

# Cabbage – Club root

## Recognize the problem

Club root may develop extensively on plant roots before the first sign (an abnormal wilting and yellowing of leaves, especially on warm days) is noticed aboveground. If the soil is moist, these symptoms may not become apparent until water stress occurs. When infection occurs at an early stage of growth, young plants are stunted and may die, whereas plants infected in a later stage fail to make marketable size heads. When diseased plants are pulled from the soil, the roots are usually swollen and distorted.

## Background

Club root (*Plasmodiophora brassicae*) is capable of surviving in the soil for 7-10 years or longer as resting spores. The resting spores of the fungus can be spread from field to field by infested soil, contaminated water supplies, infected transplants, infested soil on farm machinery, farm tools, and even by roving animals such as cattle. The germination of resting spores requires moist, acid soil and can occur over a wide temperature range of 12-27°C. Disease development is favored by high soil moisture and soil temperatures between 18-25°C.

## Management

- Carefully choose sites for crucifer seedbeds that do not have a history of club root.
- If a field is known to be infested with club root, the soil pH should be adjusted to pH 6.8 to 7.2 with ground limestone (CaCO<sub>3</sub>).
- Always thoroughly clean farm equipment after working in a field suspected of having the club root fungus.
- If available, plant resistant varieties to club root. E.g. Amor, Apollo F1, Deneko, etc.
- Crop rotation with non-crucifer crop like corn or rice.

The symptom of clubroot  
(Photo by Gerald Holmes, California Polytechnic State University at San Luis Obispo, Bugwood.org)



Stem rot symptom (Photo by Gerald Holmes, California Polytechnic State University at San Luis Obispo, Bugwood.org)



Scientific name(s) > *Plasmodiophora brassicae*

The recommendations in this factsheet are relevant to: Cambodia



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