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Performance of soybean (*Glycine max* L.) varieties in post monsoon under varied weather conditions

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Abstract
The experiment was conducted in post-monsoon seasons (2017-2018) at Department of Agronomy, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani. The experiment was laid out in split plot design with three replications comprising three sowing dates i.e. 38th MW, 39th MW and 40th MW as main treatments and four varieties consists of JS-9560, MAUS-612, MAUS-162, MAUS-71 as sub-treatments. Data were collected on seed yield, straw yield and biological yield as yield components of soybean. The data was analyzed statistically, which showed that with early sowing gave higher yield of soybean as compared to the late sowing. The results revealed that the crop sown on 38th MW with variety JS-9560 and MAUS-612 gave significantly highest yield of soybean.

Keywords: Dry matter, sowing dates, soybean, varieties, yield

Introduction

Objectives of Study

Sowing date is an important factor and a least expensive cultural consideration that impacts soybean seed yield and quality. Fine-tune management of soybean by sowing date is a good approach to improve growth and development and to enhance the yield potential with good quality seed. Different varieties of soybean are sensitive to change in environmental conditions where the crop is grown. Therefore, it is necessary to study the genotype X environment interaction to identify the varieties which are stable in different environment (Seyyed and Seyyed 2013) [4]. to become self sufficient in the availability of quality seed to the farming community, it becomes essential to ascertain whether the sowing of soybean can be extended up to post monsoon season by treating newly developed varieties of different duration during this extended period of sowing for seed yield and quality. If the seed production of soybean becomes successful in post monsoon, the same seed can be made available for succeeding *summer* and *kharif* season also. The varieties MAUS-71, MAUS-612, MAUS-162 and JS-9560 were therefore proposed for testing during post monsoon with sowing span of 38th MW (17-23 Sept.) to 40th MW (01-07 Oct.) with the objective: 1. To find out suitable date of sowing for post monsoon soybean. 2. To evaluate the performance of different soybean varieties in post, monsoon season. 3. To study the interaction between sowing time and varieties in post monsoon soybean.

Methodology

The experiment was conducted during *post monsoon* 2017-2018 at Experimental farm, Department of Agronomy, College of Agriculture, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani. The soil was clayey in texture, low in nitrogen, low in phosphorus, rich in potash and slightly alkaline in reaction. The experiment was laid down in split-plot design with 12 treatment combinations comprising of three dates of sowing i.e. S_1 (MW 38), S_2 (MW 39), S_3 (MW 40) as main plot treatments four varieties i.e. JS-9560 (V_1), MAUS–612 (V_2), MAUS–162 (V_3) and MAUS–71 (V_4) as subplot treatments. Each treatment was replicated three times.

Results and Conclusion

The dates of sowing S_1 (MW 38) recorded highest seed yield ha^{-1} and was significantly superior to the rest of sowing dates. The difference in the seed yield was 59.95 per cent among the dates of sowing. The lowest seed yield and biological yield ha^{-1} has recorded by the dates of sowing S_3 (MW 40). This might be due to delayed sowing generally shifts reproductive growth into less favorable conditions with shorted days, lower radiation and temperature. Nath *et al*. (2017) [3]. Profound effect on straw yield ha^{-1} was noted due to different dates of sowing.

The dates of sowing S_1 (MW 38) produced highest straw yield which significantly superior over the rest of sowing dates. The difference in the straw yield was 11.47 per cent in among the first and last dates of sowing. Early sowing dates favored seed, straw and biological yield due to congenial weather parameters for better and balanced vegetative growth and proper portioning of dry matter in reproductive parts which is reflected through higher values of harvest index at S_1 (MW 38) sowing date. Anil Kumar *et al.* (2008) [1].

The variety V_1 (JS- 9560) recorded highest seed yield which was superior over the variety V_3 (MAUS-162) and V_4 (MAUS-71) but at par with V_2 (MAUS-612). These results collaborate to those reported by, Meena *et al.* (2013) [2]. Profound effect on straw yield (kg ha^{-1}) and biological yield (kg ha^{-1}) was noted due to different varieties. Variety V_2 (MAUS-612) produced higher straw yield and biological yield than V_3 (MAUS-162) and V_4 (MAUS-71) variety and it was at par with V_1 (JS- 9560).

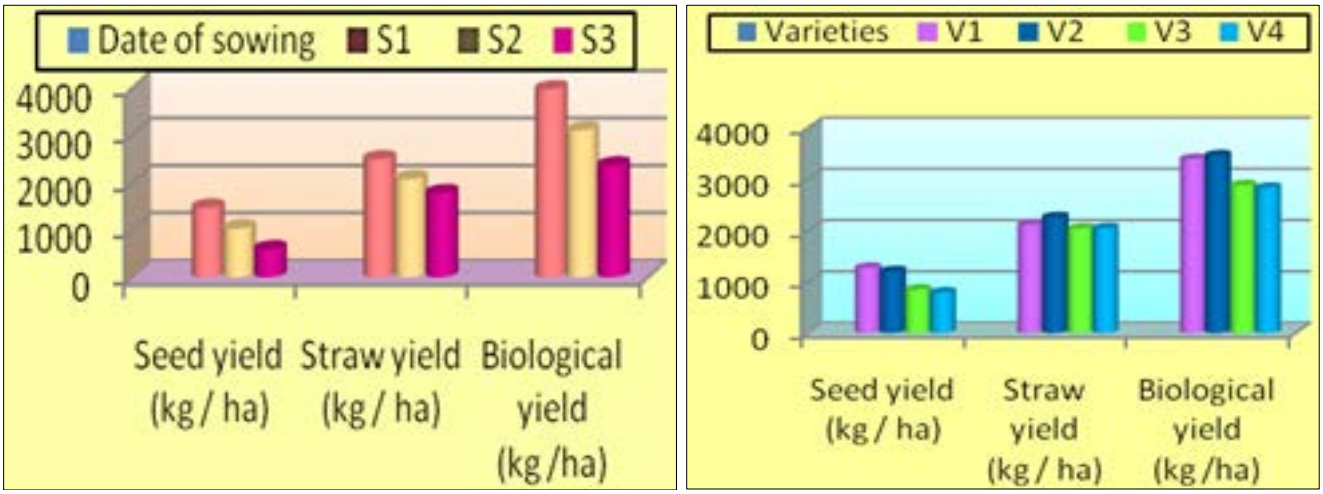

Fig 1: Seed, Straw and biological yield (kg ha^{-1}) of soybean as influenced by different date of sowing and varieties.

Table 1: Mean seed yield, straw yield, biological yield (kg ha^{-1}) and harvest index (%) of soybean as influenced by different treatments.

Treatment	Seed yield (kg ha^{-1})	Straw yield (kg ha^{-1})	Biological yield (kg ha^{-1})
Date of sowing			
S_1 –MW 38	1466	2489	3965
S_2 –MW 39	1028	2071	3099
S_3 –MW 40	587	1771	2358
SE+	26.6	39.96	73.27
CD at 5 %	104.79	156.86	287.64
Varieties			
V_1 – JS-9560	1270	2109	3390
V_2 – MAUS-612	1204	2258	3464
V_3 – MAUS-162	847	2034	2878
V_4 – MAUS-71	788	2041	2830
SE+	27.72	20.65	35.00
C.D. at 5 %	82.35	61.34	103.99
Interaction (SxV)			
SE+	48.01	35.76	60.62
C.D. at 5 %	142.64	106.25	180.11
General mean	1027	2110	3141

Conclusion

From the study, in post monsoon, it may be concluded that early sowing of soybean on 38th MW with varieties JS-9560 and MAUS-612 is better to obtain higher seed yield.

References

1. Anil Kumar V, Pandey AM, Shekh, Manoj Kumar. Growth and yield of soybean in relation to temperature, photoperiod and sunshine duration at Anand, Gujrat, India. American-Eurasiyn Journal of Agronomy. 2008; 1(2):45-50.
2. Meena BS, Meena GS. Evaluation of Major *Kharif* Crop Varieties to Climate Variability in Vertisols of Hadoti Region of Rajasthan. J Krishi Vigyan. 2013; 2(1):23-25.
3. Nath A, Karunakar AP, Kumar A, Nagar RK. Effect of sowing dates and varieties on soybean performance in Vidarbha region of Maharashtra, India. Journal of Applied and Natural Science. 2017; 9(1):544-550.
4. Seyyed MS, Seyyed ANN. Effects of planting date and cultivar on the yield and yield components of soybean in north of Iran. ARPN J of Agril. And Bio. Sci. 2013; 8(10):81-85.