

# Performance of Var. BR-104 of Rajmash (*Phaseolus vulgaris L.*) in Temperate Areas of Poonch District of J&K

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## ABSTRACT

The temperate areas of Poonch district are popular for growing rajmash, as intercrop with maize. The traditional rajmash variety (local loran) has a yield potential of 4 quintals per hectare in mixed cropping. However, there is a promising variety (BR-104) which has a yield potential of 6.0 quintals per hectare in mixed cropping. Moreover, this variety has typical aroma and taste and is preferred for consumption by the people of J&K. The trials of variety BR-104, were therefore conducted which recorded an average yield of 3.60 q/ha with benefit-cost ratio of 2.64, as compared to local check of just 2.34.

**Keywords:** Demonstrations, rajmash, benefit-cost ratio.

Rajmash (*Phaseolus vulgaris L.*) is an important pulse crop of Jammu and Kashmir and finds an important place in cropping system of Mandi and Loran areas of Poonch district. Traditionally, local varieties of rajmash are sown with maize crop during *khariif* season in high hills (Shahpur, Mandi and Loran areas). Maize-rajmash is grown in an intercropping situation by farmers as a default practice since long time where maize and rajmash exist in a symbiotic relationship for each other. Maize crop provides support to the tender and trailing rajmash crop whereas rajmash has a positive effect on soil as it helps in nitrogen fixation through root nodules. The fertilizer requirement in rajmash is dependent upon variety/cultivar (Negi and Shekhar, 1993 and Saini and Negi, 1998). However, the judicious use of potassium is imperative to sustain the nutrient regime as well as the productivity of the crop (Rana *et al.* 2003). Maize is used for meeting the food and fodder requirement whereas Rajmash is harvested

both fresh and at maturity stages to supplement the need as vegetable/pulses respectively. Rajmash therefore provides an additional source of income to the farmers and also crop insurance in case of crop failure of maize. Rajmash is a cash crop and can boost farmers' economy and can play an important role in doubling farmers' income in this area. Therefore, the present investigation was carried to evaluate the performance of variety BR-104 to find its suitability over local rajmash under Poonch conditions in Front Line demonstrations at farmers' field.

## MATERIALS AND METHODS

The present investigation was carried out in the three blocks and 06 village panchayats of operational area of Krishi Vigyan Kendra Poonch. Poonch district of Jammu and Kashmir (India) is located on the southern slopes of Pir Panjal range and lies between 33° 25' to 34°10' north latitude

and 73° 58' to 74° 35' east longitude. 177 front line demonstrations on Bhaderwah Rajmash were laid in an area of 28.4 hectares in Shahpur, KG Top, Upper Khanetar (Poonch), Rajpura, Gagrian, Azmabad, Bedar (Mandi), and Loran, Sib, Sabzian (Loran) in temperate area of Poonch district. Red seeded twining type variety of Rajmash (BR-104) was sown in mixed cropping with maize in a ratio of 8:1 as twining type rajmash variety requires support during crop growth. The sowing of rajmash coincided with sowing time of maize seed. In Loran area of Poonch district which has sub temperate climate, rajmash sowing was completed between 19<sup>th</sup> to 22<sup>th</sup> April, 2017, whereas in Mandi, Shahpur and KG Top the sowing of rajmash was completed between 5<sup>th</sup> to 8<sup>th</sup> May, 2017.

## RESULTS AND DISCUSSION

### Plan of Front Line Demonstrations

The seed of Rajmash variety (variety BR 104, trailing

type; 160 kg) was procured from RHRSS Bhaderwah. The source of technology was the scientific package of practices issued by the research wing of Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu, J&K (Anonymous, 2015). The nutrient management was practiced as per requirement of main crop. The data on yield of Rajmash, cost of production and monetary returns were gathered from sites of demonstrated plots and from the alternate neighbourhood plots to compare the economic impact and to work out the economic feasibility of scientific cultivation of Rajmash in intermediate hills. The detail of FLDs conducted on rajmash is presented in Table 1.

### Performance of Var. BR-104 of Rajmash

It was found that BR-104 gave higher seed yield (3.60 quintals) per hectare as compared to local loran (3.26 quintals per hectare). Demo Variety BR-104 recorded a maximum yield of 4.6 quintals per hectare and

**Table 1:** Detail of Front Line Demonstrations on Rajmash

Blocks (Villages)	Technique of Sowing	Nutrient Management	Variety	No. of Trials	Area (ha)
<b>Loran</b> (Loran, Sib)			BR-104	27	4.2
<b>Mandi</b> (Rajpura, Azmabad, Bedar, Gagrian)	Line sowing	60:40:20		52	8.6
<b>Poonch</b> (KG Top, Shahpur, Upper Khanetar)				98	15.6
<b>Total</b>				<b>177</b>	<b>28.4</b>

**Table 2:** Economics of rajmash production under front line demonstrations

Yield (q/ha)	Demo. Plots	3.60
	Traditional Plots	3.26
Total cost of cultivation (₹/ha)	Demo. Plots	15800.00
	Traditional Plots	15600.00
<b>Additional cost of cultivation over local (₹/ha)</b>		
Gross returns (₹/ha)	Demo. Plots	57600.00
	Traditional Plots	52160.00
Net Returns (₹/ha)	Demo. Plots	41800.00
	Traditional Plots	36560.00
<b>Additional Net Returns over local (₹/ha)</b>		
B:C Ratio	Demo. Plots	2.64
	Traditional Plots	2.34
Increase in Net returns (%)		

lowest yield of 2.6 quintals per hectare with mean yield of 3.6 quintals per hectare. Corresponding to Demo variety, Local Loran recorded maximum yield 4.1 and 2.4 quintals per hectare with mean yield of 3.26 q/ha. The average yield increase of demo variety (BR-204) over check (local loran) under front line demonstrations was to the tune of 10.4%. Variety BR-104 also gave highest net returns per hectare (₹ 41,800) and benefit cost ratio (2.64) whereas local loran recorded lowest net returns (₹ 36560) and B:C ratio (2.34) Farmers actively participated in the trial and were satisfied with the performance of the variety BR-104 (Table 2).

## CONCLUSION

The performance of Var. BR-104 of Rajmash (*Phaseolus vulgaris* L.) in temperate areas of Poonch District of J&K and it can be concluded that Var. BR-104 is economically more sound compared to the existing variety of Rajmash i.e. local loran. The demonstrated variety BR-104 recorded 3.60 q/ha yield with benefit cost ratio of 2.64 compared to local check of just 2.34.

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