



Evaluation of TwinN in *Rabi* sorghum on growth and growth parameters in northern transitional zone of Karnataka

R. BASAVARAJAPPA

Department of Agronomy, College of Agriculture, University of Agricultural Sciences,
DHARWAD (KARNATAKA) INDIA (Email : rbasavarajappa@yahoo.com)

Abstract : A field experiment was carried out on TwinN in *Rabi* sorghum at Main Agricultural Research Station, University of Agricultural Sciences, Dharwad Karnataka during *Rabi* seasons (2009 and 2010) to evaluate the sorghum growth and growth parameters. The experiment was laid out in Randomized Block Design with eight treatments and three replications. The pooled results for two seasons showed significantly higher plant height (230.33 cm), number of leaves per plant (9.23), root length (19.20 cm), dry root mass (84.33 g) and ear head girth (19.07 cm) were recorded in 40:40:40 N:P₂O₅:K₂O kg/ha with two TwinN sprays at 5th leaf and flower primordial stage (T₅) which was at par with 80:40:40 N:P₂O₅:K₂O kg/ha. Further dry matter production and accumulation in stem, leaves, ear heads and TDMP (42.44, 4.88, 22.92 and 68.19 g/plant, respectively) also showed similar trend in T₅.

Key Words : TwinN, *Rabi* sorghum, Root length, Root dry mass, Dry weight of stem, TDMP

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INTRODUCTION

TwinN is a breakthrough product that reduces the amount of nitrogen fertilizer needed. It is a freeze dried microbial product diathrophs and produced in modern sterile fermentation. Every batch quality control tested by NSW Govt. laboratories with 710 cfu/ha of very high concentration. All strains present and free of contaminants and reliable shelf life-12 months cool(Lic) storage and 1,5,10 and 100 ha packs available. The purpose of using TwinN is to improve profitability through decreasing fertilizer and increasing yield levels.

Increase sustainability of production :

- Enable compliance with emerging legislations improve soil productivity
- Decrease carbon footprint of production
- Decrease leaching of NO₃ into water ways

To limit nitrogenous fertilizer applications in Europe, Australia etc. :

Hence, to know the performance of TwinN in cereal crops like *Rabi* sorghum an experiment was carried out with

the objective to know the response of TwinN on growth and growth parameters of *Rabi* sorghum.

MATERIALS AND METHODS

The field experiment was conducted at Main Agricultural Research Station, University of Agricultural Sciences, Dharwad, which lies in northern transitional zone (Zone-8) of Karnataka and region IV of agro climatic zones of India. The soil type was clay loam with pH of 8.9. The available nitrogen (231 kg/ha) and phosphorus (22.98 kg/ha) were low and potassium (250 kg/ha) was in medium range. The experiment was laid out in Randomized Block Design with eight treatments comprising of 40:40:40 NPK kg/ha + 1 TwinN spray at 5th leaf stage and two TwinN spray at 5th leaf stage and primordial stage, 20:40:40 kg NPK/ha with one Twin-N spray at 5th leaf stage and two TwinN spray at primordial stage, 0:40:40 kg NPK/ha with one TwinN spray at 5th leaf stage and two sprays at 5th leaf and primordial stage, with RDF (80:40:40)NPK kg/ha as a standard check) and 0:40:40 kg NPK/ha + No TwinN