

AN INNOVATIVE APPROACH TO MONITORING INSECT PESTS IN SILOS

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Various traps were developed for monitoring of insect pests in stored grain (e.g. probe trap - USA; PC trap - UK; cup trap - Germany). The surface condensation zones of stored grain are critical for starting infestation. Pitfall traps can be easily placed at the surface of bulk grain, however, their use in deep silos/bins could be problematic. Wright (1991) sampled insect pests in empty silos by cardboard traps hung on strings. Hagstrum et. al. (1994) used sticky traps placed in the bin headspace.

In the Czech republic (Cz) half of the annual cereal production is stored in large silos and bins. Monitoring is based on taking samples at the bottom of the silos while mobile vacuum samplers are considered by most of storekeepers to be time consuming for regular monitoring. a new conical metal trap and sampler was developed in Cz. This trap is hung on a long string and its heavy tip enables vertical penetration into remote grain surfaces. Removable sets of tops (with holes of various diameter) in the trap allow the entry of insects but not grain. The plain cone without the cover-top can serve as a probe sampler for taking grain samples for periodic laboratory evaluation (e.g. moisture, biochemical composition, hidden and mite infestation). The tool is also proposed for field evaluations of the results of fumigations. Infested grains are enclosed (via the removable top with small holes) into traps and these are placed in the silos. After fumigation the samples are checked for adult emergence.