



RESEARCH ARTICLE

# Survey on natural occurrence of diseases in potato at various locations of Odisha

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## ABSTRACT

Potato is a high yielding short duration crop and produces statically more edible energy, protein and dry matter per unit area and time than many other crops. Major contributing factor for reduction of yield in the state (14.1 q/h) of the crop than national level (18.8 q/h) was due to occurrence of different diseases. The present study was conducted at 7 locations and 6 districts of Odisha to assess the percentage of disease incidence following fixed plot survey in three consecutive years 2005-06 to 2007-08. The survey revealed that early blight, late blight, black leg, bacterial wilt and mild mosaics were different diseases in growing stage while the diseases like brown rot, soft rot and scab could be noticed at the harvesting stage.

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## INTRODUCTION

Potato is the number one vegetable crop in India. Odisha occupies 15<sup>th</sup> position both in area and production in the country. It is the 4<sup>th</sup> important vegetable crop of the state and cultivated in all 30 districts of the state in winter season and also in *Kharif* season in undivided Koraput and Phl bani districts. The prevalence of warm humid condition, wide host-range, high water table, fluctuating temperature and varied soil factor favour both fungal and bacterial diseases at different growth stages of the potato crop in coastal plains of Odisha (Shekhawat, *et al.*, 1978 and Gadewar *et al.*, 1999). Reduction in plant population due to pre and post-emergence rotting of seed tubers, wilting of the plants even before tuberization and heavy foliar damage due to different microbial association sometimes warrants the economic yield of the crop resulting in about 100 per cent loss in crop yield. Considering the extensive losses in tuber yield by different diseases, fixed plot survey was under taken to assess the percentage of disease incidence mostly on blight, black leg, bacterial wilt, brown rot, soft rot etc. at 7 different location of Odisha state, during three consecutive cropping years, 2005-05, 2006-07 and 2007-08.

## MATERIALS AND METHODS

Seven different locations, such as, Bhubaneswar (the farm of All India Co-ordinated Research Project on Potato), Salipur, Jagatsinghpur, Jajpur, Bolanga, Balipatna, Kendrapara where potato is grown intensively irrespective of years were selected for the study. In each location, an area of 500sq.mtr was selected where potato was grown following standard method of cultivation with FYM 10t/ha, NPK @ 120:80:100 kg/ha, 60x20 cm spacing was maintained between row to row and plant to plant. The planting of potato tubers was done coinciding with the farmer's practice of the area.

Three popular potato cultivars Kufri, Ashoka, Kufri, Chandramukhi (80 days duration) and Kufri, Jyoti (90 days duration) were grown in the specified plots in order to maintain the uniformity in all the locations. The trial was continued for three consecutive years starting from 2005-06 to 2007-08. Observations on natural occurrence of different diseases in potato were recorded at 70 days of planting and at harvest.

### Early and late blight :

Standard scale was used to record the disease