Kreca VOF, Netherlands – large scale insect farm

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Info: www.kreca.com

'Kreca vof' is a family owned insect farm, rearing 14 insect species for animal consumption, such as crickets, the yellow mealworm (*Tenebrio molitor*), the superworm (*Zophobas morio*), the lesser mealworm (*Alphitobius diaperinus*), fruitflies, curlyflies, and cockroaches. 'Kreca organic food bv' preserves and packages available insects for human consumption. These are: the migratory locust (*Locusta migratoria*) the superworm and lesser mealworm.

Kreca started 35 years ago rearing crickets as feed. The following activities are carried out: rearing insects, research and development in technology and biology, packaging and distribution, sales and administration.

Experience in breeding

Kreca supplies insects all over Europe alive, frozen and freeze-dried. Insects are supplied to customers every week, the year round. Kreca has 12 employees and during weekends casual labourers are employed. Mechanisation has taken over when large-scale rearing is required.

Kreca was aware of the possibility of using insects for human consumption. This really took off during an event called "*Wageningen, the city of insects'* when about 2000 people simultaneously consumed insects. Kreca provided the mealworms for this event. This was the start of a collaboration with the university, two other insect rearing companies and a game and poultry Dutch entrepreneur, interested in marketing edible insects. This group started to market locusts, mealworms and the superworm for human consumption. This was pioneering, as the group was one of the first in the western world to set up a branch in edible insects.

Related to the breeding some problems occurred in the last years. Kreca used to sell more than 10.000 boxes of crickets (*Acheta domestica*) a week. In 2000 suddenly 50% of the crickets died within 8-12 hours, something that was never experienced before. A virus was determined and a very thorough sanitation program was carried out. All diseased cricket were removed, the whole rearing facility was cleaned and strict hygienic measures were imposed. Despite the sanitation program, moving of the location, and washing of the cricket eggs, the problem was not solved and the rearing of crickets was stopped. As it was known that the banded cricket (*Gryllus sigillatus*), experienced less problems, we started to rear this species instead. Currently, Kreca rears three cricket species: *A. domesticus*, *Gryllus bimaculatus* and *Gryllus sigillatus*. The last one being economically most interesting. It is not known what makes that *A. domesticus* harder to rear than in the past. It might have been related to the feed composition as in the Netherlands animal diets are not allowed.

Another problem was contaminated feed. It happened that 90 % of the yellow mealworm beetles died. Examining each ingredient of the feed separately from the supplier we could determine that maize was the culprit. It shows that calamities could occur by not having the correct feed. To start up a new colony takes about four months (from egg to beetle takes 16 weeks – 18 weeks)

The success we have made during the past three years is thanks to the cooperation with our partners the university, the entrepreneur, the breeders united in the VENIK and last but no least the Dutch government.

Topics to discuss

- Is there enough knowledge about insect pathology? How to deal with insect diseases? Are there pathogens of insects that may affect humans? Do we know enough about allergic reaction in humans by consuming insects?
- Can we produce protein from insects in a competitive with conventional proteins?
- How to automate insect rearing? Can we produce 5000 or 10.000 ton a day? What are the insect rearing densities? What is the break-even point economically?
- Which insects can we rear as food or feed?
- How to assure the quality of insect feed (free of contaminations)?
- What about the ethics of killing insects? How to ship insects (preservation and packaging)?
- Are there guidelines to transport insects?