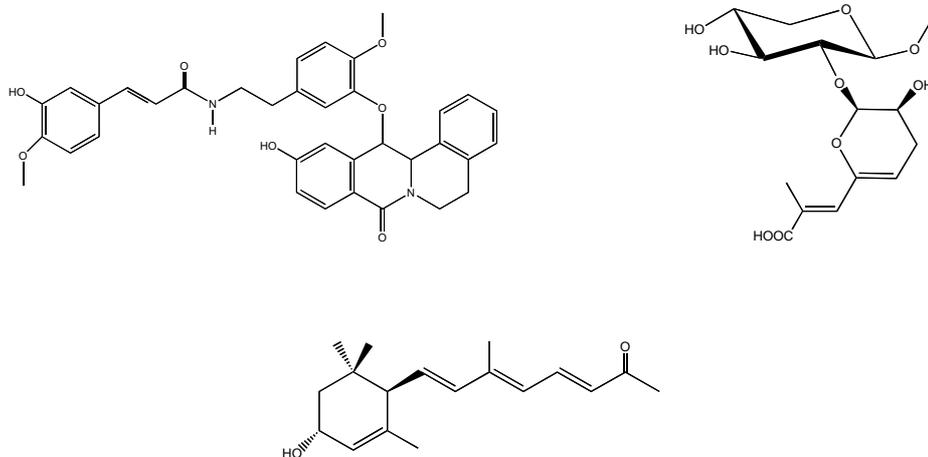


**BIOACTIVE COMPOUNDS FROM *CHENOPODIUM ALBUM* :
EFFECTS ON SEED GERMINATION AND PLANT GROWTH**Della Greca M.¹, Fiorentino A.², Zarrelli A.¹¹*Dipartimento di Chimica Organica e Biochimica, Università Federico II, Complesso
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High plants produce a large variety of secondary metabolites involved in different processes. These substances are released in the environment and can interfere with the growth of other plants or act as mycotoxins and antimicrobials.

We recently reported that some metabolites isolated from *Cestrum parqui* L'Herrit. and *Brassica fruticulosa* L. inhibited the germination and growth of some mono and dycotiledons. Continuing the phytochemical study of common plants widely distributed in the Mediterranean area, we have investigated *Chenopodium album*. It's an odorless, branching, largely annual weed diffused in cultivated fields, commonly known as lambsquarters. In a previous study Mallik et al. reported the presence of growth and germination inhibitory substances of radish and wheat seeds. In a reinvestigation of the aqueous extract of *C. album* we have isolated among other compounds eight acid cinnamic amides, a xyloside and eighteen apocarotenoids.

The structures have been attributed by means of their spectral data and chemical correlation.



Preliminary tests evidenced the phytotoxicity of the aqueous extract of *C. album* on dicotyledons *Lactuca sativa* L. (lettuce) and *Lycopersicon esculentum* L. (tomato) and the monocotyledon *Allium cepa* L. (onion) resembling that reported by Mallik et al. These species were selected as representatives of main monocotyledon and dicotyledon commercial crops.

All the compounds have been tested in the range concentration 10^{-4} - 10^{-7} M. The activity of amides confirmed the potential phytotoxic activities of the extracts.

The apocarotenoids have been tested on germination root and shoot length of the lettuce. All the compounds reduced the germination and plant growth at higher concentration and a the behavior within 10-40% of the inhibitory effect was observed. Abscisic alcohol was the most active compound tested which showed about 90% of inhibitory effect at higher concentration tested.