n the mid-1990s, while serving as a
director of his local soil and water
conservation district and chair of the
local agricultural water quality advisory
committee, Dan Logan decided it was
only fitting to do what he could to protect
water quality. So Logan introduced cover
crops into his Christmas tree rotations.

He introduced the new cropping
regime on some ground that had never
been in Christmas trees and on some
ground that had been in continuous
Christmas trees since the 1970s.

"I will tell you that ground is really
depleted," he said. "I'm having troubles
growing weeds now on some of it."

What Logan subsequently
discovered has changed the way he
approaches farming. Leaving soil bare,
once commonplace on his family farm,
now is a thing of the past. And the cover
crops, which he's had in place since
1998, today are doing far more than
protect water quality.

"I think the soil is better and I think
I'm getting a better tree," Logan said.
"It's been a very positive experience.
Even from the perspective of a minor
thing like when you're harvesting, your
trees stay clean because you have a lawn
to walk on."

Logan is among a growing number
of farmers nationwide, including several
involved in the Pacific Northwest
Christmas tree industry, that have
discovered the benefits of cover crops.

Terry Mullenburg of Green Valley
Farm in Molalla is among them. "I don't
like to leave any soil bare," Mullenburg
said.

Like Logan, Mullenburg originally
looked at cover crops as a means to
prevent soil erosion. He, like Logan, also
discovered multiple benefits.

"It sequesters nutrients –
particularly nitrogen – in the fall and
early winter when things are still
growing," he said. "Secondly, the cover
crop provides the opportunity to not
use herbicides in that area, which
allows for soil micro-bacteria to grow
and flourish. And it provides cover for
beneficial insects."

Jeremy Baker, a conservation
specialist at Clackamas Soil and Water
Conservation District, said the key to the
benefits of a cover crop lie in its roots.

"What we are finding is if you can get
that root in the ground, you get several
benefits," Baker said.

"You can use it to fix nitrogen," he said. "You can use it as a way to get
natural nutrients in the ground. You can
use it for erosion control and to suppress
weeds. Water infiltration is enhanced

(continued on page 14)
because you have little roots sticking holes in the ground, so that helps keep water in the ground longer. It also provides shade for the soil, which helps it hold moisture. It provides traction for vehicles to operate during harvest," Baker said.

And, he said, certain blends of cover crops can help attract beneficial bugs.

**Moisture Competition Minimal**

Perceptions that cover crops compete with Christmas trees for moisture, meanwhile, are largely false, according to Mullenburg.

He explains, "When there is plenty of water for everything is when your cover crop is growing." Conversely, he said, when moisture is at a premium, the cover crop is dormant, having already gone to seed, and is no longer in competition for nutrients and moisture.

"When moisture becomes a critical part of the equation, (the cover crop's) demand for moisture has passed," he said. "And it actually provides shade for the soil that helps hold in moisture."

Mullenburg, who has grown cover crops between his tree rows for as long as he has farmed, said he would do so even without tangible agronomic benefits.

"I do it totally regardless of whether I get better trees," he said.

That said, Mullenburg believes cover crops do provide tangible benefits for most farming operations. For one, his herbicide costs are lower because of the practice. And cover crops may enable more consecutive rotations of Christmas trees.

He explains, "I remember several years ago visiting with some guys at a Christmas tree meeting and they said, 'Isn't it interesting that when you get to that third rotation, the trees just don't look as good?' Well, the soil has been depleted, the harmful insects, like root weevil, have had an opportunity to grow and develop on this homogenous crop that you've been keeping out there for twenty years.

"In the long term, by sustaining the soil, it will result in better trees," he said. "I know that if I feed and take care of the soil, it will take care of me."

Mullenburg typically starts a rotation by planting an annual cover crop between rows of newly planted seedlings in the early spring. He starts with a crop that gets up quickly, such as cereal rye or oats, which he discs in as green manure in early summer. The following fall, he'll plant a permanent cover crop of a hard fescue, such as Pure Seed's Soil Guard. In addition, he will plant a few rows of a flowering cover, such as Dutch or New Zealand White Clover, which will attract beneficial insects to the field.

Logan said he typically plants a mixture of annual ryegrass and creeping red fescue in the fall. He uses annual ryegrass because it grows up quickly, gets established and holds soil in place over that first winter. The red fescue, which he describes as a "pretty tough plant," provides long-term benefits over the life of the stand.

Logan prefers to plant a cover crop ahead of seedlings, then spray out rows for Christmas trees.

Jennifer Nelson of the Tualatin Soil and Water Conservation District, said growers interested in utilizing cover crops in their Christmas tree operations should consider starting small. "We find that people who take a little bit on at a time and build from there tend to see a much greater level of success," she said. "You might think about trying it out on one acre instead of putting it on one-hundred acres to start out."

She said growers can purchase a commercial cover crop pre-blend or select their own cover-crop mixes.

In her experience, fine-leaf fescues perform exceptionally well as cover crops. "They didn't get too tall," she
said. "They didn't get out of control, didn't grow outside the aisles. They weren't crawling up trees." And they thrived for the full duration of a stand.

Conversely, she found that bentgrass, clover, perennial ryegrass and annual bluegrass were all gone after five years.

"A good approach seems to be to put something in that is going to grow fast and die back after the first year and blend it with something that is going to be there for the long haul," she said.

**Defraying Establishment Costs**

Nelson encouraged growers to contact their local SWCD if thinking of incorporating cover crops into their production regimes. In addition to advice, SWCD's may have information on conservation grants available to help defray the cost of getting a cover crop established.

"We will come take an hour or two, walk your property, talk to you about how this stuff could work for you in your system," she said. "We also can help you get connected with the Natural Resources Conservation Service office in your county and we strongly recommend that you check out their resources."

Cover crop usage can fall under several NRCS cost-share programs, she said, including programs designed to help growers reduce use of agricultural chemicals, pesticide drift and soil erosion.

Mullenburg said much of what he learned about cover crops came from his father, who was using cover crops well before they became a popular method of reducing soil erosion. Mullenburg noted, in fact, that when he first approached his local SWCD about incorporating cover crops into his Christmas tree operation, he drew odd looks.

"I said I wanted to plant a cover crop between the Christmas trees and they looked at me like that was odd," he said.

"They said we prescribe planting trees as a cover crop. I thought, well, you've just barely scratched the surface."

Mullenburg described his experience with cover crops as a "very positive experience. If it wasn't a positive experience, I wouldn't keep doing it," he said.

Logan had a similar response when asked to describe his experience with cover crops. "The bottom line is I'm hanging in there," he said. "I'm still growing trees.

"Without the cover crops, I think it would be really hard to be doing this without a lot of soil amendments," he said. "I think it would take a lot more inputs." ▲