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Evaluation Of Front Line Demonstration On Pearl Millet

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Abstract

Front line demonstration is the long-term extension activity for adoption of new agriculture technology is a crucial aspects under innovation diffusion process. FLDs is one of the most powerful tools for assessment and transfer of technology for enhancing productivity. The present study was to determine the Evaluation of different varieties of pearl millet under front line demonstration at farmer field. The results clearly indicate the effects of FLDs variety Pro agro 9180 provided more yield and additional income over the local check (farmer practices). The hybrid varieties of pearl millet Pro-Agro 9180 (2820 kg/ha), Hunkar S-362 (1805 kg/ha), ADV-954 (1800 kg/ha), Tata -7888 (1850 kg/ha) recorded higher yield over farmer practices (1600 kg/ha). The additional average grain yield of pearl millet varieties Proagro-9180, Hunkar- S-362, ADV-954, Tata -7888 were 76.25%, 12.81%, 12.25%,15.62 % over the local check. Adoption of hybrid variety Proagro-9180 under FLDs recorded B:C ratio 2.03:1 and provided net returns Rs 22420 higher than was other variety and local check . Front Line Demonstration under variety Proagro 9180 was more profitability compared to Hunkar S-362, ADV-954, Tata -7888 and local check. Benefit: cost ratio was recorded to be higher against farmer practices.

Keywords: Front Line Demonstration, Production, Pearl millet.

Introduction:

Pearl millet (Pennisetum glaucum L.) is the staple food grain and a source of feed, fodder, fuel and construction material for hundreds of millions of the world's poorest (Kannan et al, 2014; Sumathi et al, 2010). It provides staple food for the poor and short period, dry tracts, rain fed of the cultivated in country and relatively by the economically poor farmers using either no improved production technology. Pearl Millet is the most drought and heat tolerant among cereals (Anil kumar et al., 2010). Pearl millet is the sixth most important cereal in the world after wheat (Triticum aestivum), rice (Oryza sativa), maize (Zea mays L.), barley (Hordeum vulgare) and sorghum (Sorghum bicolor) (Singh et al,2003)

Rajasthan is largest producer state of pearl millet in India its area (4.24 million hectares) , production (3.75 million tons) with productivity (866 Kg./ ha) and total national production (9.13 million tons) , area (7.38 million hectares) with productivity (1237 Kg/ ha) in 2017-18.

Pearl millet is well adapted to growing areas characterized by drought, low soil fertility, and high temperature. It performs well in soils with high salinity or low pH. Because of its tolerance to difficult growing conditions, it can be grown in areas where other cereal crops, such as maize or wheat, would not survive. Pearl millet is a summer annual crop well-suited for double cropping and rotations.

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Important crop management can play effective dual role both in increasing the productivity and enhancing production stability. Major emphasis in the adoption of new technology was high yielding varieties, assured irrigation, balanced fertilizer management and use of chemical (Kikar et al., 2005). Therefore, front line demonstration were conducted during kharif seasons of the year 2018 on selected farmer field of the operation area of Krishi Vigyan Kendra Bichpuri, Agra.

Material and Methods:

The Front line demonstration is a unique approach to provide direct interface between researcher and farmers as the scientists are directly involved in planning, execution and monitoring of the demonstrations from the technologies developed by them and get direct feedback from farmer's field about the varieties / technologies. During the kharif seasons 2018 FLD's were laid out in the farmers field with present study was to determine the Evaluation of different varieties of pearl millet (Pennisetum glaucum L.) under front line demonstration..

This activity was supported by Agricultural Technology Application Research Institute, Kanpur. Field demonstration is a long term educational activity conducted in a systematic manner in the farmer's field to show the worth of a new practice/ technology.

The technology used for the FLDs was hybrid varieties with used dose 80 kg nitrogen 40 kg potash 40 kg phosphorus 20 kg sulphur and 25 kg zinc per hectare. Farmers provided by Krishi Vigyan kendra was hybrid varietes of pearl millet for demonstration areas. Non monetary in put like timely sowing, seed rate, plant spacing, weeding, thinning, harvesting, threshing, chemical use, etc knowlged were provided through training. Production data of pearl millet were noted each from separate farmer after threshing. The treatment of traditional farming and demonstrations are as follows:

T-1(farmer practices) : Local varieties
T-2.(Under FLDs): Use of different hybrid varieties

A. Proagro - 9180
B. Hunkar-S- 362
C. TATA-7888
D. ADV-954

Economics: It was calculated treatment wise. The cost of cultivation per hectare was subtracted from the gross income for computing net returns of each treatment.
Net profit (Rs./ha) = Gross return (Rs./ha) - Cost of cultivation (Rs./ha)

Cost of cultivation (Rs./ha)

For different treatments total cost was calculated on the basis of prevailing market rates of fertilizer, field preparation, sowing of seeds, labour charges, cultural and intercultural operations as well as expenditure an herbicides, harvesting and threshing of the crop produce etc.

Gross return (Rs. /ha)

For different treatments gross returns were calculated on the basis of prevailing market rate of produce.

Net return (Rs. /ha)

It was calculated treatment wise. The cost of cultivation per hectare was subtracted from the gross income for computing net returns of each treatment. Net profit (Rs./ha) = Gross return (Rs./ha) - Cost of cultivation (Rs./ha)

The BCR formula was calculated in given below.

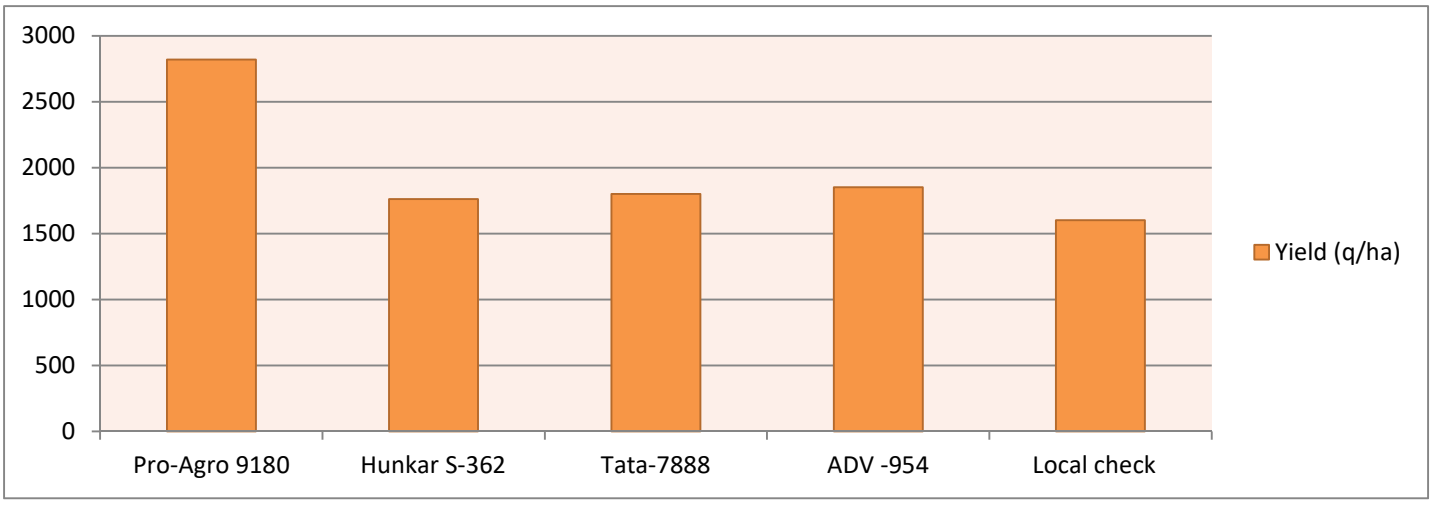
$$BCR = \frac{\text{Gross return}}{\text{Gross cost}}$$

Table-(1) Grain yield of farmer practices and demonstration

Varieties	Grain yield(q/ha)	Number of Farmer	Increase yield(%)
	2018		
Proagro - 9180 (Under FLD)	2820	15	76.25
Hunkar-S- 362(Under FLD)	1805	02	12.81
Tata-7888(Under FLD)	1800	01	12.50
ADV-954(Under FLD)	1850	01	15.62
Farmer practices (Local check)	1600	19	0

Table-(2) Economics of farmer practices and demonstration

Particulars	Pro Agro-9180	Hunkar- S-362	ADV-954	Tata -7888	Local variety (FP)
Gross Cost (ha^{-1})	22190	22190	22190	22190	18525
Gross return (ha^{-1})	45120	28880	29600	28800	25600
Net return (ha^{-1})	22930	6690	7410	6610	7025
B:C Ratio	2.03:1	1.3:!	1.33:1	1.29:1	1.38:1



Results and Discussion:

(i) Grain Yield :

The data that is proved form the average yield in Table (1) reveal that application of demonstration under different varieties of pearl millet genotypes viz. Proagro-9180, Hunkar- S-362, ADV-954, Tata -7888 with local check .The comparative performance of four varieties of pearl millet under demonstration with farmer local check variety. The seed yield affected due to good variation of different pearl millet varieties under demonstration. The results clearly indicate the effects on FLDs variety Proagro-9180 provided more seed yield and additional income over the others demonstration varieties. Under demonstration improved varieties of pearl millet provided Proagro-9180 (2820 kg/ha), Hunkar-S-362(1805 kg/ha), ADV-954(1800 kg/ha),Tata -7888 (1850 kg/ha) were recorded additional yield over local check variety (1600 kg/ha). The average grain yield of pearl millet was increased Proagro-9180, Hukar- S-362, ADV-954, Tata -7888 were 76.25%, 12.81%, 12.25%, 15.62 % over local check.

It also observed average yield of demonstration was 26.09 quintal per hectare across of four demonstrate genotypes compared to local check genotype 16.00 q/ha and recorded additional yield (63.06%) over the farmer practices. The results are in conformity with the findings of Tomar *et a*l (2003).

Despite the lower yield levels in village Nagala Vishnu, Ngala Hira Singh the newer new varieties of Proagro-9180 for production of pearl millet have given a very good result in comparison to other demonstrate varieties with local check variety . There is a need to adopt new varieties of Proagro-9180 that enhancing pearl millet production.

(ii) Economics:

Economics indication i.e. gross cost of cultivation gross returns, net returns and Benefit Cost ratio of front line demonstration are presented in table-(2) It was Clearly shows that gross return of different variety of pearl millet under FLDs Proagro-9180, Hunkar- S-362, ADV-954, Tata -7888, and Local check (FP) were Rs45120, Rs28880, Rs29600, Rs28800 and Rs25600 per hectare. The clearly revealed that variety Proagro-9180 provided substantially higher gross return than Hunkar- S-362, ADV-954, Tata -7888 and local check .

The FLDs show clear of net income of different varieties were Proagro-9180 (Rs 22930), Hunkar- S-362 (Rs 6690), ADV-954 (Rs7410), Tata-7888 (Rs 6610), and Local variety (FP)(Rs 7025.) respectively.

It was clear that variety Proagro-9180 under was more profitability compared to other demonstration varieties and farmer local check. Economics analysis of the yield performance revealed the B:C ratio of different varieties of pearl millet Proagro-9180, Hukar- S-362, ADV-954, Tata -7888, and Local check (FP) were 2.03:1, 1.3:1, 1.33:1 and 1.38:1 respectively. The variety Proagro-9180 B: C ratio was recorded to be higher than Hunkar- S-362, ADV-954, Tata -7888 and local check. Front Line Demonstration variety Proagro-9180 was more

profitability compared to Hunkar S-362, ADV-954, Tata -7888 with local check.

Conclusion:

It is obvious from the results that pearl millet varieties have more difference regarding yield. However, the variety Pro-agro 9189 performed mor e better than other varieties regarding yield.

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