

## SPECIAL ISSUE:

# The WheatTech Watchglass

*Wheat Management Tips from Chris Bowley - WheatTech Inc.*

## Fall Insect and Weed Control Thoughts

### I. INSECT CONTROL

Barley Yellow Dwarf Virus (BYDV) has been shown to be a major yield reducing factor in the Southeast and Midwest. Generally BYDV is worse in the Southeast than in the Midwest and declines in severity as you get further north in OH, IL, IN, and MI. BYDV is transmitted by a number of common aphid species: the bird-cherry oat aphid, English grain aphid, greenbug, and the corn leaf aphid.



**Winged adult oat bird cherry aphid plus four immature young**



**Stunting caused by fall BYDV infection**

The most common aphid species are the oat bird cherry aphid and the English grain aphid. Usually, fall and early spring populations are predominantly bird-cherry oat aphids. By mid-March, the English grain aphid numbers start to increase rapidly and, by head emergence, is the most common species. In theory, it is important to know which aphid species and which strains of BYDV are present; however, in practice, it is not feasible to differentiate accurately between aphid species and whether they are carriers of BYDV. We must, therefore, assume that all aphids are potentially capable of causing significant yield loss.

Typical fall symptoms appear as small, 2-3 foot round spots in the field due to the migration out from a central point. The wheat is generally 4-6 inches shorter with yellow tips to the leaves. Stunting and yield loss is severe when infection occurs very early in the fall.

BYDV levels will vary according to aphid populations and the level of BYDV that the aphids carry, which varies between seasons. Wheat Tech has conducted plots in KY, TN, MO, IL, and IN, and we have shown yield decreases of 2.5-36+ bu/acre caused by BYDV. Our average response to a well timed fall + spring spray of insecticide is 14.96 bu/acre over the last 13 years in KY.

**I. INSECT CONTROL (CONT.)**

Accurate and timely scouting for aphids is essential to make efficient decisions about controlling BYDV. When scouting, look at the earliest planted fields first, paying particular attention to small fields adjacent to grass and wooded areas. Look at 5-10 spots in a field counting the number of aphids/ft of row. Aphids will quite often be present in the whorl or on the underside of the lower wheat leaves. Scouting should begin at the 4-5 leaf stage and continue until winter dormancy. The threshold level we are currently using is 5-10 aphids per foot of row. If this population is reached, consider spraying with either Warrior at 2.56 oz/A or Mustang max at 3.2oz/acre.

Wheat emerged erratically in many areas due to dry conditions - this is especially true of southern KY, southern IL, and Michigan. Aphid numbers are, however, on the rise in all regions with several fields drilled the end of September (N. IN, N. OH) and early October (southern KY and TN), already at threshold levels. As you head towards later planting dates and southern regions of OH, IL, and IN numbers are lower but I have had reports of winged aphids being found across all of these areas especially if wheat was drilled at the fly date or earlier. It is still way too early to be out of the woods and wheat needs to be monitored closely for at least another 2-3 weeks in northern regions and 4-5 weeks for southern regions.

**II. WEED CONTROL**

Many different types of both broadleaf and grass weeds can be found in wheat fields. Broadleaf weeds, though more common, generally do not cause the severe yield losses associated with grass weeds. Yield losses from broadleaves usually range from 0-15% compared to 0-60% for grass weeds. Fortunately, few areas have severe grass weed problems.

**BROADLEAF WEED CONTROL**

Wheat drilled close to the fly date or before, while soil temperatures are still very warm, will often have several different winter annuals emerging in the fall. Broadleaf weeds compete with the developing wheat plant for nutrients, water, sunlight, and space. The majority of problem broadleaf weeds emerge in the fall with the exception of giant ragweeds, thistles, Garlic, and star of Bethlehem. Controlling weeds in the fall is generally cheaper, more effective, and causes less crop injury.

Scouting is the key to successful weed control. Start scouting fields about 2-3 weeks after emergence, especially in no-till fields that did not receive a burn-down, as chickweed and henbit will start to emerge at the same time as the wheat.

Currently weed emergence is erratic and will make fall spraying of weeds difficult. Emergence problems cause two issues: lack of consistent weed emergence and crop safety issues on late-emerging wheat. As a result of this, only treat fields where weed and wheat emergence is good. Make sure 80-90% of the wheat is at least at the 1-2 leaf stage which is safe for most herbicides. If you are in doubt about the weed emergence or the size of the wheat wait until spring. The last thing you want to do at this time of the year is stunt small late-emerging wheat. This will result in poor growth going into winter dormancy which can affect winter survival and yield potential. Remember, grass weed control is the most important.

**Factors Influencing Fall Broadleaf Control**

Reasons NOT to Make a Fall Application	Reasons to Consider a Fall Application
History of garlic or star of Bethlehem	High weed pressure, especially no till
History of giant ragweed or thistle	Plans to over-seed with clover in the spring
History of catchweed bedstraw	No garlic, thistle, star of Bethlehem or Giant Ragweed problems expected
Little weed pressure	Weeds are fully emerged
Weeds not emerged	Cheat, Ryegrass, Bluegrass or Carolina foxtail problems
	Difficult to control weeds are present such as canola, speedwell, cornflower, or vetch

While scouting, look for weed species present, weed size (are any still emerging?), and if weeds are actively growing. Scouting patterns should be determined to cover all major sections of the field. Usually a saw blade shaped zig-zag pattern works well which encompasses the majority of the field - special care should be taken to look at all end rows.



**Heavy Seedling Chickweed Pressure**



**Henbit Dead Nettle**



**Treacle Mustard**



**I. WEED CONTROL (CONT.)**

If a fall herbicide application can be justified, make sure all weeds are emerged and actively growing. Watch the weather forecast to ensure 4-5 days of reasonable temperatures (over 50°F during day, over 30°F at night) following the application. Very low temperatures immediately after application can cause crop damage and poor weed control. Herbicide selection and rate of application will depend on weed species and size.

As a rule, Harmony Extra alone works best in situations with large chickweed, mustards, and perennial weeds with little or no henbit. A good compromise for general weed control is to tank mix Harmony Extra and Sencor together varying the rates according to the weed type, size, and population. Harmony Extra 0.25 oz + Sencor 1.25 oz is very effective on a large selection of weeds (watch variety tolerance). If large weeds are present in a no-till situation, Harmony Extra at 0.3 oz plus Sencor at 1.25-2 oz may be needed for satisfactory control of weeds up to 3-5 inches in diameter. Peak can be used in place of Harmony Extra if you do not intend to double-crop with soybeans. Listed below are some possible options for fall weed control:

WEED SPECIES	HARMONY EXTRA* 0.25 OZ	HARMONY EXTRA* 0.33OZ	HARMONY 0.25OZ + SENCOR*** 1.25 OZ
chickweed species	S**	S	S
henbit	MS	S	S
red dead nettle	MS	S	S
pennycress	S	S	S
treacle mustard	S	S	S
vetch	MS	MS	MS
cutleaf groundsel	S****	S****	S****
catchweed bedstraw	MR	MS	MS
ivy leaf speedwell	R	MR	MS
garlic	SPRING	SPRING	SPRING
giant ragweed	SPRING	SPRING	SPRING
Star of Bethlehem	SPRING	SPRING	SPRING
Thistles	SPRING	SPRING	SPRING

S = susceptible MS = moderately susceptible R = resistant MR = moderately resistant  
 SPRING = fall applications will not successfully control these weeds. All ratings based on WheatTech experience.

\*Harmony Extra alone or in combinations always requires an 80% non ionic surfactant. When used alone 1.5-2pints/100 gallons of water should be used, but when tank mixed with Sencor rates can be reduced to ½-1pint/100 gallons of water to reduce burn

\*\*Susceptibility ratings based on seedling plants 1-2” in size. Larger or less actively growing weeds may require higher rates. **Always Refer to the Manufacturers Label for Specific Use Information.**

\*\*\* Always check that your variety is tolerant to Sencor and that the wheat has at least 1 small tiller prior to application. Be especially careful on sandy or gravelly soil types with low organic matter.

\*\*\*\* Cutleaf groundsel seems to be resistant to SU chemistry in some areas making Harmony Extra control erratic.

**I. WEED CONTROL (CONT.)**

Aim, Buctril, and several other herbicides can also be used for specific weed problems but generally are not effective on the majority of common broadleaf weeds we run into. For best results, weeds should be sprayed when small and actively growing. If possible, time herbicide applications to include an insecticide. Accurate timing of insecticides is more critical; therefore, time the application for the best aphid control. Sencor and Harmony Extra can be tank mixed with Warrior or Mustang Max.

**GRASS WEED CONTROL**

Grass weeds such as ryegrass and Cheat can greatly reduce yield if left uncontrolled. Major grass weed problems often occur in fields that have been in pasture, CRP, or set a side programs. Often ryegrass is introduced into the field when fescue is used to sow waterways or by using contaminated seed. Ryegrass is very competitive and is easily spread by combines and tillage tools.

**Well-tillered Ryegrass**

Ryegrass is a severe problem in certain areas of KY, MO, TN, and small sections of southern IL and southern IN. Fortunately, Osprey is a new and effective control if properly timed. There are other options including Hoelon and Achieve, but due to the increase in resistant ryegrass, Osprey appears to be our number one choice. The best time to apply Osprey is in the fall after the ryegrass has emerged, but before it gets too big. The application should be made before the largest ryegrass reaches the 2-3 tiller stage but after the smallest has reached the 1-2 leaf stage, and before the onset of severe weather.

Use Osprey at 4.75oz/acre + Induce at 2 quarts/100 gallons + 2 quarts 28%UAN per acre (2-3lbs/acre spray grade AMS can be substituted for 28%)

\* Make sure you use the correct surfactants as substitution with non-approved surfactants can result in significant loss of ryegrass control.

Osprey can be used fall or spring as a post material after all ryegrass is emerged but prior to the 2 tiller stage in the fall and will offer good suppression of much larger ryegrass both fall and spring. For best results, use in the fall as spring applications should be considered rescue only.



### **I. WEED CONTROL** (CONT.)

There are several other grass weed problems you may run into including Cheat (or other brome species), Carolina foxtail, and annual bluegrass. All grass weeds are better controlled in the fall, and the best timing is usually from 1-2 leaf up to early tillering. Cheat problems usually occur in areas with poor crop rotation such as following CRP or wheat/beans followed by wheat/beans. You will also see problems in sandy regions without irrigation where little corn is grown. Carolina Foxtail and Bluegrass are starting to become a real problem in southern IL, southern IN, MO, and TN. Often you will find heavy populations of both in the same field. These grasses are what I term "nuisance" grasses which do not dramatically affect yields but can reduce yields 5-10 bu per acre and can be found in the majority of fields in these problem areas.

#### **For Cheat (brome) control options include the following:**

Maverick 0.66oz/acre + 2quarts Induce/100 gallons

**OR**

Olympus 0.6-0.9oz/acre + 2 quarts Induce/100 gallons + 2 quarts 28% UAN/acre  
(Timing should be 2leaf – 1tiller cheat)

#### **For Bluegrass and Carolina Foxtail control options include the following:**

Osprey 4.75oz/acre + Induce at 2 quarts/100 gallons + 2 quarts 28%UAN/acre \*  
(2-3 lbs/acre spray grade AMS can be substituted for 28%)

**OR**

Olympus Flex\*\* 3.0oz/acre + Induce at 2 quarts/100 gallons + 2 quarts 28%UAN/acre \*  
(2-3lbs/acre spray grade AMS can be substituted for 28%)  
(Timing for both products should be 2-leaf to -tiller grass)

\*Make sure you use the correct surfactants as substitution with non-approved surfactants can result in significant loss of ryegrass control

\*\* Olmpus Flex only has a label in IL and MO at the current time.

Sencor can also be used for controlling both of these grass weeds at 2-4 oz rates depending on soil types and variety tolerance. **This is a very difficult product to use because of timing, soil type, and variety issues so read and follow all label directions closely.**

We are also conducting trials to look at tank mixtures of reduced rates of many of these products to try to minimize the costs involved.