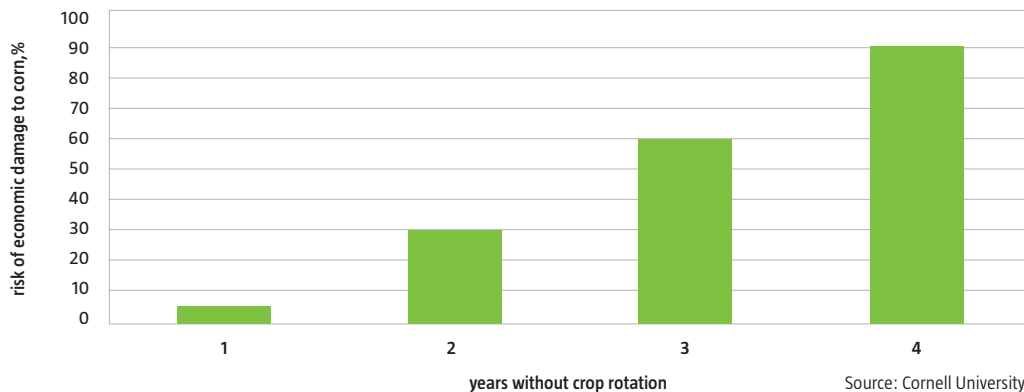


Getting to the root of the problem

Corn rootworm infestation



Persistent pests prompt crop protection innovations

Global demand for soft commodities continues to rise as supply remains constrained, often by natural events. The 2012 drought – the worst in a generation – slashed yields in the US and had a particularly strong impact on corn inventories, which fell to historic lows. Despite the meager harvest, last year US farmers earned record-high levels of net income because of high commodity prices and crop insurance. This year, strong demand, sustained commodity prices and a healthy balance sheet are once again encouraging farmers to increase investments in order to maximize crop outputs.

As in any record-setting environment, the greater the expected result, the greater the risk that obstacles may prevent its achievement. Beyond weather-related factors, agricultural setbacks take on a variety of forms. For instance, in particularly wet conditions – as in the Corn Belt lately – soil humidity increases the presence of yield-reducing fungi, leading farmers to respond by spraying higher quantities of fungicides. In the short-run, a temporary increase in the application of crop protection chemicals may benefit suppliers as it generates higher volume sales. However, the systematic increase in the quantity of crop protection chemicals used is by no means an effective long-term solution: over time, biodiversity responds by developing resistance to the chemicals applied, eventually rendering them ineffective. For example, weeds affecting corn and soy have been reported to survive the application of glyphosate, the most commonly used herbicide.

Pest resistance can have an even greater impact on yields than weed resistance. One such example is corn rootworm. Instead of becoming resistant to an applied chemical, pests have become immune to a seed modification originally introduced a few years ago to avoid the application of pesticides by making corn roots toxic to the rootworm.

Recently, however, high-pressure corn rootworm infestation has spread across the Corn Belt, particularly in areas where corn is planted without crop rotation for several years in a row – as is the case for roughly one-third of the current US planted acreage.

Resistance to pesticides and seed modifications opens up novel markets: demand for protection against corn rootworm is projected to grow at double-digit rates for the next few years, benefitting companies such as Syngenta, American Vanguard Corp. and FMC Corp. For instance, FMC has committed to launching up to 100 novel crop protection products by 2015, several of which directly target the rise of new cases of resistance in different crops and regions.

“The use of higher volumes of crop protection chemicals is merely a temporary solution: over time, the development of weed, fungi and pest resistance will always require innovative crop protection chemicals.”



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