

# Clubroot of Canola Alert



Figure 1. A thin stand as a result of clubroot

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In 2013, clubroot of canola was identified in North Dakota for the first time.

## What is Clubroot?

Clubroot is caused by *Plasmodiophora brassicae*. The pathogen survives in the soil and infects the roots of canola and other Brassicaceae plants (such as broccoli, cauliflower, Shepherd's purse and wild mustard), causing a galling and swelling, and giving them a "club" appearance.

## Where Did it Come From?

The pathogen has been spreading across Canadian canola country since 2003, when it first was identified in Alberta. Since then, the disease has been found in Saskatchewan (2011) and Manitoba (2012).

## How Did it Get Here?

Anything that moves soil can move the pathogen. The pathogen likely moved into North Dakota through movement of soil on farm equipment, wind erosion or flooding.

## What Does it Look Like?

Damage from clubroot often starts in small patches in fields. Plants may be stunted, yellow and generally unhealthy looking, and the stand may be thin (**Figure 1**). Roots of those plants will be swollen and shaped like clubs (**Figures 2 and 3**). Young galled roots will be porous, and filled with cracks and air pockets. As infected roots age, they become brittle and may break at the soil line (**Figure 4**).

## What Conditions Favor Clubroot?

Acidic soils (low pH), warm temperatures (greater than 60 F) and wet soils favor infection and disease development. Yield loss depends on these factors plus the time of infection; earlier infection results in higher yield loss.



Figure 2. Clubroot symptoms



Figure 3. Clubroot symptoms

## What Can I Do?

- **Keep an eye on your canola.** Inspect suspicious plants (stunted/yellow) by digging out the roots carefully and examining them for symptoms. Areas in the field where clubroot is most likely to be observed first include field entrances, low spots and areas of low pH.
- **Reduce the spread.** Although you can't prevent the spread by wind or water, cleaning soil off equipment that has been in areas known to have clubroot has been shown to reduce and delay spread. If clubroot is identified on your farm, work that field last to minimize the spread to other fields.
- **Manage the disease.** Few hybrids with resistance are available, but more will be coming. Lengthening the rotation can help reduce the level of the pathogen in the soil, but it will not eradicate the problem. Fungicides are not recommended.



Figure 4. Stem breakage caused by clubroot

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contact your county Extension agent.**

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