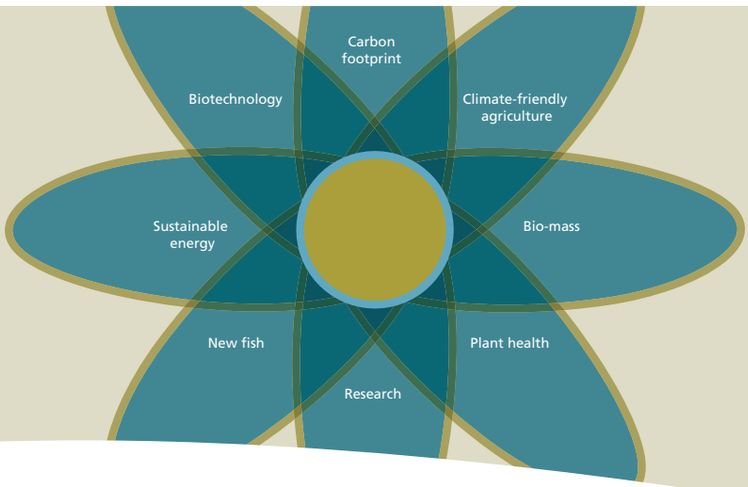

Plant health and plant protection

Climate conditions have great influence on the occurrence of pests, fungal diseases and weeds.

The climate changes in the coming years, with rising average temperatures, will change the composition and occurrence of weeds, pests and diseases that are harmful to crops.

Pests

The life-cycle of pests f.alls as the temperature rises. This means that pests such as aphids can breed several generations in the course of a single growing season, thereby causing greater damage. In addition, there is a risk that pests not seen in Denmark before will be able to live here. The Colorado beetle is an example of a new pest that has come to Denmark as a result of a warmer climate.

Plant diseases

Humidity, precipitation and temperature are some of the factors that affect the occurrence of plant diseases. Changes in these factors give better conditions for many fungal diseases, while other diseases will be less aggressive.

Mild winters increase the risk of plant diseases – especially fungal diseases – surviving the winter. Fungi can actually reproduce during exceptionally mild winters, resulting in a greater potential for infections in the early part of the growing season, when crops are generally most susceptible to infection.

Increased air humidity early in the growing season can increase the problem of many leaf-blotching diseases that attack corn and other crops.

More dry summer months, on the other hand, will mean less-favourable conditions for fungi which cause blotching and which thrive best in humid conditions, thus reducing their importance.

Mycotoxins

Many of the fungi that attack plants form mycotoxins, which are very toxic for people and animals. In Denmark, corn and corn products that are typically attacked by mould fungus, and the weather when the corn flowers has great importance for the extent of the attack.
The fungi are not new in Denmark, but the toxins do not form until the right temperature and humidity conditions exist.

At the present time there are indications that certain toxins not previously seen in Danish-produced corn can exist here. Plant diseases such as ear blight and brown rust will have greater importance when the temperature rises during the summer; wheat head blight in particular is known for growing strongly in higher temperatures.

The content of mycotoxins in food is regulated by the EU and monitored by the Danish Veterinary and Food Administration.

Weeds

Because they are generally less mobile than pests and diseases, weeds are the slowest crop-harming plants to adapt to climate changes. But over a number of years the changing climate can change the normal composition and occurrence of weeds.

Many weed types have only one generation a year and climate changes will only a marginal effect on their ability to reproduce. However, some weed species, such as annual meadow-grass, have several generations a year, and the importance of these species will increase with rising temperatures unless their growth is limited by other conditions such as drought.

Plant protection

In principle, climate change does not mean that farmers or plant-health authorities face new problems. But there will be an increased risk that new crop-harming plants, pests and diseases and invasive plant species will establish themselves with greater economic and organic consequences when the potential distribution limit moves northwards.

Increases in the occurrence of crop-harming plants, pests and diseases will result in changes in the use of pesticides. To meet a sharp increase in the need for pesticides, agriculture must use integrated pest management (IPM) to a far greater extent than today.

Integrated pest management

IPM is a pesticide strategy that is based on a system of monitoring of e.g. crop-harming plants, pests and diseases, warning systems, and preventive measures, including non-chemical control, where this is a possibility.

The Danish Ministry of Food, Agriculture and Fisheries

Slotsholmsgade 12
DK-1216 Copenhagen K
Tel: + 45 33 92 33 01
fvm@fvm.dk
www.fvm.dk/english