

## Phytotoxic Activity of a Benzofuran Isolated from *Trichocline reptans*

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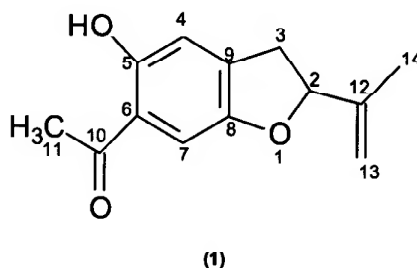
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**Abstract:** Phytotoxic Activity of the 6-acetyl-5-hydroxy-2isopropenyl-2,3-dihydrobenzofurane (1) isolated from *Trichocline reptans* (*Asteraceae*) was investigated in two weed species. Results indicate that the best growth inhibition effect occurs on *Chenopodium album* weed. Phytotoxic effect of the *T. reptans* chloroformic extract and of the benzofurane are discussed and compared in the two weed species.

### Introduction

In previous phytochemical study in *Trichocline reptans* (*Asteraceae*) collected in Salta, Argentina, we identified benzofurane 1, linear furanocoumarins and coumarins [1].



Regarding the importance of beneficial or toxic biochemical interactions that occurs between higher plants, where Allelopathy is the reference [2], we evaluated the phytotoxic effect of both the extract of *T. reptans* and the benzofurane on two weed species that affect our country cultivars, *Chenopodium album* and *Sorghum halepense*. We tested the inhibitory effect on radicle and leaf growth [3].

### Experimental

Dihydrobenzofurane 1 was isolated from the  $\text{CH}_2\text{Cl}_2$  extract by "dry column chromatography" method. The structure of this compound was elucidated by spectroscopic methods: UV, IR,  $^1\text{H}$ -RMN,

<sup>13</sup>C- RMN and EM.

The Phytotoxic Assay [3], was carried out on *Chenopodium album* and *Sorghum halepense* with aqueous solutions (80 ppm) of the HCCl<sub>3</sub> extract and the dihydrobenzofurane. The data were taken after 7 days of incubation. Examination and summaries of data are based on analyses of variance ( block design ANOVA).

### Results and Discussion

The results of phytotoxic assay, led us to suggest that **1** produces significant effect on the growth of Dicotyledoneous weed *Ch. album*, where there is a marked radicle inhibition (>50%) than on the Monocotyledoneous weed *S. halepense*. We compared the treatments with the extract and the pure compound and the selectivity of their phytotoxic action.

### References and Notes

1. Alarcón, S.R.; de la Fuente, J.R.; Novara L y Sosa, V.E. *An. Asoc. Qca. Arg.* **1998**, *86*, 248.
2. Molisch, H. *Der Einfluss einer Pflanze auf die andere Allelopathie*; Gustav Fischer: Jena, 1937.
3. Vaccarini, C.E.; Palacios, S.M.; Meragelmann, K.M.; Sosa, V.E. *Phytochemistry* **1999**, *50*, 227.