Abstract – SY24

PRELIMINARY RESULTS ON DEVELOPMENT OF BLACK SOLDIER FLY LARVAE ON CANTEEN WASTE: CHEMICAL HAZARDS AND GROWTH PERFORMANCE

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Black soldier fly (BSF) is a promising species for the waste management sector, its plasticity to grow on different waste and by-product increased the interest of research and insect production market. The larvae can grow on different waste and by-product, but under European legislation the limitations relate to chemical and microbiogical hazard of waste. The study tried to evaluate the effect of canteen waste on development and chemical composition of BSF. Three points of collecting waste were evaluated, 10 kg of waste were collected from each point/site. Three replicates for kind of waste were allocated to 2kg (representative of the starting sample?) of diet and 2000 larvae, feed rate 1g/larva. The trial finished at the first 10 prepupae appearance. The growth performance showed no difference between the different canteen waste, larvae overpass the 100mg on the 4th day, the The final weight of larvae was between 208.3±60.99 mg and 210.6±27.79 mg. The prepupae appeared at 15 days, no differences were recorded between BSF groups (ranged between 118.0±23.64 mg and 165.6±30.13 mg). The canteen waste presented heavy metal concentrations under the legislation limits for all the main recorded heavy metal. The larvae were dried and grinded before using them for heavy metal analysis. The data showed an accumulation of heavy metals of BSF: aluminum (45 mg/kg), zinc (75mg/kg) and manganese (55.6mg/kg) resulted in the highest. Mercury was 0.5mg/kg. No dangerous heavy metals level was recorded up to the legislation limits, even if the limits for mercury are ranged differently considering the raw material in the European legislation. Insect meal is not reported in the European legislation.