Tips For Minimizing Risk of Root Rots in Pea and Lentil Before Seeding

Root rots are still the number one concern going into 2020 for pea and lentil growers. Decisions at or before seeding time can help minimize the risk. Both peas and lentils are equally susceptible to Aphanomyces with all varieties being susceptible. There are some varieties or types of both crops that have higher tolerance to Fusarium, which could help when both pathogens are present (which is usually the case). The following list identifies some tips to help minimize the risk of root rots:

- **Rotation** – 1 in 4 minimum and up to 1 in 8, or 1 in 10 years if field is infected with Aphanomyces
- **Moisture conditions when last pea/lentil crop was grown** – avoid planting peas or lentils on fields where the previous pea or lentil crop was grown under wetter conditions (ex. 2012, 2014, and 2016 for most of Saskatchewan)
- **Maximize the health of the seed/seedlings** – use seed treatments to manage all the pathogens, handle seed gently, avoid too much seed-place fertilizer, avoid deep seeding

- **Rolling** – do not roll when the soil is wet. Wait until the soil dries out. Peas and lentils can be rolled after emergence with no effect on yields. There is more information on Rolling Pulse and Soybean Crops
- **Fertilizer** – recent research suggests higher rates of fertility can help protect yield under moderate disease pressure. The theory is that unhealthy roots are unable to scavenge for nutrients and therefore having nutrients in a more available form that can be easily accessed, can help to feed the crop
- **Variety selection** – recent evaluations of varieties have identified differences in variety tolerance to Fusarium which can help manage at least one of the pathogens involved in the root rot complex. Tannins in the seed coat also help with resistance to seed-borne pathogens such as Fusarium
- **Deal with compaction or avoid fields with compacted areas. Compaction adds stress to roots and plants, and can impact soil moisture levels**

For more information on the pathogens and how to manage, there are a number of references worth putting in your knowledge toolbox:

- Aphanomyces Root Rot in Pulse Crops
- Fusarium Root Rot in Pulses
- Testing for Aphanomyces
- Aphanomyces Root Rot in Peas and Lentils in Western Canada
- Pulse Agronomy Webinar: Biology of Root Rots (Dr. Syama Chatterton, Research Scientist with AAFC, March 25, 2020)

Figure 1. Peas showing healthy root systems (left) and root rot symptoms (right).