

# The Californian

## Cover crops coming into their own

**TOM LEYDE** Published 3:00 p.m. PT March 21, 2017



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If you're driving through the Salinas or Pajaro valleys and seeing fields of green that don't look like crops, don't be alarmed. You're likely looking at a cover crop.

More of them are showing up, especially in fields where organic fruits and vegetables are grown. They are sometimes referred to as "green manure" because of the benefits they provide to the soil and to the environment.

One of the country's major proponents of cover crops works in Salinas Valley. Eric Brennan is a scientist at the USDA's Agriculture Research Service in Salinas.

Since 2001, he has been doing research on cover crops. He runs field tests on them at the USDA's property on Spence Road, southeast of Salinas. He is believed to be the only USDA scientist focused exclusively on organics.

Late last week, he was working with a tractor driver to mow acres of Merced rye and FL104 rye grass cover crops in anticipation of an approaching rain storm. A field of bright yellow mustard stood nearby, another cover crop.

Besides building up soil, cover crops have a myriad of benefits, including:

- Preventing soil erosion.
- Water management.
- Weed management.
- Disease management.
- Pest management.
- Promoting diversity and wildlife.
- And they help prevent global warming by reducing greenhouse gases.

About the only downside to cover crops is they make farming more complex. Brennan says using cover crops is like juggling three balls. Juggling one is easy, juggling two is doable, but juggling three is more difficult. Even so, the benefits outweigh the extra effort involved.

“I’m convinced they have much to add to both organic and conventional farming,” said Brennan, who has a doctorate from UC Davis in plant biology.

There is increasing interest in cover crops throughout the United States, he said.

In agriculture, you need to put carbon back into the soil to keep the soil functioning efficiently. A cover crop, such as rye, takes CO<sub>2</sub> out of the air, forms it into plant tissue and returns carbon to the soil, which provides energy for a number of soil organisms.

It also soaks up nitrates and helps prevent it from leaking into the water supply.

“Rye is a very dependable cover crop,” Brennan said. “It’s inexpensive and it’s a scrappy plant. It fights off weeds.”

It also grows well in winter, he added.

Cover crops are planted in the same areas where crops are grown and are rotated with fruits and vegetables. Brennan has worked closely on cover crops with strawberry farmer Roy Fuentes, who has a field in production on the USDA property.

Cover crops such as mustard are also planted between the rows of strawberries to help fight off weeds and reduce runoff and erosion. When the mustard grows as high as the strawberry bed top, it is cut and the cuttings are left to provide nutrients to the soil.

“We’re trying to come up with ways for famers to deal with cover crops without having to deal with the headaches,” Brennan said.

With cover crops, he said, “there’s more to manage and you’ve got to be a better farmer. It takes practice and consistency.”

As the world population continues to grow, he said, we have to make agriculture systems tighter and more efficient. One term for that is “mofo lopo” (more food, less pollution).

“It all relies on the scientific method,” Brennan said. “Testing things and coming up with solid data.”

In Brennan’s job he deals with component, or short-term studies, and long-term systems research, looking at how one thing effects everything. He likens it to long-term medical studies that go on for years, testing many subjects against a control group.

Soil, he said, is more complex than the human body.

“All items interact. It’s complicated. It’s extremely complicated.”

Brennan grew up in Paupau New Guinea. At 17, he moved with his family to Oahu, Hawaii, where he earned a bachelor’s degree at the University of Hawaii. He went on to earn a master’s degree at Cornell University before working on his Ph.D. He also worked in the Peace Corps in Thailand and Zambia after completing his undergraduate degree.

He has observed agriculture around the world and finds the Salinas Valley to be great place to do his research.

“I love my job,” he said. “I love coming to work. I love working with farmers to come up with solutions. ... It’s a great time to be in agriculture.”

For more on Eric Brennan’s cover crop research and videos visit

[www.researchgate.net/profile/Eric\\_Brennan/publications](http://www.researchgate.net/profile/Eric_Brennan/publications) and

<https://www.youtube.com/user/EricBrennanOrganic>