## URBAN FARMER

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**Disease Control: Club root** 

Club root is most commonly found in North American gardens, and its effects are so drastic the disease will reduce plant production and even lead to total crop failure.

#### What is it?

Club root is a soil-borne fungal disease mostly affecting Brassica crops such as cauliflower, broccoli and cabbage. The most commonly affected Brassicas are cabbage and Brussels sprouts. The disease infects the susceptible plants through the root hairs, then causing the diseased roots to swell and become deformed, oftentimes cracking and rotting. Due to this, the plant cannot absorb water or nutrients well. Since the disease is a fungus, it is spread by spores, which can be carried by the wind, watering methods or gardening tools. The disease mostly prefers excessive moisture and a low soil pH, but it can survive in other conditions as well. The spores can survive in soil for as long as 10 years.

Other than affecting the roots, symptoms also include the Brassica plant wilting during the day and reviving itself at night. The plant's older leaves will yellow and wilt.

#### How to cure it:

Although this is a soil-borne fungal disease, fungicides cannot treat it. The easiest way is not to cure club root once it occurs, but to prevent the disease from ever harming your crops. Once you discover a plant has been infected by club root, remove it from the garden and discard it. Also, be sure to sterilize all of your garden tools.



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Once a plant is infected, it is possible the spores have spread to the soil as well. To treat infected soil, you must solarize it by leaving a clear, plastic tarp over the soil's surface for four to six weeks during the hottest part of the summer. The solarization process also will reduce soil pests like nematodes and help control weeds.

### How to prevent it:

Preventative measures include choosing resistant species of Brassica whenever possible, or by planting guaranteed disease free seeds. Also, prevent the disease by keeping a clean garden and rotating crops so Brassicas don't grow in the same spot year after year. Don't plant Brassicas in the same spot sooner than five years since the last time you planted them there, otherwise the rotation may not be affective. Another way to prevent club root is by controlling weeds that may also be susceptible to the disease. A soil pH of at or above 7.2, if your plants will stand it,



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also is a preventative measure. Be sure to use irrigation methods other than overhead watering, as this process may more easily spread spores.

Another way to prevent club root is by using cover crops in the spring, specifically rye grass as it can inhibit the club root fungus. Once the rye grass germinates, wait two or three weeks and then dig it back into the soil.

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