THINK INDIA Journal

ISSN:0971-1260
Vol-22-Issue-16-August-2019

Pathogenicity in *Raphanus Sativus* L. And Its Control

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ABSTRACT

Seed diseases are caused by different kinds of micro-organisms, seeds have adverse impact on agriculture production and economy worldwide. There are several seed borne fungi & pathogens, which cause substantial yield loss in whole world. A range of conventional and modern techniques employed for seed borne fungal detection and different control strategies including chemical and herbal methods have been reviewed in present paper. The study on radish seeds thus confirmed that untreated seeds in majority of cases get deteriorated by fungi. On the other hand treated seeds with various fungicides show general saprophyte like *Aspergillus* showing that treatment with seed dressing chemicals reduces fungal population on the seeds and thus it may be beneficial.

INTRODUCTION

Radish (Raphanus sativus L.) is the most important and inexpensive component of a balanced diet and plays an important role in overcoming micronutrient deficiencies. Radish is related to family Brassicaceae. In Japan a sprout of radish is known as "Kaiware-daikon". It is very popular and is used as a vegetable, and recently in Japanese cuisine in Western countries, it has become very popular. Because of a high oil content of radish seeds, ca. 40%, it is grown as an oil crop [1].

This comes from the wild radish in southwest China. Siliques or fruits of this plant has 2 parts, i.e., from one end a beak is formed and another part has halves, known as the valvar part [2]. Radish is very important and commonly cultivated vegetable in the world because of its taste and high nutritive value and also for its diversified use. Radish is rich source of Vitamins and minerals. Radish has many medicinal uses. The salad and extract of the fruit is digestible good for health and mild aperients, a promoter of gastric secretion and a blood purifier. Radish fruit is also known for vegetables of diet food because of high moisture content and high fibre content. Productivity of radish all over world is estimated at 7 million per year, near to 2% production of total world's vegetables. The average yield of radish is low as compared to its yield potential. Many diseases are responsible for low yield of radish. Every year new diseases are reported. They can cause about 20 to 30 % yield lose every year. In general the fungi causing diseases on radish seeds are *Aspergillus. niger, A. fumigatus, A. flavus, Alternaria. Alternate, Bipolaris* spp., *F. oxysporum, F. semitectum, Rhizoctonia* spp., *Ascochyta* spp.[3]

ISSN:0971-1260
Vol-22-Issue-16-August-2019

EFFECT OF SEED MYCOFLORA ON PLANTS AND THEIR YIELD

Radish cultivation is also used for avoiding soil erosion and suppressing weeds is a very common practice in USA and Canada [3]. Most of the cultivars of radish are vegetables bearing very thick and fleshy roots. [4,5] have observed that quantitative trait loci (QTLs) which controls root shape and color. Radish is generally very tolerant to high salt concentrations, this kind of tolerance of *Raphanus sativus* var. raphanistroides is very high [6].

Seed borne mycoflora associated with radish seeds *A. niger, A. fumigatus, A. flavus, A. alternate etc.* These fungi affect the vigour and germination of seeds. Thus due to seed borne diseases there is a reduction in the productivity, resulting in failure of fulfilling the requirements of radish seeds. The control measures may be useful for increasing the supply to complete the demands of seeds. Seed borne fungus may control easily compared to the other fungi. For controlling the seed borne fungi different types of fungicide, herbal and chemicals, are used.

According to Biniek and Tylkowska [7] Thiram has the ability to protect tissues of carrot seeds and it is very helpful in removing Infections from *A. radicina*. Galperin *et al*. [8] observed that in corn seeds the pathogen *Fusarium moniliforme* can be controlled by treating them with prochloraz treatment. A large number of fungicides are used in different forms e.g. paste, extracts, spray, and dusting, soaking treatment. Seeds get contaminated easily by pathogens and get attracted towards it which in return becomes the primary source for plant disease [4]. The contaminated seeds become unhygienic & lack its proficiency of becoming a healthy plant. It results in poor germination and unhealthy crop plant. The seeds associated with mycoflora get deteriorated and its quality decreases.The plant diseases can be reduced effectively by treating seeds with appropriate chemical or herbal agents. Before sowing, use of fungicides is well known for the treatment of seed borne mycoflora and it also improves the germination of seed [6].

CONCLUSION

Radish (*Raphanus sativus*) is an annual plant. A study was undertaken to determine the prevalence of seed borne fungi of radish seed. The crop was grown during the winter season. The seeds were stored after harvesting in cold chamber. The study about *Raphanus sativus* seed reveals that mycoflora affect the seeds of radish at storage and sowing stage. In radish different mycoflora are found example are *A. niger, A. fumigatus, A. flavus, A. alternata, Bipolaris* spp., *C. globosum* etc. and by using effective fungicides the deteriorating effect can be reduced.

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