



Quality character estimation of different of varieties and dates of sowing of pearl millet cultivation of gird zone

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Abstract

The research was done during the *kharif* season of 2016 at College of Agriculture, RVSKVV, Gwalior. The current study was therefore undertaken to determine the Quality character estimation of different of varieties and dates of sowing of pearl millet cultivation of gird zone. With the treatment combination of three Date of Sowing (20th, 30th July and 9th August) and five varieties of pearl millet (Big B, Crystal Dhoom, Boss-65, Ankur-045 and 86M86). The experiment was laid out in split plot design with three replications. The result revealed that higher quality character - protein content (%) was recorded maximum under the variety crystal Dhoom with sowing date of 9 august of pearl millet, which was followed by varieties Big B, Ankur-045, 86M86 and Boss - 65 respectively.

Keywords: Pearl millet, protein content, varieties, date of sowing

Introduction

Pearl millet is an important cereal crop as it is rich in nutrition with capability to grow at harsh climatic condition. This crop has a capability to grow at very high temperature with low water requirement where other crops like rice, wheat, maize fail to grow. It has also advantageous physiological characteristics when compared to other cereals as it is resistant to drought, low soil fertility and high salinity (Rai *et al.*, 2008) [8]. Pearl millet grain content 75% endosperm, 17% germ, and 8% bran (Singh *et al.* 2006) [5]. The pearl millet germ proportion is thus about twice that of sorghum, it is a factor that contributes to the higher nutritive value of pearl millet grain (Andrew *et al.* 1991) [2]. Pearl millet is a good source of energy, protein, vitamins, dietary fibers and minerals. It is high in fat and better fat digestibility than other cereals. This is also high in unsaturated fatty acids with higher content of nutritionally important n-3 fatty acid. Among all the millet's, pearl millet has highest content of macronutrients and significantly rich in resistant starch, soluble and insoluble dietary fibers (Ragaee *et al.*, 2006) [4].

Nutritional quality of food is a key element in maintaining human overall physical well-being because nutritional well-being is a sustainable force for health and development and maximization of human genetic potential. Pearl millet was found significantly rich in resistant starch, soluble and insoluble dietary fibers, minerals, and antioxidants (Ragaee *et al.*, 2006) [4]. It contains about 92.5% dry matter, 2.1% ash, 2.8% crude fiber, 7.8% crude fat, 13.6% crude protein, and 63.2% starch (Ali *et al.*, 2003) [1].

Materials and Methods

The research work was conducted at Rajmata Vijayaraje Scindia Krishi Vishwavidyalaya Gwalior, Madhya Pradesh (26.130 N and 76.140 E) in Madhya Pradesh during monsoon season of 2016-17. The average rainfall ranges between 80 to 90 cm, most

of which is received in the month of July, August, and September with an average maximum and minimum temperature during growing period as 41.6 °C and 13.2 °C. The hot period of summer season generally starts somewhere in middle of April and continued till the middle of June, when the presence of monsoon in the sky becomes clearly visible.

Physio-chemical properties of soil

Table 1: Physio-chemical properties of soil during experiment 2015-16

S. No.	Properties	Value
1.	Sand (%)	56.75
2.	Silt (%)	19.82
3.	Clay (%)	21.00
4.	Textural class	Sandy loam

Results & Discussion

result shows in the experiment, quality character estimation of different of varieties and dates of sowing of pearl millet was concluded on the basis of protein percentages, respectively.

Protein Content (%) in grain

The protein content was recorded after harvest of crop. The grains of replication wise and treatment wise analyzed in laboratory to find out the protein content (%) in grains.

The recorded data were statistically analyzed and presented in table2, and fig 1 which indicated that there was a significant difference in protein content (%) due to different date of sowing and varieties.

Under date of sowings, maximum protein content recorded under, date of sowing D₁ 20th July (10.73%), followed by date of sowing D₂ 30th July with 9.44 % and minimum protein content was recorded in date D₃ 9th August sowing 9.29% protein, respectively. In case of varieties maximum protein % was recorded under pearl millet variety V₂ Crystal Dhoom (10.21%),

followed by variety V₁ Big B with 9.98%, variety V₄ Ankur - 045 with 9.67%, variety V₅ 86M86 with 9.63% and minimum protein % was recorded under pearl millet variety V₃ Boss 65 9.60% in year 2016, respectively.

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Table 2: Protein Content (%) in grain of Pearl millet at harvest as influenced by different treatments

Treatment Details	Protein content in grain (%)
D ₁	10.73
D ₂	9.44
D ₃	9.29
S.Em±	0.08
CD (at 5%)	0.33
V ₁	9.98
V ₂	10.21
V ₃	9.60
V ₄	9.67
V ₅	9.63
S.Em±	0.09
CD (at 5%)	0.27
Interaction I(D×V)	NS
Interaction II (V×D)	NS

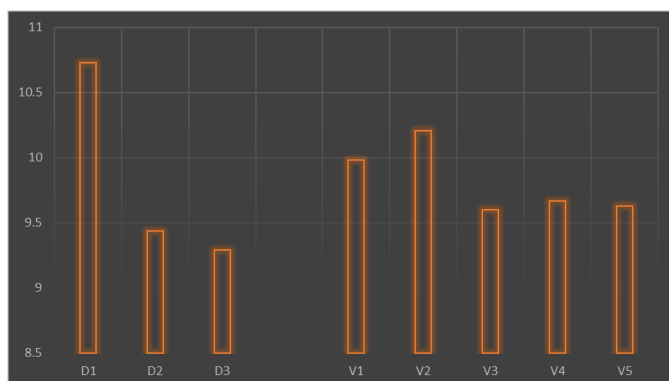


Fig 1: Protein Content (%) in grain of Pearl millet at harvest as influenced by different treatments

Conclusion

Use of variety ₂ crystal Dhoom was have higher protein % in grain of pearl millet followed by Big B, Ankur-045, 86M86 and variety Boss - 65 respectively. Similar, trend followed in date of sowing, maximum protein % was found under the sowing date of 20th July of pearl millet followed by date of sowing 30th July and 9th August, respectively.

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