

New strategy for an old problem: Development of a biological control strategy against wireworms in potatoes

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Wireworms are larvae of the click-beetle and pose a major problem in European agriculture. Especially since the expiry of the approval of chemical control agents, the search and testing of biological alternatives, notably for potato growing, is becoming increasingly important. In the project Agri-Met, which is funded by the BLE, a granulate for spreading and a sprayable formulation for the regulation of the pest need to be developed and tested on the basis of the naturally occurring fungus *Metarhizium brunneum*. The JKI Institute for Plant Protection in Field Crops and Grassland, the JKI Institute for Application Techniques in Crop Protection and the industrial partners ABITEP GmbH and LEHNER Agrar GmbH are involved in the project.

In this project, the Institute for Application Techniques in Crop Protection i. a. has the task of testing the developed granules for their abrasion behaviour as well as the technical conditions of application for a possible application of the liquid suspension. Furthermore, the distribution of the granules in the potato ridge will be determined and an optimal storage with regard to the control of the larvae will be determined. The granules are produced in the so-called coating process and consist of killed millet seeds,

which is coated by the biomass of the fungus.

The abrasion was determined using the Heubachtest, which is the standardized method to investigate the abrasion of dressed seed. The first investigations of the granulate have shown that only small amounts of abrasion can be observed. Furthermore, the application of the liquid suspension should be tested. For this purpose, experiments have been carried out with a hand pressure vessel and appropriate nozzle technology. The dry product was dissolved and filtered before application. It has been shown that the different batches of the material sometimes differ significantly in the quality of application. This can be determined by the contamination of the nozzle filters, which varies widely. The granule distribution in the earth dam should be analysed in layers. Here, the existing soil moisture has been found to be a problem because the granules begin to dissolve in the aqueous medium. Sampling the soil and then fast drying could significantly improve the results here. For the next year some trials are planned. One aspect of these trials is the comparison between a pre-treatment with a granulate application in autumn and a regular procedure with an application in spring.