

EXCITING TIME TO INCREASE ADOPTION OF BIOLOGICALS



Specialty tree, nut, vine and fruit and vegetable growers are well-versed in the sustainable benefits biological products bring to their operations. As U.S. agriculture faces more pressures, row crop farmers are also learning how biologicals offer big opportunities for their future.

Corn, soybean and other traditional row crop farmers are increasingly battling weed and pest resistance and seeing products retired due to regulatory pressure. It's time to expand their toolbox.

Farmers already know the biological advantage Bt corn brings to production management. Now, they can bring in other biologicals to take on a wide spectrum of additional insects, weeds and diseases. Emerging problems may also be a good fit for biological control. With Certis products, there is no limit to what solutions are available throughout the season, from in-furrow application to foliar treatments to unrestricted sprays before harvest.

Every farmer has a different comfort level with trying new crop protection products. I encourage farmers to connect with Certis biological product specialists to review their production practices and pest challenges and learn how our products can enrich existing management systems. It is not our goal to help farmers navigate crop production with fewer tools—rather, to provide a new set of tools. With profitable sustainability at stake, it's time to incorporate biological solutions.

Nick Vandervort

Certis Biologicals Midwest field development manager

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TESTIMONIAL

SOFTER PEST MANAGEMENT PROGRAM BUILDS UP SUSTAINABILITY

Pest management has come a long way since Ron Britt first began treating insects and diseases in tree fruit some 45 years ago. The Yakima, Wash., consultant/researcher says the orchard industry has more products and technology available now, allowing growers to effectively apply sustainable, natural pest control strategies that reduce plant stress and better protect workers.

“Using softer, biological materials and fewer traditional chemicals can increase production and improve the overall health of an orchard,” says Britt. “We see fewer outbreaks because the growing environment is more in balance. The pests essentially control themselves.”

Britt says notably when natural predators and parasites control pests, growers can reduce their input costs and chemical use. Rather than kill all pests present, biological tactics he has tested in research fields have been proven to control specific pests without destroying the beneficial ones.

Chemical drift issues are reduced, also, which protects schools, subdivisions and businesses that may be near orchards. “Worker safety is a big issue for tree fruit production, so any time we can reduce the chemicals used to control insects and diseases, it is critical to operation health,” he adds. “As we eliminate chemicals, environmental sustainability follows, and that is our goal.”

Looking to the future, Britt anticipates it will take a few more years to move a majority of orchards to using nearly all biologicals. Some remain hesitant to completely remove chemicals from their pest management programs because of concern fruits will not look “perfect.”

But he is optimistic. “I think chemical use will become old school down the road, and the public will demand fewer chemicals be used on their fruit,” he says. “We have more biologicals available. Certis is a major player in sustainable agriculture. As they bring more innovative, effective and economical products to market, the decision to use them will become even easier.”

Ron Britt
Ron Britt & Associates



CASE STUDY

Biologicals Expand Fire Blight Treatment Options

When it comes to fighting fire blight in apples, Dave Slaybaugh has learned that having more modes of action at his disposal is the best way to put out any flare-ups. A fourth-generation grower, Slaybaugh says introducing biologicals into the family-owned wholesale fruit farm was an effective strategy for adding more options for controlling several diseases and insects.

“We work with a crop consultant to determine what products to use and attend meetings to stay up to date about new products coming on the market,” says Slaybaugh, who manages 650 acres of apples and 50 acres of peaches with his son, Blake. Mt. Ridge Farms is located near Biglerville, Pa. “We like to be progressive growers, and we are always looking for the next new product or practice to try that will improve our business.”

Slaybaugh’s fire blight arsenal now includes several biologicals products like Double Nickel, Cueva and LifeGard, along with a couple of others, that allow them to rotate modes of action and put off any resistance development. And while he says most apple growers are using a variety of products to treat fire blight, he encourages those who have not tried biologicals to do so.

“Fire blight is the number one threat to apple trees that could put us out of business in no time. You can lose trees to the disease very quickly. You need biologicals to have choices,” he says.

Dave Slaybaugh
Mt. Ridge Farms



Codling moth and oriental fruit moth are primary insect pests the family battles in apples and peaches. Slaybaugh uses primarily Madex to control low populations, which is a biological insecticidal virus that does not harm beneficial insects, the environment or workers. He manages peachtree borer with pheromone sprays that disrupt mating and sprays DES-X insecticidal soap concentrate on tree foliage to deter destruction by the region’s significant deer population.

“You have to consider different modes of action to fight off all the pests, diseases and insects. When you change it up, you keep your options open,” he says. “Without biologicals, we would risk building resistance much more quickly like what is happening with traditional chemistry.”

The Slaybaughs continue to explore other management practices to enrich their profitability and sustainability. They evaluate new fruit varieties, irrigation and high-density plants, as well as looking at innovative labor-saving ideas and new technologies.

“We are willing to try fresh ideas as long as they are cost-effective and offer us sustainable advantages,” he says. “It is huge to be using biologicals in fruit production and we keep our ears open to hear about all of the future opportunities that will help us meet our goals.”

Biologicals Increasingly a Fit for Row Crop Farmers

Resistance management has become one of the critical practices row crop farmers must consider when selecting crop protection products every season. Biologicals expand that selection list.

“Row crop farmers face increasing challenges from resistant weeds and pests, and they are losing products to manage them. This is the perfect place for biologicals to step in,” says Holly Davis, entomologist and Certis Biologicals field development manager for the South-Central U.S. Davis is one of several new experts recently added to the Certis team to help traditional crop production farmers adopt biologicals into their existing farm management systems.

“I have been impressed with research that has gone into

biologicals and the response across the board in specialty crops, especially with the availability of so many unique modes of action,” she says. “Biologicals have proven efficacy and a wide range of products available for row crops.”

For example, Double Nickel biofungicide can be used at planting or as a foliar spray for disease control all season in such row crops as corn, soybeans, cotton and peanuts. MeloCon LC, is a bionematicide with a new liquid formulation that provides the same great control of plant parasitic nematodes with more convenience for growers.

Homeplate is an organic burndown herbicide that can be combined, rotated or used in place of glyphosate in a resistance management

program and can be tankmixed with conventional herbicides for better efficacy.

“You can’t count any crop out. There are many roles biologicals can play,” says Davis.

While the greatest advantage may be resistance management, Davis sees other opportunities. Biological insecticides protect beneficial insects while ridding fields of damaging pests. Keeping predators alive allows them to keep new pests in check and manage any rebound in treated pests.

“Biologicals protect the ecosystem and combine with existing Integrated Pest Management (IPM) programs,” she says. “They are generally safe products with low toxicity and minimal return entry intervals, and they can be used right up until harvest to help manage any late season pest problems.”

Holly Davis
Certis Biologicals



TESTIMONIAL

PEST CONTROL IS BACK AT THE BIOLOGICALS TABLE

As traditional chemistries used in specialty crops are taken away and others lose efficacy, growers and their consultants are turning back to biologicals for treatment options. And while Graham Burt-Papatone, Golden West Ag Services, says today's products aren't the same as those used in the 1960s, the concept of sustainable, safe food production is still the goal.

"It is harder and harder to control pests, and biological solutions fill that void," says Burt-Papatone, a consultant who provides management recommendations to conventional and organic growers in a 375 square-mile section of the San Joaquin Valley in California. "Growers are moving away from harsh chemistries like pyrethroids because they kill beneficial insects. Harmful residues in water runoff are also a constant and prevalent concern in the region."

Traditional chemistries can be a burden on an operation's economics as well.

"Last year, some growers sprayed for thrips up to five times in citrus and still did not get full control. The fruit was heavily damaged, resulting in diminished packouts," he says. "That is not economical or sustainable."

Predatory insects are key to battling some pests in citrus. Burt-Papatone advises growers to use

a parasitic wasp to battle California red scale. Native Gray ants and Argentine ants are the two primary ants that have a symbiotic relationship with soft scales and mealybug; feeding off the honeydew produced by the host and protecting them in exchange. Use *Anagyrus* wasps, a parasitoid, in conjunction with green lacewings, a general predator. Ants will attack and overwhelm beneficial beetles such as *Cryptolaemus* (mealybug destroyers) and *Vedalia* Beetles. In addition, he generally suggests *Seduce* for earwig control in both conventional and organic citrus. The *Spinosad* bait attracts and kills ants and earwigs when placed in tree wraps and is effective on red ants in almonds, too.

Other biological products, such as fungicides, can be incorporated into fruit management. Burt-Papatone recommends *Kocide* as the best copper fungicide for use in conventional olives to manage peacock spot and olive knot. He says it flows well and provides ease of use with its "caution" signal word.

"Growers soon won't have a choice. They will have to take a whole systems approach to integrated pest management to be sustainable," he says. "Growers want to see a payoff in their investment, and biologicals fit the performance profile and the budget."



Graham Burt-Papatone
Golden West
Ag Services

CASE STUDY

Regenerative Approach Smooths Pathway for Organic Production

Frank Olagaray began transitioning his specialty tree crop enterprise to organic some 20 years ago when he saw the lucrative premiums being offered for production. What he quickly learned was that the road to organics had multiple sustainability benefits beyond just the economics.

Olagaray operates Blossom Vineyards in Thornton, Calif., raising organic almonds, walnuts and olives, along with conventional wine grapes and sheep.

"Conventional almond, walnut and olive production all had pretty tight margins at the time," he says. "We were already using several organic crop protection products, so it was an easy choice to make the change. We are working toward becoming Regenerative Organic Certified."

Blossom Vineyards has made several innovative changes to meet those stringent guidelines. Olagaray is reducing tillage around his trees and hopes to eliminate it altogether someday as he adds more compost and cover crops to improve soil health and reduce pests.

"We spread compost made from yard waste and food waste. Keeping food waste from landfills helps the environment and using it on the farm feeds the soil and the soil microbes," he says. "Together with planting cover crops, we are improving the soil profile."

Olagaray also makes use of his sheep in his regenerative approach. Research has shown sheep urine can be used by microbes and manure fertilizes the orchard floor. He also places recycled almond and walnut shells down on the tree berms to protect areas where he cannot plant cover crops.

"The shells help shield the ground, which means we retain more moisture and get more oxygen moving into the ground so the microbes can flourish," he explains.

"The more you work with nature, the more nature works with you," Olagaray sums. "When you have healthy soil and plants, you have fewer pests to treat. That feels good. We successfully raise almonds, walnuts and olives organically, so we don't have to treat them synthetically."