

Agronomy Agent's Corner #12

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Our Aboveground Allies

Several organisms help protect aboveground growth of plants. Among them are predators of pests, parasitoids, lichens, and pollinators. Predators can be birds, spiders, or insects. Parasitoids are wasps. Lichens are symbiosis between algae or cyanobacteria and fungal hyphae. Pollinators are insects, bats, or birds.

Predation of pests reduces pest damage to crops. Lacewings and ladybeetles are the most frequently introduced predators to production fields. Mountain Bluebirds eat grasshoppers and many caterpillars. Black capped chickadees eat a wide range of insects. Although, seeing a black capped chickadee in a sunflower field is not good. They eat sunflower seeds as well. Brown thrashers eat grubs, wireworms, army worms, cutworms, grasshoppers, and other insects. (Cornell Ornithology Laboratory).

Parasitoids lay their eggs inside of a host. Upon hatching, the larvae feed on the inside of the host and emerge either after paralyzing the host or as an adult with a deceased host. Parasitoids have been successfully introduced in some areas to control stem boring insects. Parasitoids are present among wheat stem sawfly populations. But the parasitoid population has not grown fast enough to control sawflies.

Lichens are not individual organisms, but a close symbiotic relationship between fungi and cyanobacteria or algae. The benefit of having lichens on your windbreak trees is primarily as a biomarker. If lichens are not present now but show up in a few years one of three things has occurred. Relatively high rainfall has occurred over multiple years (Gauslaa and Solhaug, 1996). Air quality has improved by a reduction of nitrous oxide and sulfides (Lisowska, 2011). Or both have worked together. Another potential benefit is with nitrogen fixation. Lichens are known to fix nitrogen for their own use (Bates et. al., 2011). Whether they contribute nitrogen to tree growth is not as well understood.

Pollination can be assisted by many birds, bats, and insects. The best-known pollinator is the honeybee. Honeybees are one of two insects that are extensively domesticated for agricultural use. The other is the silkworm. Honeybees are beneficial to sunflower and other crop pollination including apples. To protect their declining populations avoid applying neonicotinoids during pollination.

Works Cited

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