

WHEAT TOLERANCE TO CLARITY AND SENCOR

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OBJECTIVE:

The objective of this research was to compare and evaluate the impact of fall and spring applications of Clarity and Sencor on wheat.

METHODS:

Pioneer 2552 was planted October 12, 1999 on the Henry Sanger farm in Fulton County. Previous research indicates that this wheat variety is tolerant to metribuzin.

Sencor and Clarity were applied with a CO₂ back-pack sprayer in a spray volume of 26 GPA overtop wheat in three different growth stages: Feekes 1 on 11/16/99; Feekes 2 on 11/30/99, and Feekes 5 on 3/8/00. The herbicide rates varied depending on wheat growth stage.

Plots were 4 ft wide and 15 ft long. Treatments were replicated 4 times using a randomized complete block design. Injury evaluations were based on visual ratings made on November 30, Dec. 30, Feb. 7, March 8, and April 19. Plots were harvested June 12 and yield and test weight were determined. Visual ratings of wheat injury and yield data are presented in Table 1.

RESULTS AND DISCUSSION:

The level of crop injury was relatively low and difficult to detect. Clarity tended to cause slight stunting, whereas, Sencor caused slight discoloration and stunting.

Although some early season injury occurred with Clarity applied at Feekes 1 and Feekes 2, the level of injury did not exceed 13 % and gradually decreased over time. No injury was observed when Clarity was applied at 4 oz/A to wheat in Feekes 5.

Wheat treated at Feekes 1 with Sencor at 2 and 4 oz/A did not show injury symptoms initially; however, slight injury was observed by the second rating. Applying Sencor at 8 oz/A to wheat in Feekes 1 resulted in 20% injury, which was the greatest level reported throughout the experiment. Very little injury was observed when Sencor was applied at 8 oz/A to wheat in Feekes 5.

The slight amount of injury that occurred with Clarity or Sencor did not appear to affect test weight or yield of wheat. Since weed density was low in all plots, it is unlikely that wheat yields were affected by weed competition

CONCLUSIONS:

There is increasing interest in applying herbicides in the fall when weeds are relatively small and easily controlled. Some growers are concerned that herbicides such as Clarity or Sencor may cause crop injury if they are applied to wheat that is not well established.

Over the course of several years, herbicide labels have been revised to address early-season applications. Clarity at rates of 2 to 4 oz/A is registered for applications made before, during, or after planting but before jointing stage. The rate structure for Sencor depends on a number of factors including soil organic matter, texture, and growth stage of wheat. The rates for Sencor DF for medium texture soils with 0.75 to 2 % organic matter are: 1 to 3 oz/A for 2 leaf to 2 -tillered wheat; 3 to 4 oz/A for 3-tillered wheat; 4 to 5 oz/A for 4-tillered wheat; and 4 to 8 oz/A after plants have more than 4-tillers but before jointing.

Based on the results of this study, the risk of injury tended to be greatest when Clarity or Sencor was applied at high rates to young seedlings. Although the 4 and 8 oz/A rates of Sencor DF exceed the label rates for Feekes 1 stage, the level of injury did not exceed 20 % and did not reduce grain yield. The favorable growing conditions that occurred through the course of this experiment appeared to allow plants to outgrow injury over time with no negative affect on yield or test weight of wheat.

TABLE 1. THE EFFECT OF RATE AND TIMING OF APPLICATION OF CLARITY AND SENCOR ON PIONEER 2552 WHEAT. (FULTON CO. 1999-2000)

Herbicide (Rate) ¹	Wheat Growth Stage ²	Wheat Injury (%) ³					Test Wt (Lb/Bu)	Yield (Bu/A)
		11/30/99	12/30/99	2/7/00	3/8/00	4/19/00		
Clarity 2 oz/A	Feekes 1	6	10	8	5	5	59.9	74.2
Clarity 4 oz/A	Feekes 1	13	13	13	8	5	59.2	74.5
Clarity 4 oz/A	Feekes 2	-	8	5	0	3	60.3	73.2
Clarity 4 oz/A	Feekes 5	-	-	-	-	0	59.6	72.8
Sencor 2 oz/A	Feekes 1	0	8	5	3	5	59.7	75.6
Sencor 4 oz/A	Feekes 1	3	10	13	8	8	59.6	75.6
Sencor 8 oz/A	Feekes 1	15	20	10	5	1	59.5	74.4
Sencor 8 oz/A	Feekes 2	-	18	13	3	0	59.2	73.5
Sencor 8 oz/A	Feekes 5	-	-	-	-	5	59.2	73.3
Non-treated Check		0	0	0	0	0	59.2	74.1
LSD _(0.05)		7	12	10	6	6	NS	NS

¹ Sencor rates of 4 oz/A for Feekes 1 and 8 oz/A for Feekes 1 and Feekes 2 exceed the labeled rates recommended for these growth stages. All other treatments are within labeled rates.

² Dates for growth stages: Feekes 1 = 11/16/99; Feekes 2 = 11/30/99; Feekes 5 = 3/8/00.

³ A dash (-) indicates plots were not evaluated since treatments had not yet been applied.

