

RESEARCH ARTICLE

Effect of seed dressing fungicides and bioagents on seed borne fungi, seed germination, shoot- root length and seedling vigour index of sorghum at different storage periods

■ MINA D. KOCHÉ*, R.M. GADEKAR, V.V. KAPSE AND S.A. KONDE

Department of Plant Pathology, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, AKOLA (M.S.) INDIA

ARTICLE INFO

Received : 16.06.2012
Revised : 20.07.2012
Accepted : 28.07.2012

Key Words :

Seed borne mycoflora,
Seed dressing fungicides,
Bioagents, Sorghum

* Corresponding author:
mdkoche@gmail.com

ABSTRACT

Sorghum seed showed association of twelve fungi Among the fungicides and bioagents tested for their efficacy against seed borne mycoflora to improve seed germination and plant health study was made on fungal association with sorghum, seed germination percentage, shoot – root length and seedling vigour index which decreased as the storage period increased. Seed treatment with thiram + carbendazim (1:1) 3g/kg of seed was found superior in controlling the seed borne mycoflora (0.50 to 0.0%), increasing seed germination (88.00 to 71.00%), shoot length (12.8 to 10.82 cm), root length (7.3 to 5.45 cm) and seedling vigour index (1768 to 1155).

How to view point the article : Koche, Mina D., Gadekar, R.M., Kapse, V.V. and Konde, S.A. (2012). Effect of seed dressing fungicides and bioagents on seed borne fungi, seed germination, shoot-root length and seedling vigour index of sorghum at different storage periods. *Internat. J. Plant Protec.*, 5(2) : 268-271.

INTRODUCTION

Sorghum [*Sorghum bicolor* (L.) Moench] is one of the major crops among the millet grown in the dry land. It is mainly grown in the deccan plateau, central and western India apart from a few patches in North India. Seed borne mycoflora refers to diseased appearance of grains, resulting from infection of developing grains by one or more fungal species. Seed borne pathogens affect the seed germination which result into reduction of plant population ultimately lowering the yield. The present investigation was undertaken to see the effect of seed dressing fungicides and bioagents on seed borne fungi, seed germination, shoot – root length and seedling vigour index at different storage period.

MATERIALS AND METHODS

Seed sample of sorghum cultivars CSV-15 were collected from sorghum Research Unit, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola during 2007, for seed health testing and

mycoflora associated with seed. Four fungicides viz., carbendazim 0.1 per cent, thiophanate methyl 0.3 per cent, thiram 0.3 per cent, thiram + carbendazim (1:1) and two bioagents viz., *Trichoderma viride* 4 g/kg seeds and *Pseudomonas fluorescens* 10 g/kg of seed were used as a seed dresser.

Naturally infected sorghum seeds were treated with calculated amount of fungicides and bioagents and thoroughly shaken in conical flask for 15-20 min. to achieve the uniform coating on seed. Treated and untreated seeds were kept under ambient storage conditions in polythene bags. Initial seed germination, fungal association and seedling vigour index were recorded at the time of storage and subsequent observations at monthly interval were recorded. Fungal association with sorghum seeds was tested by blotter method and germination and seedling vigour index were tested by employing paper towel method.

Two hundred seeds of each treatment treated and untreated were tested for fungal association. Observations