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Symptoms and Control Measures of Diseases of Pea

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Pea is an important pulse crop grown all over India. An excellent economic return can be obtained from pea cultivation provided farmers follow scientific method of cultivation *viz.*, sowing at appropriate time using clean healthy seeds of good varieties suited to sowing date or agro climatic condition of the region, application of desired doses of manures and fertilizers, treatment of seed with *Rhizobium* for enhanced nitrogen uptake, careful application of pesticides based on occurrence and severity of insect and diseases etc. In India, several diseases have been found to attack this crop and some of these diseases are responsible for serious yield losses particularly if control measures are not adopted in time. Diagnostic symptoms and control measures against important diseases of pea are being described in the present article.

Damping off or seed rot:

Symptoms: The seeds are rotted and killed before germination. In certain cases seeds may germinate but killed immediate after germination.

1. Root rot:

Root rot and wilt diseases are observed in most of the pea growing areas.

Symptoms: The disease affected plants show yellowing of leaves followed by wilting and drying of plants. The roots of diseased plants show reddish to dark brown discolorations followed by rotting and decaying of roots.



Symptoms of damping off disease



Plants showing root rot symptoms



Control:

- Seed should be treated with Bavistin or Thiram at the rate of 2 g/ kg seed before sowing
- Avoid early planting particularly in those fields where root rot occur in severe form almost in every year.
- Avoid excessive irrigation as this disease favoured by high moisture content of soil.

2. Wilt:

Symptoms: Leaves become yellow in colour followed by drying and shedding of leaves at advanced stage of the disease. If the root and stem of diseased plants are split open, orange brown to black discolorations in the xylem vessels are commonly observed. The feeder roots are destroyed. There is decrease in pod formation and seed size.



Wilt symptoms in pea plants and view of wilt affected field

Control:

- Treat the seed with fungicides before sowing as mentioned in case of root rot.

3. Powdery mildew of pea:

Symptoms: This disease is most commonly observed and seriously affects the yield whenever the disease severity becomes higher. Dry weather favours this disease. In general early maturing varieties are less damaged since this disease starts appearing in the month of January particularly in northern India. White powdery growth is observed on both sides of leaves and other above ground plant parts viz., stem, tendrils and pods.



Symptoms of powdery mildew on leaves



Symptoms of powdery mildew on pods



Control:

- Spray 0.25% wettable sulfur (sulfex) or 0.1% Bavistin, Karathane E.C. or Calix in whenever the first symptom of the disease is noticed. Depending on disease severity 2-3 sprays at 10-12 days interval should be given.
- After harvesting of crop, collect the diseased plant debris and burn them.

4. Rust:

This disease may cause serious damage if high relative humidity and low temperature prevails during the month of February.

Symptoms: Yellow pustules appear on both sides of leaves which later on become brown or black in colour. Such pustules can also be seen on stem tendrils and pods.



Rust symptoms on pea plant



Rust symptoms on leaves

5. Downy mildew of pea:

This disease is more prevalent in Indo-gangetic region. High relative humidity is favourable for downy mildew development.

Symptoms: Yellow to brown colour patches are visible on upper surface of leaves. White or grayish violet cottony growth of fungus is seen on lower surface corresponding to yellow or brown patches appearing on upper surface. Growths of the plants are checked and stems get distorted. Pale green to brown coloured lesions are also observed on pods resulting in reduced seed size.



Symptoms of downy mildew on leaves



Symptoms on pea pods

Control:

- Clean healthy seeds from disease free crop should be used.
- Diseased plant debris should be burnt after harvesting the crop.



6. Bacterial blight of pea:

Symptoms: Water soaked elongated lesions appear on all above ground plant parts such as leaves, stem and pods. The lesions on leaves and stem turned into brown colour whereas in pods the lesions remain water soaked in appearance.



Water soaked lesions on pea plant due to bacterial blight



Symptoms of bacterial blight on pea pods

Control:

- Seeds from disease free crop should be used.
- Avoid excessive irrigation and ensure better drainage facilities
- Destroy diseased plant debris as has been mentioned earlier.
- Weeding should be done regularly.
- Crop rotation with non-leguminous crop for a period of 2-3-years should be followed in areas where the severity of this disease remains high

7. Pea mosaic:

Symptoms: The diseased plants remain stunted in growth and pale in appearance. Yellow and green mosaic pattern can be observed on young leaves. Light brown spots could be observed on stem, petioles and tendrils. Reduction in size and Number of flowers and pods are also noticed.



Symptoms of pea mosaic



Pods of pea affected due pea mosaic

Control:

- This disease is spread by aphids. For controlling aphids, spray one liter Dimethoate 30 EC (Rogor) or 1.25 liter methyl demeton 25 EC (Metasystox) or formathion 25 EC (Anthio) in 150-200 liters of water for one acre at an interval of 15 days. At least a gap of 10 days should be given between spraying of pesticides and harvesting of pods.