

# Management of clubroot disease in cabbage

## Recognize the problem

This is a root disease of cruciferous vegetables. It is caused by a soil-dwelling fungus called *Plasmodiophora brassicae*. Diseased plants have swollen roots, are stunted, and wither around noon when weather is hot but recover in the evening when weather cools down. In severe cases, the roots rot and plants die. This fungi-like organism which causes clubroot disease spreads from point to point through contaminated soil, farming equipment or water.

## Background

Soil solarization is a technique of heating the soil by covering it with a plastic sheet in hot weather so that some pathogens in the soil are killed. The soil being treated should be moist. The moisture improves the heat conductivity of the soil. The plastic sheet traps heat energy from the sun between itself and the soil surface. In this situation, the soil becomes hot, causing some pathogens such as *Plasmodiophora brassicae* to die.

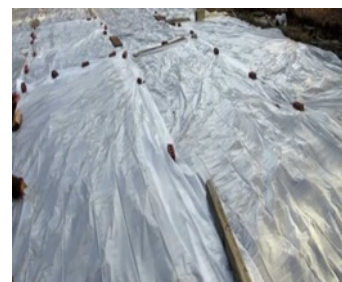
## Management

- Obtain one or more pieces of black or clear polythene sheet (30 – 150 microns thick) which can completely cover the field/area to be disinfested.
- Make sure there will be hot weather for the coming 4 – 6 weeks, preferably in the months of September and October.
- Plough the land to a depth of 25 – 30cm.
- Level area so as to achieve minimal insulating airspace between the soil and plastic sheet when it will be placed.
- Ensure that the soil is moist. If no residual moisture is available, water the soil thoroughly.
- Cover the prepared piece of land with the plastic sheet. Ensure that the sheet is secure enough – not to be blown away by wind. Security of the sheet can be ensured by placing weighty stones or sticks on it.
- Remove the polythene sheet after 4 – 6 weeks and use the land to grow the crop. Do not leave the plastic sheet for more than 8 weeks because this destroys the soil.

Clubroot disease in cabbage.  
(Photo by D. Kachigamba)



Soil solarization process – moist farming land covered with plastic sheets in hot weather. (Photo by Tina Finders, i.ytimg.com)



Scientific name(s) > *Plasmodiophora brassicae*

The recommendations in this factsheet are relevant to: Malawi



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