



Cultivation of Barnyard Millet in Agriculture Dominated Watershed of Bundelkhand in Uttar Pradesh

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Abstract

The field study was laidout during two consecutive years in rainy season of 1990 & 1991 in village Rendhar of Model Watershed, Rendhar, Jalaun on farmer's fields under dryland situation. The main objective was to compare the high yielding variety of barnyard millet with available local variety in degraded soils of Bundelkand, U.P. The ravines affected area of watershed was treated with different soil and water conservation measures. The experimental soil was *Parwa*, having low fertility status. The barnyard millet variety E.C.C.-25 was compared with local cultivar of barnyard millet. The crop was fertilized with 60 kg N, 40 kg P₂O₅ and 20 kg K₂O/ha. The improved cultivar E.C.C.-25 gave highest seed yield by 8.58 q/ha over local check (6.35 q/ha). Thus newly developed cultivar E.C.C.-25 gave higher seed yield by 2.23 q/ha or 35.10% in comparison to local check in dry farmed area of Bundelkhand.

Keywords: *Cultivar E.C.C.-25, Dry farmed area, Rainy season, Soil and Water Conservation, Watershed project.*

Introduction

Barnyard millet (*Echinochlon crusgalli*) is a grain crop of minor importance. It is also known as Shavan in hindi. It is a quick growing crop of three month's duration. The chief characteristic of this crop is that it has a drought resistant characters more than any other crop. Even in a famine year when all the crops fail to give yield, this crop gives some yield of grain and straw. Its cultivation, though not extensive, is generally found throughout India.

In India, it is mostly grown in Tamilnadu, where it gives good grain yield. The crop matures in three to four months, depending upon the variety sown and vacant the field for rabi season crops. The grain of barnyard millet contain 11.87% moisture, 6.22% protein, 4.44% minerals, 6.019% calcium, 0.282% phosphorus, 2.86% iron. Therefore, this composition of nutrients is form better nutritive properties.

Materials and Methods

The investigation was carriedout during two consecutive rainy season of 1990 and 1991 in the village Rendhar, district Jalaun, Bundelkhand of Uttar Pradesh. The experimental site located in village Rendhar, Jalaun of U.P. The main objective was to compare the high yielding variety of barnyard millet with available local cultivar in degraded soil of watershed. The ravines affected land of watershed area was treated with different soil and water conservation measures. The experimental soil was *Parwa* (Sandy loam), having pH 7.6, organic carbon 0.21%, total nitrogen 0.02%, available phosphorus 8.8 kg/ha and available potash 221 kg/ha. Therefore the fertility status was low. The pH was determined by Electrometric glass electrode method (Piper, 1950), while organic carbon was determined by calorimetric method (Datta, *et al.*, 1962). Total nitrogen was analyzed by Kjeldahl's method as discussed by Piper (1950). The available phosphorus and potassium were determined

by Olsen's method (Olsen, *et al.*, 1954) and Flame photometric method (Singh, 1971), respectively. The improved variety E.C.C.-25 was compared with local variety of barnyard millet at four locations of farmer's fields. The crop was fertilized with 60 kg N, 40 kg P₂O₅ and 20 kg K₂O/ha. The crop was harvested at 95 DAP. The recommended conservation agronomical practices was followed for raising of barnyard millet. The protective irrigations were given to crop as and when required with harvested rain water. The experiment was laidout on four farmer's fields.

Results and Discussion

The yield data of barnyard millet recorded during pooled year were collected of two varieties reported in Table-1 and discussed here under.

The seed yield of barnyard millet given in Table-1 displayed that the cultivar E.C.C.-25, received from Directorate of Small Millet Development, Madras (Chennai) gave highest grain yield by 8.58 q/ha over local check. Thus, the newly developed variety E.C.C.-25 gave more yield by 2.23 q/ha or 35.10 per cent over local cultivar of barnyard millet under dryland condition of watershed. Cultivar E.C.C.-25 produced highest seed yield because it had better source-sink relationship that mean amount of dry matter of photosynthates produced by source organs translocated towards sink organs (economic part) and produced higher seed yield. These results are commensurable to the findings of Panwar, *et al.*, (1986), Shrivastava and Bharadwaj, (1986) and Pachpor and Shete, (2010).



Grains of Barnyard millet

Crop of Barnyard millet in the field

Table 1: Pooled yield of barnyard millet at agricultural dominated area of watershed in Bundelkhand of Uttar Pradesh

S.N.	Treatment	Pooled yield (q/ha)	Yield increase over local check (q/ha)	% yield increased
1.	E.C.C.-25	8.58	2.23	35.10
2.	Local check	6.35	-	-

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