Research Note :

Influence of different dates of potato planting on stem necrosis diseaese

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SUMMARY

An experiment was conducted during *Rabi* seasons of 2002-2003 at Potato Research Station, S.D.A.U., Deesa (North Gujarat) to determine the effect of different dates of potato planting on stem necrosis disease incidence and index. Results revealed that fourth date of planting (19th November) was found effective for minimizing disease incidence (12.45%) and index (0.82) as well as higher tuber yield (225.88 q/ha) followed by third date of planting (9th November) which recorded disease incidence 15.15 per cent and index 1.10 with tuber yield of 217.10 q/ha. Considering the results, Gujarat potato growers are to be advocated to grow the crop between these stipulated period to avoid stem necrosis disease of potato.

Key words : PSND, Tospovirus, Planting date, Incidence, Index, Potato stem necrosis disease

Potato is an important cash crop in the western plains of India wherein Gujarat state is accredited with high productivity of potato. Potato stem necrosis disease (PSND) caused by a tospovirus transmitted by thrips vector (Paul Khurana *et al.,*1998) is a limiting factor for potato cultivation in Northern Gujarat region due to its severe regular appearance on the crop since last few years. It is also prevalent in almost all the potato growing areas of the state in mild to severe form as it is favoured by high temperature (>30^0 C) and dry weather conditions.

Considering the economic importance of the disease, an experiment was conducted at Potato Research Station, S.D.A.U., Deesa (North Gujarat) in Randomized Block Design with four replications. Five dates of planting were decided starting from 20th October at 10 days interval and susceptible potato variety Kufri Bahar was kept for the experimentation. The observations on disease incidence and index were recorded at 20 days before harvesting on the basis of number of infected plants and severity of the disease by selecting randomly 20 plants from each treatment. Per cent disease incidence and index (0-5 scale) were worked out by following the formula given by Paul Khurana *et al.*(1997).

Results revealed from the data presented in Table 1 and Fig. 1 that all the five different dates of potato planting differed significantly in respect of disease incidence and index as well as yield of tuber. There was significant progressive reduction in the incidence and index of disease in almost all the successive planting dates. Amongst the different dates of planting, fourth date (19th November) recorded minimum disease incidence (12.45%) and index (0.82) followed by third date of planting (9th

Table 1 : Disease incidence, disease index of PSND and potato yield as influenced by planting date cv. KUFRI BAHAR

Planting date	Disease incidence (%)	Disease index (0-5 scale)	Yield (q/ha)
20th October	39.53	2.77	154.28
30th October	26.80	1.75	196.95
9th November	15.15	1.10	217.10
19th November	12.45	0.82	225.88
29th November	10.68	0.66	176.07
S.E. (±)	1.09	0.10	11.34
C.D. (P=0.05)	3.34	0.31	34.96
C.V. %	10.38	14.22	10.13

0 = Free, 5 = Maximum Disease

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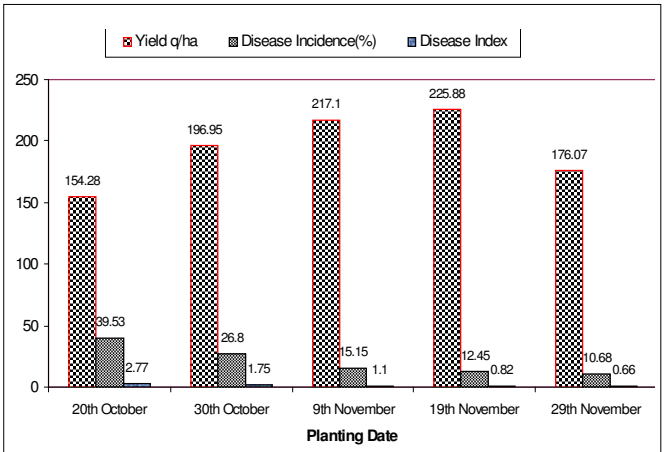

Fig. 1 : Percentage disease incidence, disease index of PSND and potato tuber yield as influenced by different planting date (cv. KUFRI BAHAR)

November) which recorded disease incidence 15.15 per cent and index 1.10. both the planting dates stood at par with each other but were significantly superior over rest of the planting dates.

It is apparent from the Table 1 and Fig. 1 that maximum tuber yield (225.88 q/ha) was obtained in forth date of planting (19th November) which was statistically at par with third date of planting *i.e.* 9th November (217.10 q/ha).

Conclusion :

Gujarat potato growers are to be advocated to grow the crop in between 9 – 19th, November to minimize stem necrosis disease infection in potato.

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