In western Canada, alternaria black spot is caused mainly by *Alternaria brassicae* and to a lesser extent by *A. raphani*. It is most damaging on spring sown Polish canola (*Brassica rapa*). Researchers at Agriculture and Agri-Food Canada in Saskatoon conducted several studies from 1990 to 1998 to determine the impact of alternaria on canola yields, and evaluate control measures and management practices. The results outlined several options to reduce the damage from this disease including use of fungicides, timing of swathing and methods to reduce seed infection.

The objective of the first study was to assess disease control methods that included the use of fungicides and management practices in field trials. Researchers wanted to determine the effect of the disease on yield using control procedures such as fungicide rate and timing and the use of swathing. Field trials were conducted in commercial fields of Polish canola from 1995 to 1998. Fungicide treatments using Rovral Flo were applied at 30% bloom and 95% petal drop at 250 and 500 g a.i./ha using a water volume of 100 L/ha and a hand-held sprayer. Experiments were also conducted from 1990 to 1997 comparing the effect of swathing versus straight combining on seed infection by Alternaria species and quality of harvested seed. This was done at several locations in Saskatchewan using a number of cultivars of *B. rapa* and *B. napus*.

Growth chamber studies were also conducted to determine the effect of alternaria black spot on seed quality and seed vigor of Polish canola. These experiments were conducted under controlled conditions to help confirm the effect of the disease in the field. Other laboratory studies were conducted to determine the effect of seed storage conditions on the survival of alternaria in the seed. Assessments were made to determine where the pathogens were located in the seed as well as assessing various methods that may eliminate the fungus while maintaining germination levels. This included microwave and hot water treatments as well as long term storage at different temperatures.
Field studies were conducted to determine disease development of alternaria black spot in Polish canola. The study was done to determine the increase of disease symptoms on pods at the time of seed development during two relatively high disease years, 1996 and 1998.

Overall, the results from this study indicate:
1. Alternaria black spot can reduce yields by as much as 40% in Polish canola.
2. The disease also affects seed quality by reducing seed weight and germination while increasing green seed count.
3. Disease development can be rapid on plants during seed development growth stages.
4. Spraying with a fungicide, such as iprodione (Rovral), will provide effective control of the disease.
5. Swathing at the optimum time will reduce some losses from black spot compared to swathing at later growth stages.
6. Seed infection by pathogens occurs mainly in the seed coat, and the fungus dies out over time.
7. Hot water treatment can reduce seed infection while maintaining germination, but microwave treatments that reduce seed infection also reduce seed germination.
8. The main effect of seed infection by *A. brassicae* is to reduce emergence.

There are several options available to reduce the damage from this disease. Argentine canola (*B. napus*) can be grown where possible, as it usually suffers less damage than Polish canola. Iprodione can be applied to control alternaria black spot as it is registered for application at the 30% bloom stage. However, the disease can develop rapidly if conditions are favourable and predicting the weather during pod filling so far in advance is not possible. This means growers who consistently have a black spot problem might be advised to spray each year. Timely swathing rather than straight cutting is also recommended when alternaria black spot is a problem because this shortens the period of time when damage from the disease can occur.