INTERNATIONAL JOURNAL OF FORESTRY AND CROP IMPROVEMENT (December, 2010); 1 (2): 89-90

Research Article

Received : Sept., 2010; Accepted : Oct., 2010



Effect of foliar spray of growth retardants and nutrients on growth and yield of sorghum (*Sorghum bicolor*. Moench)

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ABSTRACT

A field experiment was conducted during *Rabi* 2009 at college of agriculture farm Bheemrayangudi, under rain fed conditions. To know the effect of foliar spray of growth retardants and nutrients on growth and yield in *Rabi* Sorghum (*Sorghum bicolor*. Moench) Application of $KNO_3 -1\%$ significantly increased the grain yield (1403.4kg/ha) as compared to control (945.0kg/ha) and plant growth retardants spray. The increase in the yield due to KNO_3 spray may be attributed to improvement in the yield parameters *viz.*, ear head weight and length, HI,100 seeds weight, and seed yield per plant. Among the plant growth retardants spray, significantly higher grain yield attributes were recorded with lihosin 400 spray (1184.3 kg/ha) followed by CCC- 200 ppm spray(1154.4kg/ha) over control (945.0 kg/ha). It may be attributed to primary effect of lihosin on restructuring of plant so as to produce optimum photosynthetes and improving the source -sink relation there by improvement in the yield. which was evident from significantly increased 100-seed weight, ear head length and weight and seed yield per plant.

KEY WORDS : Source sink CCC, Lihosin, Rabi Sorghum, KNO₃

Dhanoji, M.M. (2010). Effect of foliar spray of growth retardants and nutrients on growth and yield of sorghum *licolor*. Moench), *Internat. J. Forestry and Crop Improv.*, **1** (2) : 89-90.

INTRODUCTION

In India, sorghum(Sorghum bicolor. Moench) is an important grain and fodder Rabi crop and is grown in postrainy seasons on vertisoils. Postrainy sorghums are very crucial for food and fodder security in the drought prone areas of Maharashtra, Karnataka and Andhra Pradesh states of India as there is no alternative cereal grown during this season, The grain productivity of post rainy sorghum in India is very low 477 kg ha One of the reason for low productivity may be terminal drought due receding soil moisture situation. As a consequence, plant experiences progressively increasing degree of terminal moisture stress. Thus soil moisture stress assuming a major limiting factor for determining the growth and yield. Therefore, there is a need to identify suitable ameliorative measures to overcome the moisture stress effect. It is well established fact that exogenous application of PGRS and nutrients modifies the plant structure so as to improve the source and sink relation there by improvement in the yield under stress conditions. Keeping these views, the investigation was under taken to study the effect of foliar spray of growth retardants and KNO₃ on growth and yield in sorghum.

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MATERIALS AND METHODS

A field experiment was conducted during *Rabi* 2009 at College of Agriculture farm Bheemrayangudi, under rain fed conditions. The trial was laid out in RBD with three replications. There were 9 treatments including control, water spray and KNO_3 -1% spray. Plant growth retardant CCC (50,100 and 200ppm) and Ilhosin(100,200 and,400ppm) were studied at three different concentration. M-35-1 cultivar was used for the study and the treatments were imposed at 45 DAS of the crop. The plant height was recorded from base of the plant to tip of the main stem. Total dry matter and its distribution in leaf, stem and reproductive parts, ear head weight and length , test weight, seed yield per plants were worked out from the tagged five plants and average was computed and presented in Table 1 and 2.

RESULTS AND DISCUSSION

The application of $KNO_3 - 1\%$ significantly increased grain yield (1403.4kg/ha)over Control (945.0kg/ha) over all other treatments of plant growth retardants spray The increase in the yield due to KNO_3 spray may be attributed to improvement in the yield parameters *viz.*, ear head weight and length, HI, 100seeds weight and seed yield

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