

## LATE BLIGHT OF POTATO

### Phytophthora infestans

Late blight is the most destructive disease of potato in the state and causes significant losses in potato yield to the extent of 30-80%, in late sown crops in epidemic years. In the past years, severe epidemics of the disease have appeared in the Jammu Division.



Late blight has been occurring frequently in the districts of Jammu, Rajouri, Kathua, Poonch Ramban, Reasi and Udhampur, It is usually observed first in certain pockets of R S Pura and Marh areas and spreads further to adjoining areas under favorable weather conditions.

The favourable conditions for disease development such as prolonged winter rains, high humidity, cloudy and foggy weather if prevalent, the disease appears in an epidemic form and destroys the whole crop within a short period. It may take about three weeks for the first disease appearance for development of an epidemic situation if favourable weather conditions continue.

In Jammu plains where successive crops are grown such as early, late and spring crop (Sept-Jan.), the previous infected crops often serve as the additional source of huge primary inoculum. Symptoms:

Small water soaked spots develop on the tips, margins or any other part of the leaves which enlarge to form irregular dark brown lesions. During morning hours, a whitish cottony growth of the fungus is visible around the dark brown lesions on the under surface of leaves especially when weather remains sufficiently humid. If the weather turns dry, the lesions dry up. Under favorable environmental condition (low temperature, high humidity) the lesions grow rapidly killing the entire leaflets and spread to the stem





killing the entire plant. The brown elongated lesions may appear on the stem near the growing point or at the nodes and extend both up and down the stem. Infected tubers show irregular shallow or sunken reddish brown patches. The underlying infected tissue is spongy and rusty brown to

varying depths. Initially, the lesions on tuber surface are firm and dry but later on these are often invaded by secondary pathogens resulting into soft rot. If humid climate continues the whole crop maybe killed within 7-10 days giving blighted appearance and a distinctive odour comes out from the severely affected fields.

#### **Disease development spread and Forecast:**

The infected seed tubers serve as a main source of the disease. Early sown crop (September sown), which is harvested in early November, generally escapes the attack of late blight due to high soil and air temperature. It generally appears in first or second week of November when the main season crop is 40-45



date old. When winter rains occur in Nov-Dec. raising the humidity to more than 90% and cloudy or foggy days persist for 6-7 days with atmospheric temperature in the range of 10-20 degrees C, late blight develops rapidly with multiple infections on adjoining plants and then on entire field through spread by the air borne sporangia of the fungus. Sporangia washed by rain cause infection on tubers in the soil, partially exposed tubers stored in the cold storage units along with healthy tubers serve as the main source of disease for the crop of next year.

## Forecasting

### Rainy Days

Cloudy and foggy weather for 5 days and RH > 85% for 50hrs. 5 days morning temperature 7.2-26.6 degrees C for > 105 hrs.

### Non rainy Days

Cloudy and foggy weather for 7 days and RH > 85% for 60hrs. 7 days morning temperature 7.2-26.6 degrees C for > 120 hrs.

### Control:

1. Diseases free certified seed should be used; infected tubers and culled piles stocked near cold stores should be destroyed.
2. Follow high ridge cultivation and proper earthing up to prevent tuber Infection and restrict irrigation during cloudy days.
3. Spray the crop with Indofil M-45 or Kavach @ 500-700 gm/acre as Prophylactic sprays in the 1st week of November before the disease appearance and repeat 5 times at 7 day intervals. Under heavy disease risk situation, give 3<sup>rd</sup> and 4<sup>th</sup> spray of Ridomil MZ @ 700 gm/acre at 1 day interval and then give 5<sup>th</sup> spray of Indofil M-45 Kavch.
4. Use Acrobat (200 gms.)+ Polyram (400 gms) per acre as spray in case of severe disease infection
5. Avoid the use of self made mixtures of Metalaxyl with Indofil-45 as mixtures in improper ratio may cause development of resistance in the pathogen.

Important
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