

Help is on the way from Ridgetown College researchers to help the industry deal with the costly mycotoxins produced by fusarium fungi

Poor quality corn is the last thing Ontario pork producers need to deal with as they battle the new reality of the high Canadian dollar as well as higher feed prices and disease issues. But now researchers at the Ridgetown Campus are attempting to make it easier for farmers to identify poor quality corn before it gets to the feed bin.

Researcher Art Schaafsma explains that they are developing a set of tools which will help the industry deal with the various mycotoxins produced by fusarium fungi. These

producers. "Each sector says it is someone else's problem," Schaafsma says. He also points out that, since mycotoxins are for the most part a problem only in the Great Lakes area, mycotoxin resistance may have taken a backseat to advances in yield and quality. As well as advising growers to be careful when choosing hybrids, Schaafsma says that the researchers have developed a forecasting tool which helps growers identify fields that will be problematic based on weather conditions.

Tools to help pork producers deal with the scourge of myco

by KATE PROCTER

toxins cost the industry millions of dollars in reduced corn value, as well as reduced production.

A fusarium fungus produces a variety of different mycotoxins and is the same organism that causes head blight in wheat. The two most common mycotoxins, vomitoxin, also called deoxynivalenol (DON), and zearalenone, are considered indicators that there may also be other toxins present in a corn sample.

DON affects the gastro-intestinal tract and lowers feed consumption, which in turn reduces growth performance and, at low levels, can suppress the immune system. Zearalenone mimics estrogen and causes reproductive problems including abortions, prolonged heat, poor conception and swollen vulvas. It can also reduce sperm production and libido in young boars.

T-2 is another toxin produced by a different soil-borne fusarium fungus, and it is 10 times more toxic than DON. This becomes a more serious problem if harvest is late and the grain comes in contact with the soil under wet conditions.

While weather is the most important factor leading to mycotoxin problems, there is plenty of evidence that hybrids are the next most important factor. This has been known for the past 20 years, but it is difficult to develop a platform upon which this information is available to

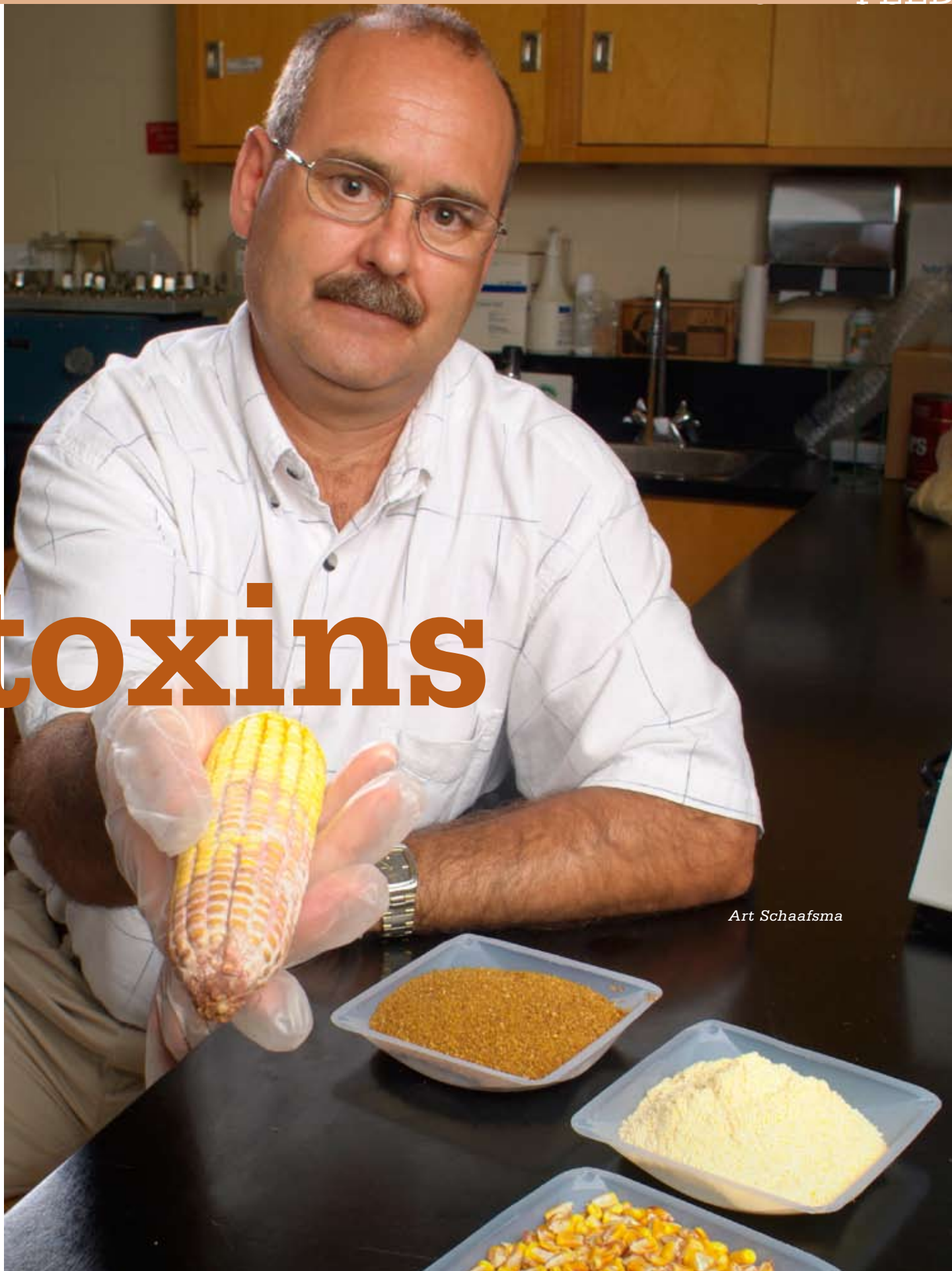
Mycotoxin problems arise if there is warm, rainy weather just after silking. The more rain days around silking, the greater the risk, explains Schaafsma. By the end of August, he has a pretty good idea of where the problem areas will be. If corn is clean then, a lot of rain in the fall is much less likely to cause a problem to develop, he says. However, if the fungi have started growing by August, a wet fall will make it worse.

"A forecast would give you a 'heads-up'," says Schaafsma, enabling producers to make informed decisions about which fields to keep and which fields to sell. A similar forecasting tool is already available to wheat growers, who have not raised the same resistance to its use. With corn, "it is very difficult to get support for this," says Schaafsma. The scientist also recommends that growers choose BT varieties because increased insect pressure opens the grain to fungal infection.

While mycotoxins do have an effect on ethanol production, the process can typically handle levels of about six parts per million. Beef cattle can use corn and its by-products with up to eight to 10 ppm. Because mycotoxins cause problems at such low levels in swine feed (0.5 to one ppm), Schaafsma stresses that pork producers need to incorporate these tools in order to enhance mycotoxin reduction.

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toxins



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