Crop specific guidance – Maize

The IPM Tool allows you to prioritise pests that are important on your farm. This helps guide decisions on which IPM measures are appropriate. Implementing IPM can result in 'trade-offs' where methods to control one pest may increase another. Some of these trade-offs are included in the notes below and in the Tool. Prioritising pests will help decide which pests are most important where there are trade-offs. This guidance documents provides advice on IPM measures for maize insect pests and diseases. For information on IPM interventions for weeds, refer to the separate IPM Weeds guidance document.

Insect Pests

Insects in maize cause damage to the crop through direct feeding. Insect pest control has been highly dependent on using seed treatments and applications of insecticides, but reductions in available chemistry have increased the need to make use of integrated management for control of insect pests.

Few of the non-chemical methods are likely to be 100% effective in maize crops. However, they do reduce the requirement for chemical control. Combinations of one or more techniques are likely to be most effective. Also, in some instances the presence of some insect damage will not necessarily impact on yield.

Select low risk locations / Avoid following long-term grass leys

Populations of some pests can build up under long-term leys, such as wireworm. These will potentially feed on any crop following a grass ley.

Field History, Rotation & Break crops

Increasing the rotation so maize is grown at a minimum of 1 year in every 3 years, will reduce the population of European corn borer, by removing the host crop it needs to survive on.

Increased seed rate to suit sowing date

Increasing seed rates can compensate for the loss of plants to pests such as wireworm.

Seedbed quality

Poor seedbeds can have two effects on pest damage. Firstly, poor seed/soil contact can cause delays in germination, which can render maize plants more susceptible to pests such as wireworm. Secondly, rough, cobbly seedbeds can delay germination. Firm, fine seedbeds avoid both problems and encourage rapid germination and crop establishment, thus decreasing susceptibility to pest attack.

Diseases

Diseases impact on maize yield is mainly through reducing green leaf area during kernel filling or through whole plant death.

Field History, Rotation & Break crops

Where maize is grown continuously this is likely to increase the build up of pathogens such as fusarium and eyespot. Extending rotation to 1 in 3 years or longer is recommended.

Primary Cultivations / Crop residue burial

Burial of crop debris by ploughing can reduce inoculum for some pathogens which produce inoculum on plant debris. This is most important for pathogens which are initiated from air borne spores, such as eyespot and fusarium, which can infect neighbouring crops. On the negative side the use of ploughing can reduce soil biodiversity.

Varietal choice / Resistant varieties

Eyespot rating in the NIAB description list of maize varieties is a key part of non-chemical disease control. Varieties are ranked based on their susceptibility to the disease.

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