

**Managing Weedy Grasses with Fall and Spring  
Applications of Hoelon  
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**Introduction:**

Cool-season weedy grasses are increasing in occurrence as problem weeds in wheat in Kentucky and surrounding states. Examples of weedy grasses that can be found in wheat included Italian ryegrass (*Lolium multiflorum*), cheat (*Bromus secalinus*), downy brome (*Bromus tectorum*), field brome (*Bromus arvensis*), and hairy chess (*Bromus commutatus*). These species often emerge in the fall and develop most of their growth the following spring.

Italian ryegrass can be controlled with Hoelon depending on size of plants. The Hoelon label recommends using the 1.33 pt/A for controlling 1- to 4- leaf plants, 2 pt/A for 5-leaf plants, and 2.67 for 5-leaf to 2-tiller plants. When compared with Italian ryegrass, the Brome species tend to be more tolerant to Hoelon and are not listed on the label for Kentucky.

**Objective:**

Evaluate control of annual ryegrass and hairy chess and wheat yield following fall and spring applications of Hoelon .

**Methods:**

The plot area was chisel plowed and disced prior to planting. Madison wheat was seeded at a rate of 35 seed/ft<sup>2</sup> October 22, 1997 at the UKREC in Princeton, Kentucky. The plot area had a history of a mixed population of annual ryegrass and hairy chess. Nitrogen in the form of ammonia nitrate was applied as a split treatment of 60 units (2-24-98) plus 60 units (3-24-98).

Hoelon 3EC (diclofop-methyl) was applied at the rate of 2 pt/A in a spray volume of 26 GPA. The timing of application and size of wheat and weedy grasses are indicated below:

	Date	Wheat	Weedy Grasses
Fall Treatment	12/20/97	1 tiller 2" tall	1-1.5" tall
Spring Treatment	4/6/98	3 tiller 8" tall	5" tall

Visual ratings of biomass for wheat, annual ryegrass, and hairy chess were made May 30, 1998. Plots were harvested for grain yield July 7, 1998.

### Results:

The biomass ratings in May indicated that Italian ryegrass accounted for 89% of the plant biomass in the plots relative to only 1% for hairy chess (Table 1). The competition from these weedy grasses, particularly Italian ryegrass, limited the wheat yield in the check plots to only 3.8 bu/A.

The results from the herbicide treatments confirmed that Hoelon is more effective in managing Italian ryegrass than hairy chess. Both fall and spring treatments improved control of Italian ryegrass and allowed hairy chess to develop and become the more dominant of the two species. The fall treatment was generally more effective than the spring treatment in limiting the amount of growth of both species; consequently, the 26.2 bu/A wheat yield achieved with the fall treatment was significantly greater than the yield from the spring treatment or the nontreated check. In spite of the improved control with the fall treatment, the hairy chess still accounted for nearly one-third of the plant biomass and seemed to restrict wheat yield.

**Table 1. Impact of Fall and Spring Applications of Hoelon at 2 pt/A on Biomass of Wheat, Annual Ryegrass, and Hairy Chess and Wheat Grain Yield.**

	Timing <sup>1</sup>	Plant Biomass <sup>2</sup>			Wheat Yield (Bu/A)
		Annual	Hairy		
		Wheat	Ryegrass	Chess	
		----- % -----			
Hoelon 2 pt/A	Fall	66	2	32	26.2
Hoelon 2 pt/A	Spring	33	7	66	5.9
Nontreated Check		10	89	1	3.8
	LSD (0.05)	28	17	16	10

Timing<sup>1</sup>: Fall treatment was applied on 12-20-97. Spring treatment was applied on 4-6-98.  
 Plant Biomass<sup>2</sup>: Percentages represent the relative amount of plot area occupied by wheat, annual ryegrass, and hairy chess based on visual ratings made on 5-30-98.

**Conclusions:**

Applying Hoelon to a mixed population of Italian ryegrass and Brome species, such as hairy chess, may result in effective control of the Italian ryegrass and allow the Brome species to emerge as the dominant species. The use of Hoelon in the fall when plants are small will likely result in better control of Italian ryegrass than waiting until the spring when plants have overwintered and increased in size. Although hairy chess is considered tolerant to Hoelon, there appeared to be better control of this species where Hoelon was applied in the fall rather than in the spring. It is unclear whether this benefit was attributed to suppression from Hoelon or possibly the hairy chess in the fall-treated plots was further along in its development and was more prone to the unusual freezing temperatures that occurred in March.