

Response of summer clusterbean [*Cyamopsis tetragonoloba* (L.) Taub.] to organic fertilizers and different levels of sulphur for vegetable purpose

V.S. BAVISKAR*, P.G. SHETE AND R.A. DASPUTE¹

Department of Agronomy, K.K. Wagh College of Agriculture, Panchawati, NASHIK (M.S.) INDIA

ABSTRACT

A field experiment was conducted during summer season of 2008 at college farm. Navsari Agricultural University, Navsari to study the response of summer Clusterbean [*Cyamopsis tetragonoloba* (L.) Taub.] to organic fertilizers and levels of sulphur for vegetable purpose. Result of the experiment revealed that an application of Biocompost @ 5 t ha⁻¹ recorded significantly higher yield attributes *i.e.* Number of pods per plant (54.30), length of pods (8.88 cm) and weight of green pods per plant (254.56 g) which resulted in significantly highest green pod (5325 kg ha⁻¹) and straw (3137 kg ha⁻¹) yields. Similarly sulphur level also recorded significant effect in increasing all these yield attributes and yield. Sulphur application @ 50 kg ha⁻¹ produced significantly higher yield attributes and green pod (6071 kg ha⁻¹) and straw (3344 kg ha⁻¹) yield over other treatments.

Key words : Clusterbean, Biocompost, Sulphur, Yield attributes

INTRODUCTION

Clusterbean or guar is an important self pollinated, multipurpose, relatively drought resistant and restorative leguminous vegetable crop. It is grown for feed, fodder, vegetable, green manure as well as for gum production. Being legumes, it builds soil fertility and thus has a great role to play in nitrogen economy for succeeding crop. India leads the list of major guar producing countries of the world contributing to about 75 to 80 % in the world total production of around 7.5 lakh to 10 lakh tonnes. In India, the main states cultivating clusterbean are Rajasthan, Gujarat, Haryana, Punjab and Uttar Pradesh.

Yield in clusterbean is an integration of the effect of numerous factors on many physiological components. Looking to the soil health and to sustain the productivity, use of judicious combination of organic and inorganic fertilizer is essential. The organic manures *i.e.* FYM, castor cake, biocompost, vermicompost, poultry manure, neem cake are well recognized, which supply necessary macro and micro plant nutrients for maintaining soil fertility. Application of sulphur not only increases the crop yield but also improves the crop quality *i.e.* it increases the oil and protein content, improves nutritional quality of fodder. For exploiting the potential yield of clusterbean use of organic fertilizers and sulphur application is necessary. Keeping in view the above facts the present investigation was, therefore, initiated to workout the response of organic and sulphur fertilizers on yield and yield attributes of clusterbean.

MATERIALS AND METHODS

A field experiment was conducted during summer season of 2008 at College Farm, Navsari Agricultural University, Navsari to study the response of clusterbean [*Cyamopsis tetragonoloba* (L.) Taub.] to organic fertilizers and different levels of sulphur for vegetable purpose. The soil of the experiment field was clayey in texture, low in available nitrogen (176 kg ha⁻¹), medium in available phosphorus (32 kg ha⁻¹), available sulphur (21.01 kg ha⁻¹) and fairly rich in available potassium (350 kg ha⁻¹) with 7.8 pH. Nine treatment combinations comprising of three levels of organic fertilizers *viz.*, Control (F₀), FYM @ 5 t ha⁻¹ (F₁) and biocompost @ 5 t ha⁻¹ (F₂) and three levels of sulphur *i.e.* Control (S₀), 25 kg S ha⁻¹ (S₁) and 50 kg S ha⁻¹ (S₂) were tried in factorial randomized block design with four replications. The Clusterbean variety Pusa Navbahar was sown on 29 February 2008 keeping 45 cm inter-row spacing and intra-row spacing of 15 cm was maintained by thinning operation. Recommended dose *i.e.* 20:40:00 kg NPK ha⁻¹ and other cultural practices were also adopted as per need of crop.

RESULTS AND DISCUSSION

The results obtained from the present investigation are summarized below :

Effect of organic fertilizers:

Data presented in Table 1 revealed that, different organic fertilizer treatment had significant effect on yield attributes and yield. Significantly higher number of pods per plant (54.30), length of pods (8.88 cm) and weight of

* Author for correspondence.

¹Shramshakti College of Agriculture, Maldad, Sangamner, AHMEDNAGAR (M.S.) INDIA