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The Effect of Uracil on the Germination and Growth of some leguminous Plants

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Abstract: All known pyrimidine and pyrimidine-derived secondary products originate from uracil or its precursor, uracil-6-carboxylic acid. The biosynthesis of these products has been suggested to be uracil detoxication mechanisms. The possible toxic effects of uracil on the germination and growth of *Pisum sativum* L. cultivar Meteor, *Lathyrus tingitanus* L. in which pyrimidine-derived secondary products occur naturally, and of *Phaseolus aureus* Roxb. and *Glycine max* (L.) Merr., in which these compounds do not occur, were examined. The results show that the germination and growth of the *P. aureus* and *G. max* seeds under investigation were considerably inhibited by exogenous uracil. The effect of uracil was obvious on the non-producer group of experimental plants, especially on *G. max*. However, there was not any noticeable effect of uracil either on *P. sativum*, or on *L. tingitanus* in the experimental periods of germination and growth. These results show that uracil accumulation is most probably toxic to plants and that the production of these pyrimidine-derived secondary compounds from uracil is therefore a detoxication mechanism.

Key Words: Uracil, detoxication, *Pisum sativum*, *Lathyrus tingitanus*, *Phaseolus aureus*, *Glycine max*

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