Can prairie strips work with pesticides? Plus, organic challenges

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COMING UP THIS WEEK:

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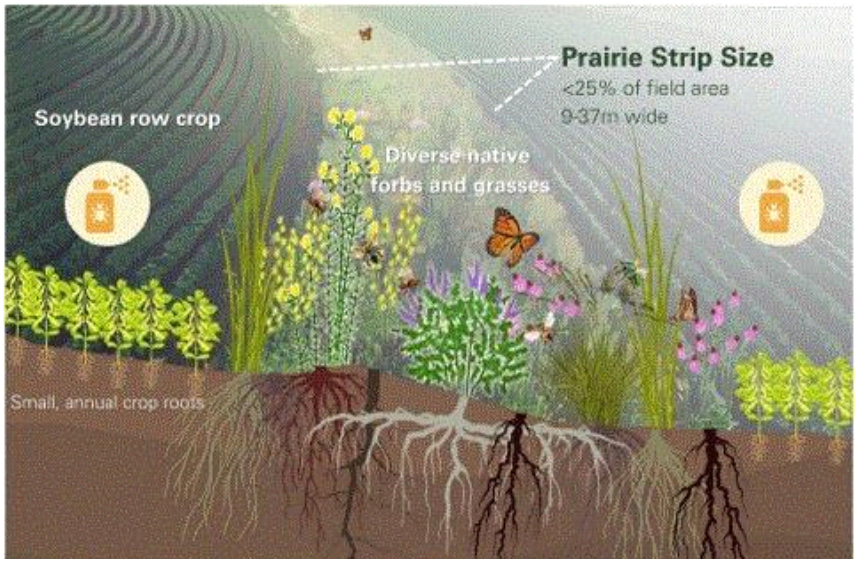
Prairie Strips & Pesticides

We've been hearing about the benefits of prairie strips for years—pollinator-friendly plants squeezed into narrow strips near row crops. But a new report set out to evaluate if these strips are actually beneficial when parked in fields of conventional agriculture, where pesticides and herbicides are being applied. The consensus? Yes, there are still net benefits.

The research review team, led by Amy Toth at Iowa State University, says the big takeaway is that even small changes in how land is managed can make a real difference. Prairie strips were, in fact, first touted for their ability to reduce soil erosion and improve water quality. The flowering plants and pollinator connection was realized later on. But the Iowa team wanted to understand if the benefits truly outweighed the risks when these strips were adjacent to chemical applications.



According to a research review that looked at a decade of studies, honeybees near these prairie strips collected more pollen, grew larger and had higher winter survival rates than colonies without strips. The strips give the bees continuous, high-quality food, even when the rest of the landscape isn't producing much.

"Pesticides are an important concern, and we took that seriously," Toth said in a news release. "But findings from these studies show that while pesticides can be detected in prairie strips, exposure levels are generally low and not different from what pollinators experience in other crop-adjacent habitats. Overall, we're seeing large benefits and relatively low costs."

And one reason may be that the high-quality forage of the prairie strips are helping buffer pollinators from stressors such as pathogens and pesticides.

Want to hear more? Toth and one of her colleagues discuss this research on the podcast Bioscience Talks.

America In Bloom Launches Garden Certification Program

America In Bloom (AIB) is giving home gardeners, businesses, schools and others the chance to certify their gardens through the brand-new Gardens Across America program. For the $20 certification fee, you can show that your garden —no matter how little—contributes to community vitality, beautification and environmental stewardship.

AIB says that "Gardens Across America is rooted in the idea that environmental stewardship and community pride are nurtured one garden at a time. You don't need a professionally designed space to participate—what matters most is your commitment to fostering beauty and sustainability in your community."

Certification only takes a few minutes and you get a printable certificate, a press release if you want to announce your efforts, as well as AIB resources. It might be a great way to prime a community for participating in AIB, even if they aren't ready to compete in the full AIB program yet.

Organic Hurdles Revealed in Detail

The National Center for Appropriate Technology's ATTRA Sustainable Agriculture program recently came out with a report on organic certification, looking at some of the barriers to getting and remaining organic. And I've got to say, a lot of it makes organic growing (or arguably just farming in general) look challenging from a business perspective.

PROFITABILITY OF ORGANIC FARM	ALL FARMERS	BEGINNING FARMERS
Not breaking even	21%	26%
Breaking even	16%	16%
Making a small profit	46%	48%
Making a comfortable profit	16%	10%

When they surveyed organic farmers, 21% reported not breaking even, 16% were just breaking even, 46% were making a small profit, and 16% said they were making a comfortable profit.

At the same time, many of the farmers in the focus groups identified the organic label as the thing that has had a positive impact on their bottom line. But the list of challenges is long—everything from consumers not understanding the benefits of organic to leasing land and lack of retirement planning. As one contributor to the report noted: "We're not getting an investment plan into our retirement the whole time we've been farming because it went into the new tractor, and the greenhouses, and all those things we would have put into retirement are sitting out in the yard right now."

You can take a deep dive into organic and its hurdles over HERE.

Which Pharm Drugs End Up in Plant Tissue?

Add this to the list of things consumers may be worrying about: pharmaceutical compounds in irrigation water. Treated wastewater is known to contain compounds from psychoactive medications, and so the question posed by researchers at Johns Hopkins University was what happens to those compounds if you water crops with the wastewater?

This particular study looked at tomatoes, carrots and lettuce and used four different pharmaceuticals used to treat depression, bipolar disorder and seizures. In the case of an epilepsy drug, plants metabolized the drug, but in other cases the compounds accumulated in plant tissues. According to researchers, the tomato leaves had 200 times the concentration of the drugs compared to the fruit. And with carrots, the concentration in the leaves were roughly seven times that of the edible roots. As for the lettuce, well, that's obviously a leaf and that's

where the compounds seemed to accumulate.

But while this all sounds slightly alarming to the general consumer, the researchers urge that this is not a health warning. Their work is understanding how plants process different compounds and is setting up the groundwork for future studies, including which compounds would be worth studying more and perhaps regulating if wastewater becomes a more common irrigation source. They said the levels they saw were not cause for health concerns.

In *Science Daily*: “Just because these medications are commonly found in treated wastewater doesn’t mean they’ll have any meaningful impact on the plant or plant consumer,” said co-author Carsten Prasse, an associate professor of environmental health and engineering at Johns Hopkins who studies environmental contaminants and wastewater.

Report from the MT Outpost

I found winter, y’all. It was not in Montana. I travelled east to Lake Placid, New York, to watch the Cross Country World Cup Finals and found myself in several snowstorms during my travels, doubling up on jackets at the races, and discovering a full-winter experience in Vermont and New Hampshire. Was I kind of excited to experience a damp, cold, snowy landscape? Yes.

Meanwhile, back home, temps have been in the 60s, grass fires keep starting, and I’m wondering if I should try planting some cold crops when I return.

Until next time,

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