

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

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

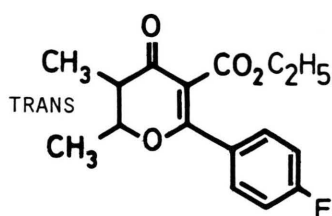
Herbicidal activity on grasses and broad-leaf weeds was determined with the dihydropyrone LS 76-1243 [ethyl, trans-5,6-dimethyl-2-(4-fluorophenyl)-5,6-dihydropyran-4-one-3 carboxylate]; it is manifested by a strong bleaching effect.

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]
<i>Avena fatua</i>	8	<i>Helianthus annuus</i>	8
<i>Digitaria sanguinalis</i>	0.3	<i>Gossypium hirsutum</i>	5
<i>Echinochloa crus-galli</i>	0.6		
<i>Lolium multiflorum</i>	8		
<i>Setaria viridis</i>	0.1		
<i>Alopecurus myosuroides</i>	8		
<i>Chenopodium album</i>	1.4		
<i>Solanum nigrum</i>	1		
<i>Sinapsis alba</i>	2.6		
<i>Stellaria media</i>	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.

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[1] UK-Patent, No. 2.016.463.



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