UNIVERSITY OF KENTUCKY
COLLEGE OF AGRICULTURE
Lexington, Kentucky 40546-0091

COOPERATIVE EXTENSION SERVICE
Research & Education Center, Princeton, KY 42445

UNIVERSITY OF KENTUCKY WHEAT SCIENCE NEWS

Volume 6, Issue 1 January 2002

HERBICIDE COMPARISONS ON CORNFLOWER (*CENTAUREA CYANUS*) CONTROL IN WHEAT

James R. Martin, Extension Weed Control Specialist

Inside This Issue:

- Herbicide Comparisons on Cornflower Control in Wheat
- Are Insect Pests In Your Future?
- Early Nitrogen Application
- Status of the Wheat Crop in Ky

Mark You Calendars

Illinois Wheat Forum
February 26, 2002
8:30 am—3 pm (CST)
Holiday Inn
Mt. Vernon, IL
For More Information,
Contact Bob Frank
618-687-1867

INTRODUCTION: Previous studies have shown that Buctril (bromoxynil) is more effective than certain other herbicides in controlling cornflower in wheat. However, Buctril does not effectively control such weeds as common chickweed, henbit, purple deadnettle, vetch spp., and wild garlic. Combining Buctril with other herbicides could help control more weed species with a single application in fields where cornflower and other problem weeds occur. It is not clear if such combinations would allow growers to reduce the rate of Buctril or control larger cornflower plants compared with Buctril alone.

OBJECTIVE: Field trial studies were conducted on Bill Balance's farm in Warren County to evaluate cornflower control in wheat following fall and spring applications of Buctril applied alone and in combination with Clarity (dicamba) or Harmony Extra (premix of thifensulfuron plu tribenuron).

METHODS: Buctril was applied at 1.5 alone and in combination with Clarity 4S at 4 oz/A or with Harmony Extra 75DF at 0.5 oz/A plus nonionic surfactant at 0.25% v/v at three different times. Buctril was also applied alone at 2 pt/A at three different times.

Herbicides were applied with a CO2 back-pack sprayer in a spray volume of 20 GPA. Treatments replicated 3 times using a randomized complete block design. Plot size was 10 ft wide by 30 ft long.

Visual ratings of wheat injury and cornflower control were made on March 29, April 10, and June 1, 2001. Ratings were based on a scale of 0 to 100 with 0 = no injury or control and 100 = complete death.

RESULTS: The 2 pt/A rate of Buctril tended to be more consistent in controlling cornflower than the 1.5 pt/A rate, especially when applications were delayed until early– to mid–March (Tabale 1). The June evaluations indicated that the fall treatment of Buctril at 1.5 pt/A provided 97%

Educational programs of the Kentucky Cooperative Extension Service serve all people regardless of race, color, age, sex, religion,disability, or national origin
UNIVERSITY OF KENTUCKY, KENTUCKY STATE UNIVERSITY, U. S. DEPARTMENT OF AGRICULTURE, AND KENTUCKY COUNTIES, COOPERATING

control of cornflower. However, this low rate of Buctril applied in mid-March provided only 73% cornflower control.

Based on ratings made in June, Clarity mixed with Buctril tended to improve control of cornflower compared with Buctril alone at 1.5 pt/A and was comparable to the level of control achieved with Buctril at 2 pt/A. The ratings in early March indicated that some cornflower plants were stunted and still surviving following this mixture, but by June these plants appeared to be completely controlled. Wheat was injured by including Clarity with Buctril, however, only 3% injury was observed by June.

The use of Harmony Extra with Buctril often improved control of cornflower compared to Buctril alone at 1.5 pt/A (with the exception of June rating for the fall application). The level of control observed with this mixture in the June rating was equal to that observed with Buctril at 2 pt/A. Wheat injury also occurred with the Harmony plus Buctril combination, although injury did not exceed 3% by June.

SUMMARY/CONCLUSIONS: The results of this study showed that Buctril at the rate of 2 pt/A was consistent in controlling cornflower; however, the 1.5 pt/A rate tended to be less effective when applications were delayed until spring. Including Clarity or Harmony Extra with Buctril at 1.5 pt/A helps improve cornflower control with the spring applications. These tank mixtures appeared to cause wheat injury, yet injury did not appear to be significant near the end of the season.

Acknowledgements: Appreciation is expressed to Mike Bullock, Luther Smith, and Bill Balance for their assistance with this research.

Table 1. CORNFLOWER CONTROL IN WHEAT FOLLOWING SPRING AND FALL APPLICATIONS OF BUCTRIL WITH CLARITY OR HARMONY EXTRA. (Warren Co. 2000-2001)

Chemicals	Timing[1]	Wheat injury %			Cornflower Control %		
		3/29/01	4/10/01	6/1/01	3/29/01	4/10/01	6/1/01
Buctril 2 EC 1.5 pt/A	Fall	0	0	0	90	97	97
Buctril 2 EC 2 pt/A		0	0	0	90	100	97
Buctril 2 EC 1.5 pt/A Clarity 4 S 4 oz/A		0	0	0	100	100	100
Buctril 2 EC 1.5 pt/A Harmony Extra 0.5 oz/A Surfactant 0.25%v/v		0	0	0	100	100	87
Buctril 2 EC 1.5 pt/A	Spr 1	0	0	0	83	100	93
Buctril 2 EC 2 pt/A		0	0	0	96	100	100
Buctril 2 EC 1.5 pt/A Clarity 4 S 4 oz/A		10	13	3	90	100	100
Buctril 2 EC 1.5 pt/A Harmony Extra 0.5 oz/A Surfactant 0.25		0	3	0	93	100	100
Buctril 2 EC 1.5 pt/A	Spr 2	0	0	0	70	80	73
Buctril 2 EC 2 pt/A		3	0	3	90	97	100
Buctril 2 EC 1.5 pt/A Clarity 4 S 4 oz/A		7	13	3	83	90	100
Buctril 2 EC 1.5 pt/A Harmony Extra 0.5 oz/A Surfactant 0.25		10	7	3	83	100	100
Non treated check		0	0	0	0	0	0
LSD (0.05)		3	8	5	12	10	6

[1] Timing of application: Fall = 12/03/00, Spr = 3/2/01, Spr 2 = 3/13/01.

ARE INSECT PESTS IN YOUR FUTURE?

Doug Johnson, Extension Entomologist

Two big questions have surfaced over the last month concerning wheat insect pests. First, will we have armyworms again this year? Second, I am seeing a lot of aphids what should I do? Let's take a look one at a time.

First, if I could predict an armyworm outbreak now, I would not be working for the University! I would be selling you a high priced newsletter written from under a palm tree in a warm sunny place. I can tell you without doubt, that there will be armyworms in Kentucky this year. That's a safe bet because we always have them. However, whether or not they will appear in outbreak proportions is problematic. As with all years, the best most cost effective management tool is to watch for their presence, then control them if needed. Using a preemptive insecticide application will likely be a waste of money. In most years, controlling armyworms is a money losing proposition. Additionally, controlling them once found is quite easy. They are not a particularly difficult pest to control.

Seeing aphids this time of year is not a pleasant thought, for without doubt they have been here since the fall. Hopefully, not in large numbers and not moving around much. Certainly, it is the fall aphid / virus activity that is most important. However, when the winter and spring are warm and large numbers of aphids are present, our plots have usually shown that a late winter (green up?) application will pay for itself. However, you must remember - First, if the aphids have been here all winter they may have already spread BYDV, so you may get control of the aphids and still have BYD. Second, as long as the weather is cold, do not get in too big a hurry to get the insecticide application out. If you are going over the field with say, liquid N and plan on putting in an insecticide then that is one thing, and probably one of the most cost effective because it saves the application cost. However, if you are making a special trip over the field, then wait until the weather is more favorable to the insecticide e.g. about 50° F or better. When the temperatures are in the low 40's both the aphids and the insecticides are going to act pretty slow.

Because of the complex nature of this insect - virus - wheat interaction, there is never a guarantee of success with making or withholding an application. Your best chance is to use the information you have at hand and make a decision. Don't do something or nothing blindly.

EARLY NITROGEN APPLICATION

Lloyd Murdock, Extension Soils Specialist

It is time for the early application of nitrogen. Nitrogen applied in mid February should usually be in the range of 30 to 50 pounds per acre and should be paired with another application in March. Nitrogen applied in February encourages further tillering and maintains current tillers. Fields with thin stands or little fall tillering should receive the higher amounts of February nitrogen, while those with high tiller counts (above 70 tillers per square foot) should receive the lower amount of nitrogen. Excessive nitrogen applied in February can increase the potential for lodging, diseases and damage from late spring freezes.

With the amount of rain we have had since planting (see table), one might ask if a higher rate of nitrogen is needed. In general, I think the answer is no, but there are probably a few fields that do.

As seen in the table, the amount of rainfall received since planting is not greatly above normal except at Henderson and Princeton. This shows that for much of Kentucky rainfall is near normal, but there are some locations with excessive rainfall during this period. In these areas of high rainfall there may be fields that have lost more nitrogen than normal and are showing a pale appearance. In these fields tiller counts could be reduced if nitrogen is not applied soon and at the high end of the recommended range. In many of these fields, the tiller count is adequate and the nitrogen is to prevent tiller loss.

In much of Kentucky, the wheat is tillered adequately (2 to 4 tillers per plant) and it is greening normally. For these fields, the February application should be in the 30 to 40 pounds per acre range.

Rainfall at Several Locations in Kentucky From Nov. 1, 2001 to Feb. 4, 2002

Location	Rainfall (inches)	
	Total	Departure From Normal
Bardstown	12.86	+2.06
Bowling Green	13.92	+0.46
Henderson	16.41	+4.98
Mayfield	16.36	+1.43
Princeton	20.14	+5.25

STATUS OF THE WHEAT CROP IN KENTUCKY

Jim Herbek, Extension Grain Crops Specialist
Gerald Claywell, Agronomy Research Specialist

Informational requests were sent to County Agricultural Extension Agents and Wheat Crop Advisors in the wheat growing regions of Kentucky to assess the current condition of the wheat crop. There was some variability in responses regarding the condition of the wheat crop, which is to be expected considering the different growing regions, soil types, weather/ growing season, and planting dates.

The majority of the responses indicated the overall condition of the wheat was good. This is better than would be expected considering that: a sizeable portion of the wheat was not seeded at the optimum time; the growing season has been somewhat erratic (good and bad); and top growth going into late fall/winter was mostly average. Some wheat was also rated as fair (wetter soils; late plantings) and some excellent (early planted).

Wheat seeding got off to a good start as 27% of the acreage was completed as of October 14th. However, planting progress rapidly declined as excessive rain (3-5 inches) was received at most locations over a 4-5 day period in mid-October. As of October 21st, only 33% of the wheat acreage was seeded which was greatly behind last year and the 5-year average of ~60%. Seeded acreage was only 62% complete as of Oct. 28th (compared to a 5-year average of 73%). Thus, approximately one-third of the acreage was seeded late (early to mid-November).

The Kentucky Agricultural Statistics Service reported the winter wheat acreage seeded in the fall of 2001 for the 2002 crop was unchanged from the previous year at 550,000 acres.

November precipitation was above normal (+2 to 3 inches at most locations). However, this is somewhat misleading regarding wheat condition and growth. The majority of the rain (4-7 inches) was received in the last 5-6 days of November which resulted in most of November being dry. In fact, there was a 40-45 day period from mid-October to late November when rainfall was sparse (<1 to 1 ¼ inches) at almost all locations. This hampered early wheat growth and development until sufficient rain was received in late November. Normally, with colder temperatures in late Fall and Winter, wheat growth would have remained below average. However, the warm temperatures that occurred have helped growth. Weather stations recorded above normal temperatures for November (+4 to 6° F), December (+4 to 6° F), and January (+5 to 7° F). The mild fall and winter allowed wheat growth to catch up and also allowed adequate tillering to occur. This was particularly beneficial to the late planted wheat. The majority of the reports indicated the wheat crop currently has average (adequate) tillering with above average tillering in wheat that has excellent growth.

All reports indicated that stands overall were good. Although growth may have been slowed, apparently germination and emergence was very good. Almost all reports indicated there has been little, if any, winter damage to the wheat crop at this point. This is not surprising with the mild winter that has occurred. There have not been any extremely cold temperatures for any extended periods. The only cold period that has occurred was for 4 or 5 days in late December and early January. However, we still have at least one month of winter left with the potential for winter damage.

Recent rains and saturated soil conditions have not been beneficial to wheat growth on wetter type soils. Also plant damage may have occurred in lower areas where water has stood and soils have been extremely saturated.

A main concern at this point is the potential for spring freeze injury to occur. The warm temperatures the last 2-3 months and mild winter have resulted in needed growth. However, if these warm temperatures continue, they will result in excessive plant growth putting the plants at a susceptible growth stage where a spring freeze could seriously damage the wheat crop. Cooler temperatures are needed in the next few weeks to slow the rapid growth taking place to avoid the potential for spring freeze injury.

Comments received from those that responded to our request for information on the wheat crop were:

1) "Plenty of aphids if it wasn't fall sprayed." --- (Curt Judy, Todd Co.)
2) "Wheat looks poor on our fragipan soils, which is typical. Should recover with warm, dryer weather."--- (Greg Henson, McLean Co.)
3) "Things look good here. The good weather in December allowed the November seeded wheat to progress well. Many fields were sprayed for aphids early in the fall."--- (Wayne Mattingly, Daviess Co.)
4) "No-till wheat really looks good. Only problem areas are lower, wet areas with too much water."---(Tom Miller, Ballard Co.)
5) "Some wheat seeded late; cold weather may have thinned it out some. Wet weather has not seemed to hurt wheat bad. Wheat seems in good condition. Not many aphids seen this year."---(Gail Doron, Southern States of Murray)

6) "The wheat generally looks good. The warm fall weather allowed good growth and tillering. At this stage the plants have 2 to 4 good tillers. As soon as nitrogen is added to the crop, it is in position to begin good growth."---(Richard Baylis, Miles Opti-Crop)
7) "Wheat in Logan County on the whole is looking good. Some of the early maturing and early planted varieties are getting somewhat on the large size to cause some concern. Any wheat not treated with an insecticide this fall generally has a high level of aphids. All in all the wheat in Southern Ky is looking good. We just need a little bit of winter in the next six weeks to keep the wheat where it needs to be."---(Guy Reader, Miles Opti-Crop)
8) "It's fair to say that this year's wheat crop is in better condition than it should be. Most wheat was planted after our target date, but mild weather has allowed the wheat to put on a sufficient number of tillers. Too many fields were planted with less than satisfactory seedbeds, but nearly every seed germinated and the wheat has filled in nicely. There are some concerns that the crop has yet to overcome: Most fields that have yet to receive an insecticide are harboring above threshold levels of aphids. Few fields received fall herbicide applications which can be a problem where difficult to control weeds are present."---(Scott Jones, Wheat Tech, Inc.)

We extend our appreciation and thanks to the following who supplied us with information and comments concerning the wheat crop: County Agricultural Extension Agents (Greg Henson, Curt Judy, Wayne Mattingly, and Tom Miller) and Wheat Crop Advisors (Gail Doron, Richard Baylis, Guy Reader, and Scott Jones).

For More Information, Contact:

Dottie Call, Wheat Group Coordinator
UK Research and Education Center
P.O. Box 469, Princeton, KY 42445

Telephone: 270/365-7541 Ext. 234

E-mail: dcall@.uky.edu

Visit our Website:
http://www.ca.uky.edu/ukrec/welcome2.htm

Lloyd W. Murdock, Extension Soils Specialist

Educational programs of the Kentucky Cooperative Service serve all people regardless of race, color, age, sex, religion, handicap, or national origin.
UNIVERSITY OF KENTUCKY, KENTUCKY STATE UNIVERSITY, U.S. DEPARTMENT OF AGRICULTURE, AND KENTUCKY COUNTIES,

Cooperative Extension Service
U.S. Department of Agriculture
University of Kentucky
College of Agriculture
Lexington, KY 40546-0091

AN EQUAL OPPORTUNITY EMPLOYER