

## Abstract-44

### **CALCIUM IODATE SUPPLEMENTED DIETS LEAD TO IODINE ACCUMULATION IN *TENEBRIO MOLITOR* LARVAE**

A.-K. Marel<sup>1</sup>, L. Hartmann<sup>1</sup>, M. Lieber<sup>1</sup>, A.-K. Meinhardt<sup>1</sup>, A.-Müller<sup>1</sup>, R. Greiner<sup>1</sup>

<sup>1</sup>Department of Food Technology and Bioprocess Engineering ([ralf.greiner@mri.bund.de](mailto:ralf.greiner@mri.bund.de))

Max Rubner-Institut, Federal Research Institute of Nutrition and Food, Karlsruhe, Germany

Insects such as the *Tenebrio molitor* larvae (mealworms) could play a major role as sustainable food source for the growing population. They are able to transform low value processing by-products into protein- and fat-rich biomass. Wheat bran, a side-product in the milling process, can serve as potential feed for the large scale breeding of mealworms. Wheat bran, however, exhibit only a low natural content of the essential trace element iodine. Chemical composition of insects was already shown to be affected by their diet.

Larvae were fed with wheat bran supplemented with  $\text{Ca}(\text{IO}_3)_2$  over eight weeks. The substrate was changed weekly and pupae and dead larvae were collected, counted and weighed. Iodine content of the larvae was measured by ICP-MS.

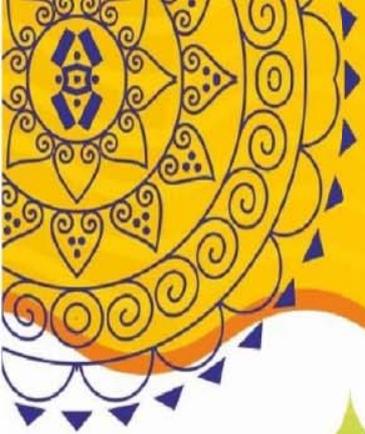
Mealworms grow slower on the iodide supplemented diet compared to the control (pure wheat diet) and possess a lower medium individual weight, however, the percentage of dead larvae is clearly lower within the first four weeks. After four weeks, the iodide content has increased considerably and reached almost the level reported for pork.

It was shown that mealworms can be enriched with iodide in order to enhance the food quality. The growth performance slowed slightly down at the same time.

**Significance and Impact of the Study:** The better understanding of breeding conditions and usage of side-streams as feed for insects can contribute to ensure the world food supply in a sustainable framework.

**Conflict of interest disclosure:** The authors declare no conflict of interest, in terms of scientific, financial and personal.

**Keywords:** Insects for food, composition, by-products as feed



# 25 BILLION MEALS A DAY BY 2025

*with Healthy, Nutritious, Safe & Diverse FOODS*



# IUFOST 2018 INDIA

19th World Congress of Food Science and Technology  
CIDCO Convention & Exhibition Centre, Navi Mumbai, India  
October 23 - 27, 2018

Congress Host



IUFOST Adhering Body



Partner Institution



Event & Knowledge Partner



Co-Sponsor



Supported by



Host State



## e-POSTER ABSTRACTS BOOK

