

# Video portraits of pests in arable land and stored products for an online diagnostic aid

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The almost 20,000 organic farms in Germany, in particular the 400 to 800 annual conversion farms, have a high and special need for information on ecological plant protection. Existing online tools for determining harmful pathogens are either linked to advertising for plant protection products or only cover a limited spectrum of species. An ongoing project is developing an identification aid for organic farming and compiling organic regulation options.

Additionally, video portraits in form of short documentaries are being produced, to illustrate the movements and behaviour of pests in a catchy and memorable way. The learning effect for the user is thereby supported.

For recording insect footage, insects were taken from the environment or from a beneficials-rearing company and reared further in the laboratory.

We used special macro lenses, which are characterized by a high resolution and a low close-up limit. The latter enables taking a very short distance to the object, while still achieving a sharp image. Another requirement is a suitable camera that suits several lenses and records in the codec and colour coding that suits the intended final use of the film.

The data amounted to many gigabytes of film after a single working day. After storing, they were evaluated and labelled for post-production. For producing the voice-over, an informational text was written, to be spoken by a professional

speaker over the pre-final-film, followed by a final round of editing.

The current project has so far been published on <http://pflanzen-schutz.oekolandbau.de> for the topics of stock protection, arable farming, weed regulation, fruit and wine growing and hop. The determination aid is designed as a filterable, image-based complete list of harmful organisms that allows any combination of selection options. In addition to characteristics of the organisms, it is also possible to filter for larval characteristics, infested products (storage protection), site conditions (weeds), or infested plant parts and harmful symptoms.

Current research enables more recommendations with regard to regulatory options.

The final film will be exported in a FullHD, SDR format and uploaded to the JKI YouTube channel. This format is the most popular format, although 4K and HDR are also supported. Every film will be linked to the fitting article on the diagnostic aid to get more and specific information. Examples of beneficial insects are also included. Films about the following insects will be produced until the end of the year: colorado potato beetle, dried fruit moth, mediterranean flour moth, drug-store beetle, tobacco beetle, grain weevil (rice weevil, maize weevil), bean weevil, lesser grain borer, flat grain beetle, confused flour beetle, sawtoothed grain beetle, large and small cabbage white.