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Evaluation of feed safety aspects in feeding organic layers with fresh house fly larvae *(Musca domestica)* reared in poultry manure

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In the production of organic table eggs it is difficult to provide feed that accomplish all needs for the hens. Especially essential amino acids are in deficits and this may lead to reduced productivity, and in worst case elicit feather pecking and cannibalism in the flock. The addition of fish meal in the feed has been used to avoid these problems. As fish meal may be a limited resource in the future due to overfishing, a more sustainable protein source is needed. Thus, the BioConVal project has investigated the possibility of using larvae of the common house fly (*Musca domestica*) as poultry feed to address some of these issues. The larvae is natural feed for all poultry and contains large amounts of high value protein. Furthermore, feeding fresh larvae may stimulate the hens toward a more natural behavior when kept in large flocks.

House fly larvae may be cultured on waste resources such as animal manure. However this is a very complex matrix that may contain pathogenic bacteria, parasites and chemical or biological toxins. Especially pathogenic microorganisms are of great concern as feeding contaminated larvae to hens may cause animal disease or if transmitted to table eggs may cause human disease. Although adult house flies are known to carry plenty of pathogens, this seems to be different for the larvae. In fact research from BioConVal has shown that larval stages of *M. domestica* may actually feed and degrade various Enterobacterial species in the manure.

In the context of using fly larvae as fresh feed, we have conducted laboratory assays to evaluate microbial (*Salmonella* Enteritidis, *E. coli Campylobacter jejuni*), parasitological (*Coccidia* ssp, *Ascaridia galli*) and toxicological risks (dioxin, PCB). Results from this work will be presented at the conference.