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## Survey of the disease incidence of *Cercospora* leaf spot of Mungbean in Eastern Uttar Pradesh

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### Abstract

Mungbean *Vigna radiata* (L.) is short duration legume crop belongs to family *Leguminosae*, Mungbean is important pulse crop of India, it is widely cultivated throughout the primarily a rainy season crop but with the development of early maturing varieties, though they get highly affected from the disease. Hence a survey was taken to evaluate the percentage of disease incidence in Eastern Uttar Pradesh during 2018-19 and 2019-20. In year 2018-19, the highest incidence of disease was recorded at Chandauli (42.62), followed by Mirzapur (42.23), Varanasi (41.10), Jaunpur (39.50), Azamgarh (32.10) and minimum was recorded in Bhadohi (30.50). The result of year 2019-20 reveal that the disease incidence varied from 32.50% to 42.00% at different location. The highest incidence of disease was recorded at Mirzapur (42.00), followed by Jaunpur (40.00), Varanasi (39.65), Azamgarh (39.10), Chandauli (38.00), and minimum was recorded in Bhadohi (32.50).

**Keywords:** Mungbean, disease incidence, districts, survey

### Introduction

Mungbean *Vigna radiata* (L.) is short duration legume crop belongs to family *Leguminosae*. Mungbean was originated from India. Mungbean is important pulse crop of India, it is widely cultivated throughout the primarily a rainy season crop but with the development of early maturing varieties, it has also proved to be an ideal crop for spring and summer season. Mungbean is the excellent source of protein and vitamins (Gopalan *et al.*, 1995) [5]. Mungbean, being a short duration crop, fits well in various multiple and inter-cropping systems. After picking of pods, mungbean plants may be used as green fodder or green manure. India contributes to the major share of mung bean in the world market with a production of 1.9 Mt in which Rajasthan with 42% area and 39% production outshined in the total mung bean production in the country. In Uttar Pradesh area under mungbean cultivation is 72000 ha production of 4000 tonnes and productivity 556 kg/ha. (Anonymous, 2012) [2]. Among these diseases, leaf *Cercospora* leaf spots (*Cercospora beticola*) has been identified as an economically important disease in this region which causes considerable yield losses 23%. Maximum loss of 61% was observed in case of grain. These conidia play a role of primary inoculum in disease incidence. Rain splashes also play as a major role in dispersal of conidia (William, 1987) [9]. *Cercospora* leaf spot is considered as an important pathogen not only due to its widespread range but also due to the susceptibility of many commercial crops to this disease. Described the symptoms of *C. beticola* on *V. radiata* as a fungus producing definite spots on leaves, which were at first brown, later turning grey or dirty grey with narrow reddish brown margin bearing fructifications on both the surfaces. Warm wet conditions are favourable for *Cercospora* leaf diseases. Epidemiological conditions for the production of conidia require 90-100 percentage relative humidity and 20-26 °C temperature. For germination and to cause the infection the ideal temperature recorded is 25-30 °C.

### Material and Methods

The present investigation was done in district Jaunpur and adjoining area of Jaunpur mainly Varanasi, Chandauli, Bhadohi, Azamgarh, Mirzapur. The severity of disease was recorded in percentage of disease incidence with the formula:

$$PDI = \frac{\text{Number of infected plant}}{\text{Number of plant screened}} \times 100$$

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## Result and Discussion

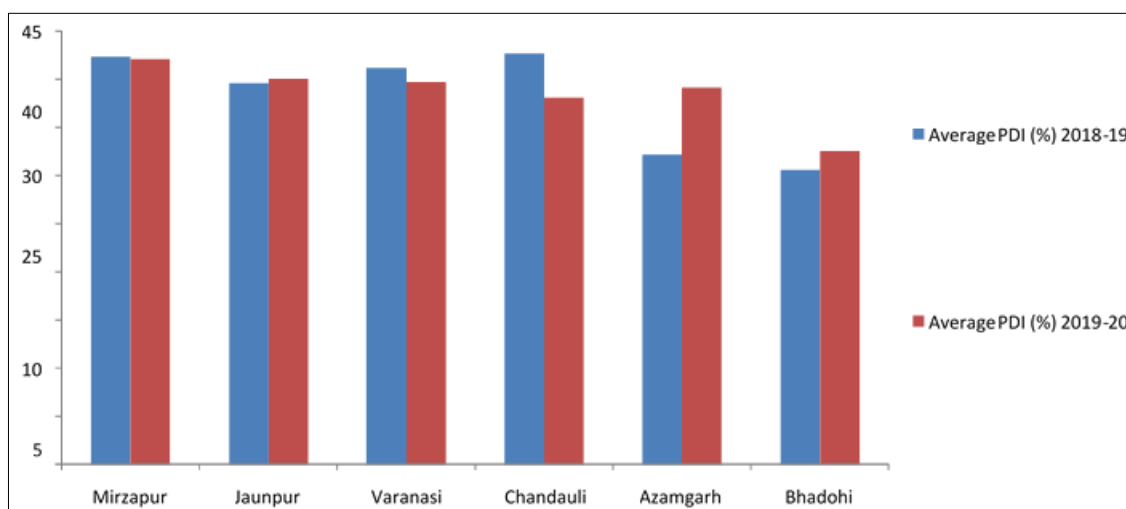
The survey is done in District Jaunpur and adjoining area Jaunpur mainly Varanasi, Chandauli, Bhadohi, Azamgarh, Mirzapur. The survey is done to record the severity of disease in percentage of disease incidence in year 2018-19 and 2019-2020. The result of year 2018-19 and 2019-20 are presented in Table-1 reveal that the disease incidence varied from 30.50% to 42.62% in different location of Eastern Uttar Pradesh. In year 2018-19, the highest incidence of disease was recorded at Chandauli (42.62), followed by Mirzapur (42.23), Varanasi (41.10), Jaunpur (39.50), Azamgarh (32.10) and minimum was recorded in Bhadohi (30.50). The result have coincide with the finding of (Khare *et al.*, 1974)<sup>[6]</sup>.

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(42.00), followed by Jaunpur (40.00), Varanasi (39.65), Azamgarh (39.10), Chandauli (38.00), and minimum was recorded in Bhadohi (32.50). The result have coincide with the finding of (Kimber *et al.*, 2010)<sup>[7]</sup>

**Table 1:** Incidence of *Cercospora* leaf spot of Mungbean at different location in Eastern Uttar Pradesh 2018-20

S.N	Location	Average PDI (%)	
		2018-19	2019-20
1.	Mirzapur	42.23	42.00
2.	Jaunpur	39.50	40.00
3.	Varanasi	41.10	39.65
4.	Chandauli	42.62	38.00
5.	Azamgarh	32.10	39.10
6.	Bhadohi	30.50	32.50



**Fig 1:** *Cercospora* leaf spot of mungbean at different location in Eastern Uttar Pradesh 2018-19

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