Initial survey of insect pest resistance to insecticides in agro-commodity stores in Europe

Short summary for practitioners:

INTRODUCTION

In order to achieve a more sustainable grain storage management throughout Europe, it is required to assess the information already available from earlier research and field experiments and to convert it to a more user-friendly format. Nowadays no clear data, tools or information are available for the assessment of the risk of insect-resistance to Grain Storage Plant Protection Products (PPP's). This lack of information results that in the end the silo operator applies techniques and products as he assumes fits his purpose and comes out as the cheapest solution, without being able to "predict" the outcome.

RESEARCH FOCUS

Our work consists of research and compilation of available information on PPP-resistance in a user-friendly tool or model. The combination with other common and/or upcoming storage management techniques is evaluated. In the present project, it was found that EU agri-facilities differ in presence of resistant strains of storage pests to the major insecticidal neurotoxic active ingredients (i.e. deltamethrin, pirimiphos-methyl and phosphine). If the choice of product is based on a rapid resistance test of the pest population in the commodity being treated, the end user will benefit from the targeted intervention in the form of increased efficacy and lower insecticide residues in the commodity. These benefits will be further increased if the individual interventions are part of an anti-resistance strategy including alternative products without neurotoxic effects.

This project has received funding from the European Union's Horizon 2020 research and innovation programme, under grant agreement No 101000663.