

Spring Aphid Control: What Will I Need This Year?

Dr. Doug Johnson - Extension Entomologist

We have finally had some winter. That's good. However, in anticipation of the coming warm season, we need to consider what effects the whole season thus far has had on aphid populations. Remember though, we must apply controls to aphids it is really the spread of Barley yellow dwarf viruses (BYDV) what we are trying to stop.

First, let's review the season so far. To get a clear picture, we must look back well before wheat was planted. Summer brought a severe drought. Though bad for crops, drought is also quite bad for aphids. This resulted in fewer aphids, arriving later in the wheat crop. That's good news. However, the fall was very warm and the first portion of the winter was very mild. That's bad news, as mild weather allows for continued reproduction and spread of the aphids leading to greater BYD incidence. This latter portion of the winter has been quite cold and perhaps as important, many areas have had little or no snow cover. Without snow, aphids suffer the full force of the cold temperatures. If you have had continuous snow cover, the aphids have been insulated from the worst of the cold. With that said, what do we do when the weather warms up?

Certainly, the cold winter weather of late has much reduced any aphid reproduction and spread. Additionally, we should expect that a large proportion of any aphid population was killed. We can expect that aphid populations might be very much reduced, but do not expect them to be gone all together. At this time of the season, there is only one management option available for control of aphids and thus BYD. That is a late winter spray.

To decide upon using a late winter spray, you will need to know if aphids are present and the wheats' growth stage. There is no substitute for going out to look. It's a simple process, but it is NOT easy. Crawling around on your hands and knees in the cold, leaves just a little to be desired! If the populations do not exceed the threshold (10 per row foot) or if the plants are in Feekes growth stage 4 or older, then it is unlikely that a spray will pay for itself. If the aphid populations are greater than 10 per row-foot and the plants are not past Feekes growth stage 4, then you have a chance of paying for the spray. As plant growth progress beyond this stage, the chance of a significant infection beginning is very small. By Feekes growth stage 6 any return on a spray is almost impossible.

You should understand however, that whether or not you make this late winter application, the results you see may have already been decided by what happened in the fall. For example, if you do not apply the late winter spray, you may still have BYD, and it will have nothing do with your decision not to spray in late winter. This is because the aphids could have been present in the fall and early winter and then disappeared because of the cold late winter. BYDV was spread while the aphids were present, but you will not see the symptoms until much later in the spring. Also, you may decide to spray and still have BYD. Though you may have reduced any chance of late winter/spring spread of BYDV, you will have done nothing about the earlier spread. It is very unlikely, however, that you will find aphids in the late winter if they were not present in the late fall and early winter.

As you evaluate your pesticide management decision this spring, make sure you understand all of the conditions that could have caused the result you see. With this disease complex it is very easy to draw the wrong conclusion on control based on the symptoms seen at the end of

the season. Wrong conclusions will result in, among other things, on-going miss-spending of crop protection dollars.

Winter Grain Mite

Dr. Doug Johnson - Extension Entomologist

You may recall that Dr. Townsend reported receiving winter grain mite reports back in January; (KPN #869 January 10, 2000). I have just viewed some wheat which was suspected of having aphids, but the wee beasties turned out to be winter grain mites. I suppose that is really good on two counts. One, winter grain mites cannot spread BYDV and two, they were all dead.

Very little is known about this pest. We usually do not have a problem in Kentucky probably because the preferred method of control is rotation with a non-grass host. Our typical rotation of corn - wheat - soybeans - fallow probably does a good job of prevention as is possible.

This mite has two generations per year. The first generally starts in September or October, and peaks in December or January. The second begins from eggs laid by the first and peaks in March or April. The second generation lays eggs that over-summer. These eggs will not hatch until the fall. Temperature and moisture are very important to this mite's survival. The mites are most active at temperatures between 40° and 70° F. They will generally be found near the base of the plant and under ground. On cool over cast days, the mites will feed higher on plants, but under hot and/or dry conditions they descend to the base of the plants and/or move under ground seeking moisture and temperature moderation.

Because of our spring temperatures rapidly reach 70° F and above, and our rotation practices include no grass plants, this pest is not likely to cause us much, if any problem. At present, probably the most important effect of seeing winter grain mites is not to mistake them for aphids. Mistaken identity could cause a producer to make an unnecessary application.

Scout for Weedy Grasses in Wheat

Dr. James R. Martin - Extension Weed Scientist

Wheat growers should be on the lookout for weedy grasses. The dry conditions this past fall has in many cases delayed emergence of weedy grasses; consequently, problem fields may have been overlooked.

Among some of the worst culprits include Italian ryegrass, also known as annual ryegrass, cheat, hairy chess, downy brome, field brome, little barley and annual bluegrass. These grasses are considered annuals or cool-season annuals that normally emerge in the fall and mature the following spring or early summer. The growth of some brome species (particularly field brome) is extended well into the summer months.

Correct identification will be important in planning a management strategy. Unlike most weedy grasses, Italian ryegrass has auricles or claw-like structures that clasp around the stem near the base of the leaf blade. Its leaves and stems do not have hairs and tend to be glossy. Hairy chess, downy brome, and field brome have hairs on leaf sheaths while cheat lacks hairs. Little barley can often be identified by digging plants and checking around the roots for seed with numerous awns. Annual bluegrass grows in tufts and has boat-shaped leaf tips. Some of these key characteristics are illustrated in Figure 1.

Italian ryegrass occurs more frequently in Kentucky compared with the other species in this group. This may be good news since Italian ryegrass tends to be controlled more easily than the other species. A timely postemergence application of Hoelon can control Italian ryegrass, but will not control other weedy grasses that often occur in wheat in Kentucky. Achieve is a relative new postemergence wheat herbicide registered for controlling ryegrass. Limited research indicates that Achieve provides control similar that obtained with Hoelon.

In order to achieve maximum control of Italian ryegrass, treatments should be made before plants overwinter and tiller. The fact that ryegrass emergence has been somewhat delayed this season will be beneficial where problem fields have not yet been monitored and treated. However, because of recent warm temperatures in Kentucky, ryegrass plants may have grown beyond the size recommended for optimum control. The maximum growth stage of ryegrass is 5 leaves to 2 tillers for Hoelon and 4 leaves (total leaves including tillers) for Achieve.

In order to minimize the risk of crop injury, check the weather forecast to help plan when to spray. Avoid spraying when cold temperatures (usually less than 35 to 40^o F) are predicted a few days before and after application.

Sencor is registered for suppression of such weedy grasses as cheat, downy brome, little barley, and annual bluegrass. It should be applied before these species exceed the 2-leaf stage in order to achieve maximum weed suppression. Treatments must be used only where wheat varieties are tolerant to Sencor.

Consult the product label for specific information on herbicide rates and timing of application as well as precautions.