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## Influence of seed treating fungicides and grain smut incidence on seed yield and quality of *Rabi* sorghum [*Sorghum bicolor* (L.) Moench.]

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### ABSTRACT

Field experiment was carried out to assess the influence of seed treating fungicides and incidence of grain smut on seed yield and quality. The treatments consisted of different fungicides. The seeds were inoculated with smut spores @ 3 g kg<sup>-1</sup> then treated with vitavax power @ 3 g kg<sup>-1</sup> of seeds just before sowing found to be effective in reducing the smut incidence. It was recorded significantly lower incidence of grain smut (1.10 %), seed yield per plot (1.079 kg), seed yield per hectare (1521.9. kg) over the control. Similarly, the seed quality parameters like 1000 seed weight (35.9 g) germination (92.3 %), seedling vigour index (4035) and lowest electrical conductivity (0.079 dSm<sup>-1</sup>) was also noticed in the vitavax powder treatment just before sowing as compared to control.

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**Key words :** *Rabi* Sorghum, Fungicides, SVI, Germination.

### INTRODUCTION

Sorghum [*Sorghum bicolor* (L.) Moench] is commonly known as 'Jowar' is the fifth most important cereal in the world next to wheat, rice, maize and barley. Sorghum is usually grown in both *Kharif* and *Rabi* season, especially growing of sorghum in *Rabi* season is unique to India and particularly to the southern states like Maharashtra and Karnataka where more than 50 per cent of the cultivable area is concentrated in the *Rabi* season owing to its superior grain quality and favourable agro-ecological condition for the crop production.

Productivity of sorghum crop in India is much less compared to the average productivity levels achieved in the developed countries and also less than the world average. This is because of sorghum is prone to several diseases and pests which cause considerable reduction in seed yield and its quality. Depending upon climatic condition and intensity of cultivation practices adapted, the occurrence of sorghum diseases vary. About 50 diseases are noticed in sorghum, but only 30 of them are found in India. Among them, only 10 are of major

importance. Grain smut of sorghum is one among them.

The incidence of grain smut is quite common and destructive in almost all sorghum growing areas of the world. In India, it is one of the most serious diseases of the crop in states of Tamil Nadu, Karnataka, Andhra Pradesh, Uttar Pradesh, Madhya Pradesh and Maharashtra. It causes direct loss of grains by replacing grain with smut sori. Grain smut is externally seed borne disease, the causal organism is *Sporisorium sorghi* (Ehren) Link (= *Sphacelotheca sorghi* link) Clinton. The incidence up to 25 per cent has been reported in certain areas, and the value of the grain destroyed was compared at several million sterling's (Butler, 1918). During threshing the sori break releasing the spores which adhere to the surface of healthy seeds and remain dormant till next season. The incidence of grain smut of sorghum is easy to control by a cost effective treatment. This can be achieved by the seed treatment with systemic fungicides like carboxin and bavistin which was reported to be more effective than protectant fungicides. Therefore, the present investigation was carried out to evaluate the influence of fungicides seed treatment and smut incidence