

## Grass performs well as catch-crop in maize

**Trials in Denmark have shown that Perennial ryegrass, Cocksfoot and Tall fescue are well suited as under-sown catch-crops in maize. Establishing a catch-crop of grass in maize must be incorporated in the plan for weed control and eventual application of slurry in the growing season.**

Grass as catch-crop in maize is valuable when

- There is a need to keep soil covered all year round and at the same time a requirement to save nitrogen
- There is a risk of nitrate leaching during autumn and winter
- You want to improve the load carrying capacity of the soil during maize harvest

Two different strategies can be utilised in relation to weed control:

### **A. Low pressure of weeds**

1. Spray the first time when weeds have 1-2 permanent leaves.
2. Spray for the second time when newly emerged weeds have 1-2 permanent leaves. Weeds can also be controlled by row cultivation with seeding of Tall fescue seed at the same time.
3. If the second growth of weeds has been controlled chemically, grass seeding must take place a few days after the last spraying.

### **B. Large amount of weeds and/or species more difficult to control chemically**

1. Spray the first time when weeds have 1-2 permanent leaves.
2. Spray for the second time or perform row cultivation when newly emerged weeds have 1-2 permanent leaves.
3. Spray for the third time when the third growth of newly emerged weeds has 1-2 permanent leaves. Weeds can also be controlled by row cultivation with simultaneous seeding of Cocksfoot or Perennial ryegrass seed.
4. If third growth of weeds have been controlled chemically, grass seeding must take place a few days after the last spraying

## Choose the right grass species

An under-sown catch-crop in maize must be well established before the maize plants grow too big and begin to limit the amount of light between the rows. On the other hand, grass must not grow too vigorously – as that has the potential to affect the maize yield. Perennial ryegrass grows relatively fast and consequently tolerates relatively late sowing. Cocksfoot and especially Tall fescue are slower growing and tolerate an early sowing.

<b>Grasses for catch-crop in maize</b>	
Early sowing at second weed control	6-8 kg Tall fescue per ha
Intermediate sowing at second or third weed control	4-6 kg Cocksfoot per ha
Late sowing at third weed control	6-8 kg Perennial ryegrass per ha



## Sowing

If early sowing is planned then broadcasting of grass seed creates a risk of grass growing too vigorously in the maize row. This will affect the maize yield negatively. Optimal distance between the grass and the maize row is 20 cm. It is recommended to use a traditional row seeder where the tubes above the maize rows are closed and lifted or removed. A specially developed row cultivator with equipment for row seeding in maize is currently being developed in Denmark.



*Row cultivator with seeding equipment (left) and harrow with seed box (not in picture)  
Photos: Poul Henning Pedersen, VFL and CMN Maskintec A/S*

Alternatively, the use of a row cultivator with a seeder installed or a harrow where the seed is put into the ground and covered with soil can be a solution for sowing the grass seed. This method might result in a poorer germination than with row seeding, but it is of great importance that the seed is only distributed between the maize rows.

*Trials with catch crops have been conducted in Denmark 2012 and 2013 in cooperation between Knowledge Center for Agriculture, Aarhus University, DLF-TRIFOLIUM, LG Seeds and Thyregod A/S.*