

Organic food and health – a multigeneration animal experiment



The overall objective is to determine, if conventional and organic food products show differences in effects on animal physiology, of a type and magnitude, that indicates that such products will affect humans differently. The agricultural treatments used are:

1. An organic cultivation treatment, with low input of nutrients through animal manure and use of catch crops, and no pesticides.
2. A conventional cultivation system, with high input of nutrients through mineral fertiliser and intensive use of pesticides.
3. A combination of 1 and 2, with low input of nutrients, primarily animal manure, and intensive use of pesticides.

The treatments will be established on two sites. Wheat, potatoes and oilseed rape will be produced in Foulum, and carrots, kale and mature peas in Årslev. Vegetables and fruit will be processed and dried, wheat ground and baked, and oil will be produced from the rapeseed.



The picture-developing properties of fresh plant material are examined by means of biocrystallization.

Characteristic secondary metabolites are measured in feed material from each treatment. The major nutrients in the feed plants are determined, and the biological value of major protein sources of feed plants is assessed.

Based on these results, three feed mixtures are prepared and analysed for concentrations of approximately 20 elements and 150 pesticides. Rats are fed with the three prescribed feed mixtures for two generations. Reproductive characteristics and weight gain are recorded. Groups of second generation of rats are selected for an intensive study, in which uptake and excretion of energy and protein and selected micronutrients are determined. Effect of the dietary treatments on the immunological, antioxidant, and health status of the rats will be studied. Data from the experiments are assembled and analysed using relevant models.



DARCOF-project III.4 Organic food and health – a multigeneration animal experiment (Organic Health)

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Danish Research Centre for Organic Farming (DARCOF) coordinates Danish research into organic farming. The purpose is to secure the optimum benefit of the resources allocated to the research.

DARCOF is a so called "research centre without boundaries" where the research qualifications is composed by the scientists and institutes participating in the research programs. At the moment there is six research programs in progress with a total of 33 projects. More information on the research can be found at www.darcof.dk or obtained from: