Efficacy of soil insecticides and seed treatments for control of Western Corn Rootworm larvae

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Introduction
Western Corn Rootworm (WCR) larvae destroy belowground the root system of maize plants. Therefore, the aim of this study was to define the efficacy of various soil insecticides and seed treatments to target WCR larval stages.

Material & Methods
Field studies were carried out in South-Eastern Austria with a natural high pest population since the year 2002.
• Application of soil insecticides with the active ingredients: x) Clothianidin, x) Tefluthrin or x) entomoparasitic nematodes (EPN) in spring
• Different pest population densities by artificially infestation of defined numbers of Diabrotica eggs
• Soil type characterisation
• Evaluation of results by „emergence cages“ (counting adults) and root rating (Node Injury Scale)

Results
• Insecticides with medium efficacy in reducing number of emerging adults
• Clothianidin proved to be the most efficient ones in protecting root system from larval feeding
• Insecticides are useful for plant protection but not for eradication measures
• Influence of soil type on the survival rate of pest insects as well as on the soil insecticides need to be clarified in future studies
• Survival rates of the pest insect and of entomoparasitic nematodes in sandy soil lower due to desiccation than in heavy soil types