



AARHUS
UNIVERSITY

DCA - DANISH CENTRE FOR FOOD AND AGRICULTURE

PERSPECTIVE

ANNUAL REPORT 2018

DCA – DANISH CENTRE FOR FOOD AND AGRICULTURE

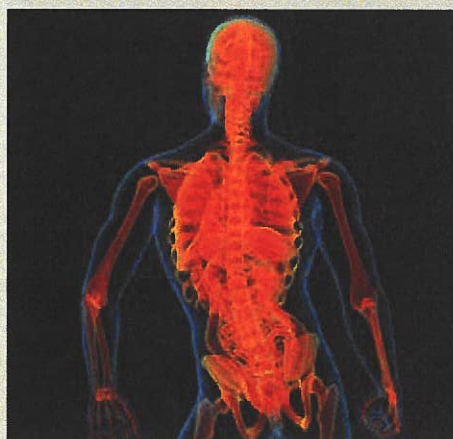
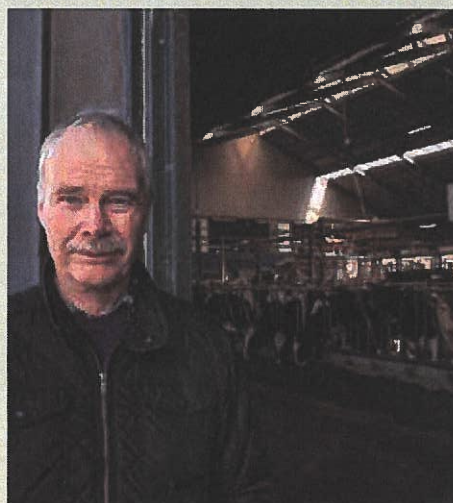
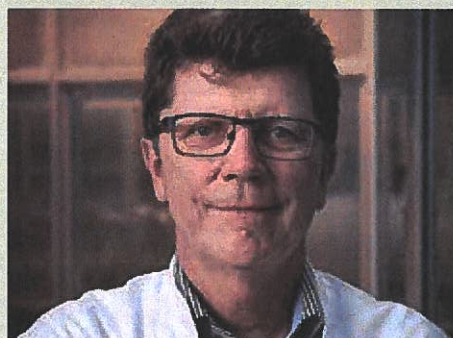
Food and agricultural science
Research-based policy support
Knowledge exchange and industrial collaboration
National and international research alliances

2018

DCA – Danish Centre for Food and Agriculture publishes the annual report **Perspective**. The report contains information about the work that underpins Aarhus University's research-based policy support in food and agriculture.

The publication provides examples of new projects and recent research results including collaborations with commercial companies and organisations.

It is our vision that **Perspective** will generate interest and understanding – in research as well as policy support – and illustrate how these efforts help strengthen the foundation for important societal decision-making.



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Photo: Janne Hansen

Maize cultivation with reduced environmental impact

A maize crop needs nutrients right from the start. This is the reason why many farmers – in addition to slurry – apply phosphorus in mineral fertiliser in the spring. This “starter” fertiliser poses a risk for the environment in the long-term due to extra accumulation of phosphorus in soil.

Previous field trials at Aarhus University have shown that slurry may work at least as well as mineral starter fertiliser if placed at the correct distance from maize, but there is no suitable application equipment on the market. Furthermore, slurry itself may also impact the environment via greenhouse gas emissions and nitrogen loss.

Researchers from Aarhus University are partners in a new project – **SlurryMaize** – that will approach these problems by developing new methods for improved utilisation of slurry as the primary nutrient source. The aim of the project, which is led by SEGES, is to develop a slurry injection system that ensures precise placement of the slurry prior to sowing, so that the maize has faster and better access to the nutrients. Accurate placement is crucial to subsequent placement of the seeds at the right distance from the slurry. The seeds will die if they are in direct contact with the slurry after sowing. And if too far away, they will not be able to utilise the nutrients sufficiently.

In collaboration with the company Samson Agro, the Department of Engineering at Aarhus University will develop the injection technology that is required for correct placement and distribution of the slurry. Researchers from the Department of Agroecology will investigate the effects of the new technology on maize production, nutrient uptake, and development of greenhouse gases.

The project is funded by the Green Development and Demonstration Fund (GUDP).



Photo: Colourbox

Organic greenhouse vegetables can become more sustainable and resilient

How can tomatoes, lettuce and other organic crops be produced in greenhouses in Denmark without consuming a lot of energy for heating? And how can a corresponding organic vegetable production be possible in southern Europe without crops being eaten or attacked by heat-loving insects and diseases? Researchers from, among others, Department of Food Science will investigate these issues in the new project **Greenresilient**, which has partners from eight European countries.

The main goal is to design and demonstrate resilient agroecosystems in greenhouses and tunnels, which allow for a high and stable production with a low environmental impact. The innovative cropping systems will be tested at five locations in Europe. The partners will investigate diseases, pests and weeds in the crops, soil fertility and soil nitrogen content as well as the environmental and economic sustainability.

The principal crop in the project will be tomato, which in the innovative systems will be combined with other crops. One idea is to shorten the tomato season so that the tomatoes are only grown during the summer, possibly together with legumes such as peas or beans contributing with both a salable yield and nitrogen. Then the cooler and darker winter months can be used to grow winter purslane, mizuna and other winter leafy crops and in spring lettuce, which is hardier than tomato.

The project is funded by Core Organic.