Short Note on Dihydropyrones, a New Herbicidal Family with Bleaching Properties

J. Vial and G. Borrod
Rhône-Poulenc Agrochimie, Quartier de la Dargoire, F-69009 Lyon, France

Z. Naturforsch. **39 c**, 459 (1984); received January 12, 1984

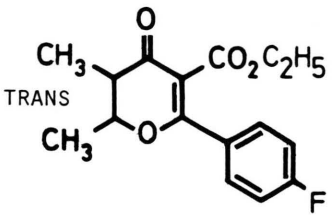
Dihydropyrones are new products showing pre-emergence activity on a large number of weeds [1].

Herbicidal activity on grasses and broad-leaf weeds was determined with the dihydropyrone LS 76-1243 [ethyl, *trans*-5,6-dimethyl-2-(4-fluorophenyl)-5,6-dihydropyran-4-one-3 carboxylate]; it is manifested by a strong bleaching effect.

This compound did not inhibit photosynthetic electron transport as indicated by Hill-reaction assays and did not affect mitochondrial respiration.

The bleaching of leaves was found to be related to a decrease in the amount of chlorophyll and β-carotene. A concomitant accumulation of a β-carotene precursor was observed.

A same action is observed with other products of the dihydropyrone family. Activity depends on the *cis* or *trans* configuration.



LS 76-1243

Table I. Herbicidal effect of LS 76-1243 on selected plants.

A. Activity on weeds		B. Crop tolerance	
Species	LD-90* [kg/ha]	Species	LD-20* [kg/ha]
Avena fatua	8	*Helianthus annuus*	8
Digitaria sanguinalis	0.3		
Echinocloa crus-galli	0.6	*Gossypium hirsutum*	5
Lolium multiflorum	8		
Setaria viridis	0.1		
Alopecurus myosuroides	8		
Chenopodium album	1.4		
Solanum nigrum	1		
Sinapsis alba	2.6		
Stellaria media	1.2		

*) LD-90 or LD-20 is the herbicide dosis resulting in 90% or 20% killing of the treated plants.

Reprint requests to J. Vial.
0341-0382/84/0500-0459 $ 01.30/0

[1] UK-Patent, No. 2.016.463.