

Interestingly, there was little phytotoxicity with any of the herbicides, although DOWCO 453 and CGA 89725 did seem to show some potential for phytotoxicity. This study was conducted on a turfgrass consisting predominately of annual bluegrass and fine fescue. Another field study was initiated to look at the phytotoxicity potential of these herbicides on Kentucky bluegrass. This study was put out on August 28 at the Hancock Turfgrass Research Center.

The three herbicides which showed the most promise, Poast, CGA 82725, and DOWCO 453, were tested on Kentucky bluegrass along with HOE 35609, an experimental herbicide for quackgrass control. The three herbicides from the original postemergence study all showed unacceptable levels of injury. The data in Table 5 shows ratings of the treatments 47 days after application. At this time the Poast treatments had recovered from the herbicide injury but DBA 82725 and DOWCO 453 treatments still had not recovered. The injury from these herbicides develops slowly taking 3-5 weeks for the grass to go off color. The injury symptoms were exhibited for a period of about six weeks. The length of time the injury symptoms are expressed is totally unacceptable on Kentucky bluegrass. The fact that these herbicides seem to be much less phytotoxic to annual bluegrass and fine fescue merits further research.

Table 5. Phytotoxicity to Kentucky Bluegrass with New Herbicides. Hancock Turfgrass Research Center. Treated: 8/28/83. Rated: 10/14/83.

Treatment		Rating
Chemical	Rate	Lowest Rating Indicates Least Phytotoxicity
Poast + OC	.2 lb/A	1.0 A
Poast + OC	.15 lb/A	.13 A
Hoe 35609	.5 lb/A	1.5 A
Check		1.7 AB
Hoe 35609	1.0 lb/A	2.3 AB
CGA 82725 + OC	.25 lb/A	3.0 B
CGA 82725 + OC	.5 lb/A	4.8 C
Dowco 453 + OC	.2 lb/A	5.7 C
Dowco 453 + OC	.15 lb/A	7.7 D

\* Treatments having the same letter are not significantly different. Mean separation by Duncan's MRT (5%) Standard error = .4; F = 30.59.

#### Environmental Fate of Agricultural Chemicals Using Model Ecosystems

To complement the field studies on pesticide efficacy, a model ecosystem has been developed to examine the total fate of an agricultural chemical applied to turf. These model ecosystems will go far beyond field studies in providing clues as to how pesticides are affected by soil and thatch and how to improve pesticide effectiveness.

The model ecosystem consists of a 31.5 x 30.5 x 5.0 cm (LxWxH) stainless steel base on top of which rests a 23.5 x 31.4 x 16 cm (LxWxH) glass chamber. The glass chamber was constructed from 0.625 cm plate glass. On one face of