops. Land-grant university scientists and Extension specialists and educators are working together to develop and distribute cover crop management guidelines that ensure the economic and environmental sustainability of agricultural production nationwide.

RESEARCHERS ARE STUDYING COVER CROPS

Land-grant university researchers are:

- studying and modeling the impact of different types of cover crops on crop production and profitability.
- examining how cover crops can make our production systems more resilient to the impacts of climate change.
- identifying cover crops species adapted for particular growing regions.

RESEARCHERS ARE HELPING FARMERS USE COVER CROPS

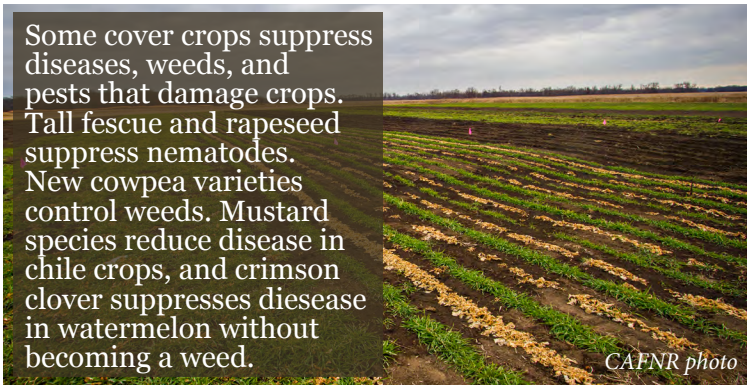
Land-grant universities have:

- put experts on the ground to respond to increasing requests for advice about cover crops. Researchers and Extension specialists and educators are working with farmers, government agencies, policymakers, crop consultants, and agricultural businesses.
- developed the Cover Crop Decision Tool and the Cover Crop Planting Date Web Tool to help farmers select and manage cover crops.
- helped farmers understand how to manage cover crops under changing climate conditions.
- created the Organic Fertilizer and Cover Crop Calculator, an online tool that helps farmers quickly and accurately determine the amount of nutrients cover crops supply to their annual crops and how much additional fertilizer is needed. That means nutrients will be used up by annual crops instead of running off the land and polluting water resources.

RESEARCH SHEDS LIGHT ON MANAGING COVER CROPS

With a winter oil seed radish cover crop, corn and soybean yields were higher than when fields were left fallow. In watermelon fields, a winter cover crop of hairy vetch released pathogen-deterring ammonia into the soil and tripled melon yield.

Cover crops support beneficial insects, which can help keep pests in check, and beneficial microbes that keep soils healthy.



Some cover crops suppress diseases, weeds, and pests that damage crops. Tall fescue and rapeseed suppress nematodes. New cowpea varieties control weeds. Mustard species reduce disease in chile crops, and crimson clover suppresses diesease in watermelon without becoming a weed.

CAFNR photo

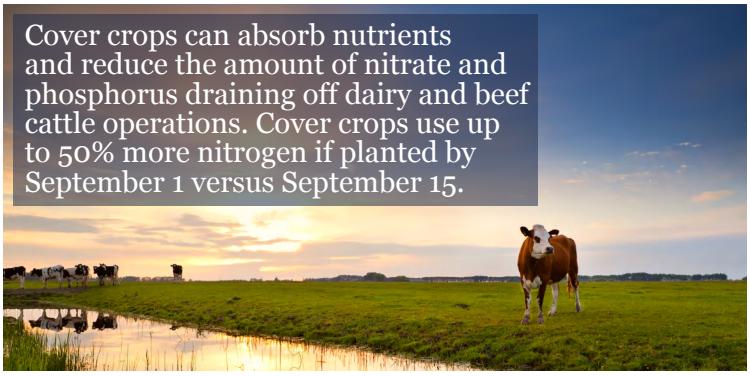
Cover crops offer a way to control pests, weeds, and diseases without chemicals, which can be expensive and ineffective, and can pose environmental and human health risks.

Photo by Aqua Mechanical, Flickr

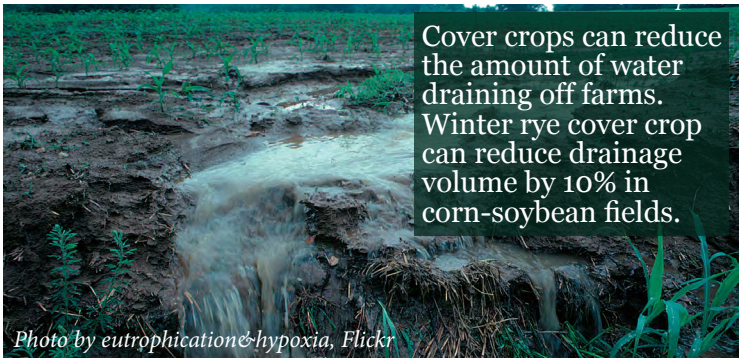
Permanent cover crops in wine grape production can decrease soil erosion and increase soil organic matter.

Photo by björn hornemann, Flickr

Some cover crops can provide nutritious, cost-effective, sustainable forage for beef cattle. Oat and brassica mix results in good weight gain and marbling. Oat, turnip, and winter pea mix has high yield and low planting cost. Millet has low cost and high protein and nutrient content.



Cover crops can absorb nutrients and reduce the amount of nitrate and phosphorus draining off dairy and beef cattle operations. Cover crops use up to 50% more nitrogen if planted by September 1 versus September 15.



Cover crops can reduce the amount of water draining off farms. Winter rye cover crop can reduce drainage volume by 10% in corn-soybean fields.

Photo by eutrophication&hypoxia, Flickr

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