Phytotoxic Activity of a Benzofuran Isolated from *Trichocline reptans*

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**Abstract:** Phytotoxic Activity of the 6-acetyl-5-hydroxy-2-isopropenyl-2,3-dihydrobenzofuran (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 benzofuran are discussed and compared in the two weed species.

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**Introduction**

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

![Diagram](image)

Regarding the importance of beneficial or toxic biochemical interactions that occurs between higher plants, where Allelopatie is the reference [2], we evaluated the phytotoxic effect of both the extract of *T. reptans* and the benzofuran 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**

Dihydrobenzofuran 1 was isolated from the CHCl₃ extract by “dry column chromatography” method. The structure of this compound was elucidated by spectroscopic methods: UV, IR, ¹H- RMN.
$^{13}$C- RMN and EM.

The Phytotoxic Assay [3], was carried out on *Chenopodium album* and *Sorghum halepense* with aqueous solutions (80 ppm) of the IICl$_3$ 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 Dicotyledonous weed *Ch. album*, where there is a marked radicle inhibition (>50%) than on the Monocotyledonous weed *S. halepense*. We compared the treatments with the extract and the pure compound and the selectivity of their phytotoxic action.

**References and Notes**