

DOES THE TYPE OF MAIZE AFFECT THE LOSSES DUE TO DISEASE?

There are types (varieties) of maize that are resistant to maize streak virus disease. What this means is that although the maize still gets infected with the virus the amount of green leaf lost due to the yellow streaking is very much lower. Good resistant maize will show only a few dots of streaking on each infected leaf. This ensures that the area of green on the leaves is large and a good-sized cob and more forage from maize should result.

Improved hybrid varieties are being developed, which show good resistance to the virus disease. KH521 was developed at KARI and PAN67 by Pannar Seed Company. They are also resistant to other diseases and produce good size cobs and have medium maturation dates. Farmers in Kiambu have found their taste acceptable. Both of these varieties are now available from seed agents. New varieties are also being developed by KARI. Check with Fresco Seed Company for up to date information.

It is important to buy certified seed of hybrids each season, to make sure that the good properties of the varieties, particularly maize streak virus resistance, are retained and not lost due to cross pollination with local varieties.

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IPM of maize forage dairying website:

<http://www.apd.rdg.ac.uk/Agriculture/Research/CropScience/Projects/IntegratedWeed/index.htm>:

For further information contact the Director, KARI.



The University of Reading



MAIZE STREAK VIRUS DISEASE

AN INFORMATION SHEET

WHAT IS MAIZE STREAK VIRUS?

Maize streak virus causes a disease of maize that produces yellow lines on the leaves called streaking. This yellow streaking reduces the plant's ability to grow and to fill cobs. This is because it is through the green parts of the leaf that the maize plant makes its own food. A maize plant cannot be cured once it

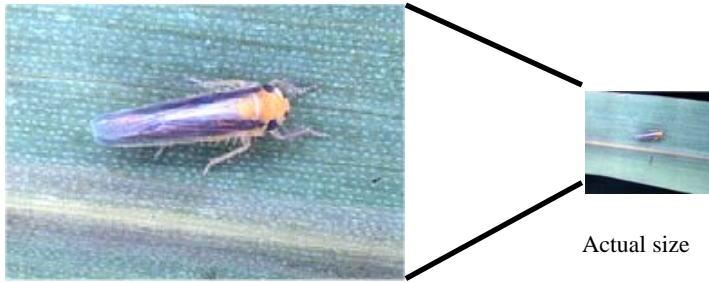


Part of a maize leaf showing the yellow streaking caused by the disease

is infected.

HOW DOES THE DISEASE GET INSIDE THE MAIZE PLANT?

The virus is spread by very small insects called leafhoppers, which feed on grasses by sucking their juices. When feeding on maize they can pick up the virus from an infected plant. Once the leafhoppers have the virus inside them, every time they feed on other maize plants they may give those plants the virus. This is like a mosquito picking up the malaria parasite from one person and then passing malaria on to several other people.



The leafhopper which carries the streak disease (larger than actual size)

CAN THE VIRUS BE SPREAD IN ANY OTHER WAY?

Only the leafhoppers can carry the virus, other insects cannot carry it. The virus cannot pass through the maize seed or through the soil; only the leafhoppers can spread the virus by feeding on the plants. The leafhoppers are normally found in the wild grasses, which they prefer to feed on and to lay their eggs in.

HOW DOES THE DISEASE AFFECT PLANTS OF DIFFERENT AGES?

It is only the growing leaves that can get the virus disease. So when a maize plant gets the disease only the leaves that have grown after infection show the streaking. The later a plant is infected by a leafhopper the less green leaf area is lost due to streaking and the better the yield from the plant. A plant infected when it is young may die or not produce a cob.

WHAT INCREASES OR DECREASES THE AMOUNT OF DISEASE?

- *Growing maize in the shade of trees*
The leafhoppers like the shade and maize grown in the shade of trees is much more likely to get the streak disease than plants out in the open. For this reason, if possible, it is better not to plant maize in the shade of trees.
- *Time of planting compared with other maize in the area.*

The leafhoppers mostly like maize at a height of 25-40cm and it is then that the virus really starts to spread quickly in the fields.

A maize field planted later than others in an area may be the only one at the preferred height and more leafhoppers can collect in the field increasing the chances of heavy infection.

At the beginning of the growing season very few leafhoppers are carrying the virus. As more and more maize plants get the virus the number of leafhoppers picking up the virus and spreading it increases. Maize fields planted later than others in an area can have far more plants infected with the disease because there are many more leafhoppers around carrying the virus.

- *Replanting where seeds have not germinated (gap filling)*
Replanting where seeds have not germinated will also increase the amount of streak because of the leafhoppers' preference for the younger plants in the field and because the numbers of leafhoppers carrying the virus will be high by the time these new plants reach the height of 25-40cm. This does not mean that gap filling should be stopped as many of the plants may still produce a cob of some sort, which is better than none at all from empty stands.
- *Removing diseased plants (roguing)*
Removing diseased plants does not really help because there are many leafhoppers with virus spreading the streak and plants that are pulled out may have produced a cob.
- *Growing maize with other crops (intercropping)*
The leafhoppers that carry maize streak virus can fly and are very active. They move close to the ground hopping from plant to plant in a maize field. It may be possible to make it more difficult for the leafhoppers to move around and to find maize plants by filling the space between maize plants by planting a dense intercrop such as beans or millet.