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Influence of sowing method on seed yield of radish (*Raphanus sativus* L.)

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Radish (*Raphanus sativus* L.) is a popular root vegetable grown throughout the year on commercial scale and as a kitchen garden crop. It is a good source of vitamin C (ascorbic acid), containing 15-40 mg per 100 g of edible portion and supplies a variety of minerals.

Radish is cultivated throughout India including West Bengal, Bihar, Uttar Pradesh, Punjab, Assam, Haryana, Gujrat and Himachal Pradesh. Radish cultivars available in India can be classified into three groups so far as seed production is concerned.

i) Winter radish or Japanese radish (biennial) which produces seeds only in the temperate hills of India.

ii) The second group includes summer radishes of temperate regions (e.g., Rapid Red White Tipped). These cultivars, though very quick in root development, behave just like winter radishes for seed production and,

iii) The third group includes cultivars which produce seeds freely in the plains but can produce good seeds in the hills also.

Seed of radish can be produced by two methods i.e. root to seed and seed to seed methods. Present investigation was conducted to find out the effect of seed production methods on seed yield of radish under irrigated conditions in *tarai* region.

The experiment was conducted in replicated trial at Vegetable Research Centre, GBPUA&T, Pantnagar during 2009-10, with radish variety Japanese White. Root of Japanese White is cylindrical, stumpy, 22-25 cm long and 5 cm in diameter, skin snow white, flesh crisp, solid and mildly flavoured. It matures in 45-50 days. It is in demand in *tarai* region of Uttarakhand. The experiment was conducted with two treatments i.e. seed production methods (root to seed and seed to seed methods) in 5 replications. The seeds were sown in the month of October. 2009 at Vegetable Research Centre and the plot size was 1x1 m^2.

In first treatment, plants were left to produce seed whereas, in second treatment when the roots are fully mature, they were uprooted and after selection of roots, the stecklings were prepared by cutting one third of top and about one half portion of the roots. The stecklings were transplanted in 60 cm row to row distance and 30 cm plant to plant. Same population was maintained in first treatment by thinning the plants in the plot. At flowering, insects population was maintained by not spraying the insecticides as flowers of radish are cross pollinated by honey bees and some other insects.

Table 1: Effect of sowing method on seed yield of radish var. Japanese White under irrigated conditions.

Sl. No.	Seed production method of radish var. Japanese White	Mean ((kg/m^2)	Increase over root to seed method
1.	Root to seed	0.0442	-
2.	Seed to seed	0.0650	47.51%
	SEM	0.0004	
	CD at 5%	0.0017	
	CV%	1.7696	

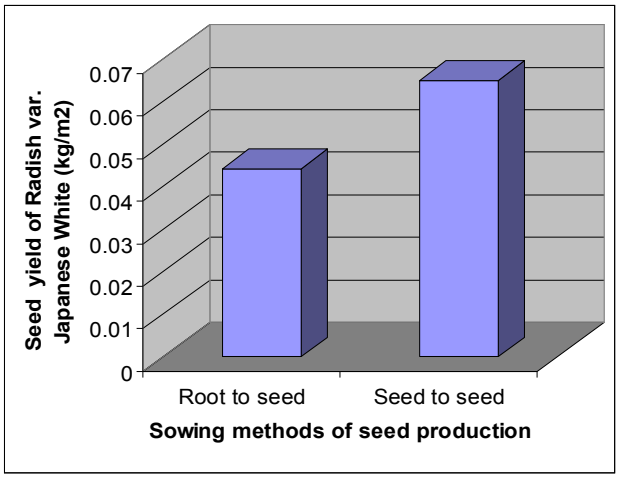

Fig 1: Effect of sowing method on seed yield of radish var. Japanese White under irrigated conditions of *tarai* region.

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Observation on seed yield was recorded and data was statistically analysized for scientific interpretation. Table-1 shows that increased seed yield of radish var. Japanese White was obtained in seed to seed method (0.0650 kg/ m^2) as compared to root to seed method (0.0442 kg/ m^2). Fig. 1 and Table-1 shows that the increase in seed yield in seed to seed method is 47.51% over seed yield in root to seed method. This result was also confirmed by Watts and George (1957).

The result of present experiment indicate that average seed yield is higher in seed to seed method. However, this does not facilitate selection of true to the type roots, which are required to maintain genetic purity as radish is highly cross pollinated crop. Therefore, seed to seed method of radish seed production can be adopted in final stage for multiplication of genetically pure seed. However, root to seed method is preferred for raising nucleus seed (Karivarapharaju *et al.*, 1998) and to purify an impure seed stock.

References

Watts LE and George RAT (1957) Classification and performance of varieties of radish. Eighth Annual Report of National Vegetable Research Station, pp 3-15.

Karivarapharaju TV, Palanisamy V and Vanangamudi K (1998). South Indian Hort., 36:81-82.