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## Assessment of high yielding variety of bajra

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### Abstract

In this study, the impact of high yielding short duration pearl-millet hybrid on the income of farmers in the dry zone of district Auraiya, Uttar Pradesh has been assessed. Decomposition of total change in net returns revealed that KVK in UP, Auraiya in UP due to adoption of modern technology yield of Pioneer 86M86 variety increased by 0.211 (t/hectare), Dhanya 7192 as high yielding variety of millet among farmers using To carry out on-farm trials, 0.226 (t/hectare) and Bayar 9450 yield 0.259 (t/hectare). Increase the yield of Bayar-9450 by 22.74% compared to Pioneer (86M86) practiced by the farmers. Between the two varieties (Bayar-9450 and Pioneer 86M86) A realized net return is Rs 0.15 lakh/hectare compared to farmers' practice of net return of Rs 0.10 lakh/hectare. This shows that there is great potential for increasing farm income through wide dissemination of modern pearl millet technology.

**Keywords:** Pearl millet, high-yielding varieties, technology, decomposition analysis

### Introduction

Pearl millet (*Pennisetum glaucum* L.R.Br.) is cultivated in dry regions of arid and semi-arid tropics where no other cereal can be successfully grown. India is the largest producer of millets in the world, harvesting about 11 million tons per year, nearly 36% of the world's output. Pearl millet, which accounts for about two-thirds of millet production in India, is grown in the drier areas of the country, mainly in the states of Rajasthan, Maharashtra, Gujarat, Uttar Pradesh, and Haryana. In India, pearl millet is the fourth most widely cultivated food crop after rice, wheat, and maize. It occupies an area of 6.93 million ha with an average production of 8.61 million tons and productivity of 1,243 kg ha<sup>-1</sup>. The cultivated area for pearl millet in India is divided into three main zones based on soils and rainfall patterns. The north western part of India, receiving <400 mm of annual rainfall, is classified as an A<sub>1</sub> zone. The northern and central parts of India, with sandy loam soils and receiving >400 mm of annual rainfall, are denoted as an A zone, and the peninsular region of India, receiving >400 mm of annual rainfall and bearing heavy soils, is broadly classified as a B zone. The arid tracts are grown with landraces/OPVs (open pollinated varieties) that are poor yielders. The progress achieved in pearl millet yields is attributed to the active role of the private sector in the dissemination of pearl millet hybrids in the productive zone of northern and central India rather than in the arid zone. On the other hand, the public sector could not record progress on par with that of the private sector. The active role of the private sector and the predominantly cross-pollinated nature of the crop have led to the rapid development and dissemination of hybrids pushing OPVs to marginal areas.

Pearl millet [*(Pennisetum glaucum* (L) R. Emend Stuntz)] is one of the most important among the millets or nutritious coarse grain cereals crops. It provides staple food for the poor in a short period in the relatively dry tracts of the country and cultivated by the economically poor farmers using either no improved production technology or using it at suboptimal levels. Pearl millet is the most drought and heat tolerant among cereals or millets and it has the highest water use efficiency under drought stress. It is the only major crop that has high levels of tolerance to both acid and saline soils. It can be cultivated even in the most sandy infertile soils and droughty environments where no other cereal crop can survive, Pearl millet can produce about 300-400 kg/ha of grain yield. Farmers cultivating pearl millet continue to face uncertain and low economic returns when production falls and also when production increases (due to low prices).

Improved crop management can play effective dual role both in increasing the productivity and enhancing production stability, provided there is commensurate demand for the grains. This demand for pearl millet grains is likely to increase with its increasing use as poultry feed. The demand of pearl millet grains can further increase if it enters the commercial channel for preparing environment foods. Such demand will increase the grain price, which in turn will lead to greater investment in crop management and productivity enhancement. These adaptive and nutritional features combined with yield potential make pearl millet an important Nutra-cereal crop to address the emerging challenges of global warming, water shortages, land degradation and food related health issues. Its importance as dry fodder and green forage is apparent with pearl millet to sustain the cattle wealth of dry regions and promote milk and meat production. With the adoption of new scientific farm technology of crop production at a large scale on farmers field the concept of adoption of inputs like improved seed, fertilizers, chemical, hired labour and mechanical draft power has greatly increased. Major emphasis in the adoption of new technology was on high yielding varieties, assured irrigation and use of chemicals. As a result of which the share of purchased inputs in the total cost of

production has increased substantially. The farmers are, therefore, concerned about the cost-returns of crop enterprises that they are growing or of those they can grow as to enable them to take decisions regarding selection of crops and cropping systems with low cost of cultivation and high net returns. Conducting of front line demonstrations on farmers field help to identify the constraints and potential of the pearl millet in that specific area in realizing the food security as well as it helps in improving the economic and social status. The aim of the front line demonstration is to convey the scientific technical message to farmers that if they use recommended package and practices then the yield of this crop can be easily doubled / tripled than their present level. In view of the importance of demonstrations in crop productivity and continuously getting feedback of problems and constraints faced by the farmers, front line demonstrations with full skill and knowledge with scientists have been taken up in pearl millet also. In the present study various front line demonstrations on different aspects of pearl millet were conducted by the scientists to prove the advantages of a recommended practice.

Today we are going to read about the high yielding Variety of Bajra. These are the best variety for Indian farmers.

List of improved variety of bajra

Variety Name	Company	Days Maturity	Yield	Area
86M88	Pioneer	86 days	16 Q/Acre	Maharashtra, Andhra Pradesh, Tamil Nadu, Karnataka
86M84	Pioneer	85-90 days	15Q/Acre	Rajasthan, Uttar Pradesh, Punjab, Delhi, Haryana, Gujrat, Madya Pradesh
9444	Bayer	80-85 days	13-14Q/Acre	Rajasthan, Haryana, Gujrat, Uttar Pradesh, Madya Pradesh
8144	Shriram	85-90 days	13 Q/Acre	All Region
8850	Shriram	85-90 days	13 Q/Acre	All Region
8494	Sriram	85-88 days	13 Q/Acre	All Region
Super boss	Kaveri	85 days	13Q/Acre	Rajasthan, Gujrat, Haryana, Punjab, Uttar Pradesh, Madya Pradesh, Maharashtra
NHB 4903	Nuziveedu seeds	80-85 days	12 Q/Acre	Rajasthan
Balwan 4903	Nuziveedu	85-90 days	18 Q/Acre	Maharashtra, Andhra Pradesh, Karnataka, Tamil Nadu, Telangana
1116	Ganga Kaveri	80 days	14-15 Q/Acre	Rajasthan
1827	Rasi	84-87 days	12-14 Q/Acre	All Region
272	HAU Hisar	85-90 days	10 Q/Acre	Rajasthan, Haryana
RHB 223	ICAR	85-90 days	12 Q/Acre	Rajasthan, Haryana, Gujarat
DHBH 1397	ICAR	80 days	14 Q/Acre	Rajasthan, Gujrat, Madya Pradesh, Uttar Pradesh, Punjab,
64	HHB	60-65 days	10-12 Q/Acre	Gujrat, Haryana, Rajasthan, Uttar Pradesh, Madya Pradesh, Maharashtra

### Methodology

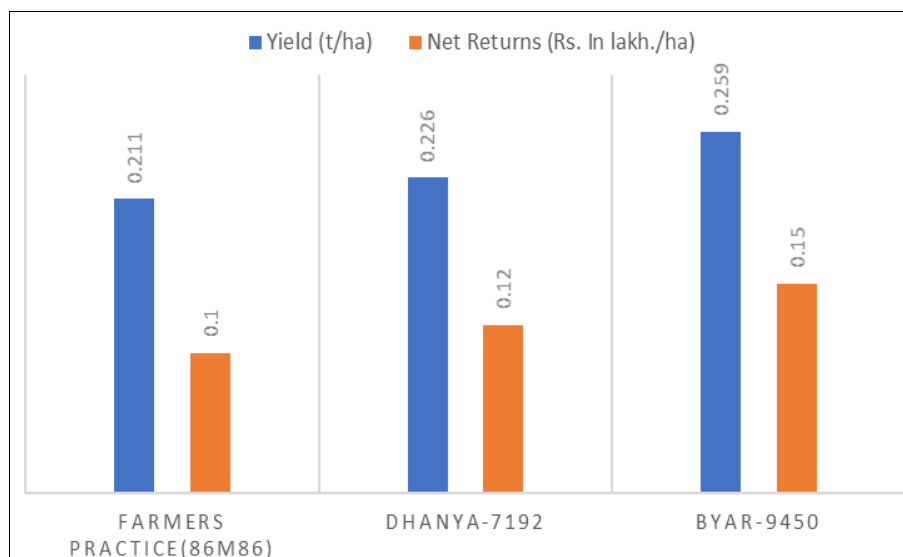
On farm trail Demonstrations were conducted in Pearl Millet in the season 2014-15 in various farmers' fields in village Nagla Pathak Block Bhagyanagar District Auraiya to demonstrate the production potential benefits of latest technologies along with traditional agricultural practices. The purpose of these OFTs was to know the yield gap between the OFT and the farmers' sector

and to find out the reasons for low yields and specific constraints faced by small farmers. Information on output data and inputs used per hectare was collected from on farm trail demonstration trails.

### Results and Discussion

Table 1: Assessment of high yielding Variety of Bajra.

Technology Option	No. of trials	Yield (t/ha)	Net Returns (Rs. In lakh. /ha)
Farmers practice (86M86)	15	0.211	0.10
Dhanya-7192		0.226	0.12
Byar-9450		0.259	0.15



Assessment of high yielding Variety of Bajra

KVK, Auraiya in UP conducted On-farm trial to assess high yielding variety of Bajra in farmers using the Pioneer 86M86 variety yield 0.211 (t/ha), Dhanya 7192, 0.226 (t/ha) & Bayar 9450 yield 0.259 (t/ha). Increase the yield 22.74% of Bayar-9450 than farmers practice Pioneer (86M86). Between two varieties had (Bayar -9450 & Pioneer 86M86) realized a net returns 0.15 lakh / ha as compared to the farmers practice with net returns of Rs. 0.10 lakh/ha.

### Conclusion

The study has assessed the impact of adopting new technology on the production of millet crop in Uttar Pradesh. The difference in per hectare productivity of millet between modern technology and traditional technology is estimated to be about 22.74 percent. The major component of this productivity increase was the difference in different types of technology, the contribution of which was approximately shared by the different inputs (Farmers practice(86M86), Dhanya-7192 and Bayar-9450). In terms of differences in their level of use between modern and traditional pearl millet production technologies, fertilizers and manures, human labour and other expenses. The study indicated that there is good potential for increasing the productivity and production of millet in dry areas of Uttar Pradesh by expanding more area under the improved hybrid Bayer-9450. The study suggests that to increase agricultural income in Auraiya, Uttar Pradesh, farmers should be made aware about the hybrid seeds of millet and its timely availability should be ensured to the farmers.

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