ICAR- Indian Institute of Soybean Research, Khandwa Road, Indore (M.P.)

Project Report

"Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean"

Trial conducted at ten (10) location/centers of AICRP Soybean (Agronomy) during kharif 2020

Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Twelve treatment combinations of potassium salt of active phosphorus (PSAP) were tested under RBD to evaluate the Bio-efficacy of potassium salt of active phosphorus (PSAP) on soybean (Table 2.6.1. to 2.5.27).

North plain zone

Pantnagar

Application of potassium salt of active phosphorus (PSAP) on soybean significantly influenced the growth and yield of soybean (Table 2.6.2). Significantly higher yield of soybean were registered with the application of RDF with RPM without PSAP (T1) + PSAP @ 9g/l followed by T1 + PSAP @ 6 g/l, T1, 75% P&K +75% RPM without PSAP (T2) + PSAP @ 9g/l, T2 and T2 + PSAP @ 6 g/l. However, the lowest seed yield was recorded with application of 100%N +00% P&K +50% RPM without PSAP (T4) followed by T4 + PSAP @ 6 g/l and T4 + PSAP@ 9g/l. The highest cost of cultivation was registered with the treatment T1 + PSAP @ 9g/l, followed by T2 + PSAP@ 9g/l and T3 + PSAP @ 9g/l. Whereas, lowest cost of cultivation was observed with the treatment 100%N +00% P&K +50% RPM without PSAP (T4) followed by 50% P&K +50% RPM without PSAP (T3) and 75% P&K +75% RPM without PSAP (T2). On the economics point of view, the maximum net returns and B:C ratio was registered with the treatment RDF with RPM without PSAP (T1) followed by 75% P&K +75% RPM without PSAP (T2) and 50% P&K +50% RPM without PSAP (T3). Whereas, lowest net returns and B:C ratio was found under the application of T4 + PSAP @ 9g/l, followed by T4 + PSAP @ 6 g/l and T3 + PSAP@ 9g/l. The growth, development and yield attributes data given in Table 2.6.1.

Eastern zone

Raipur

Application of potassium salt of active phosphorus (PSAP) on soybean significantly influenced the growth and yield of soybean (Table 2.6.4). The highest yield was registered with the application of T1 + PSAP @ 9g/l followed by T1 + PSAP @ 6 g/l. However, the lowest seed yield was recorded with application of 100%N +00% P&K +50% RPM without PSAP (T4) followed by T4 + PSAP @ 9g/l and T4 + PSAP@ 6 g/l. The highest cost of cultivation was registered with the treatment T4 + PSAP @ 9g/l followed by T1 + PSAP @ 9g/l and T2 + PSAP@ 9g/l. Whereas, lowest cost of cultivation was observed with the treatment 100%N +00% P&K +50% RPM without PSAP (T4) followed by 50% P&K +50% RPM without PSAP (T3) and 75% P&K +75% RPM without PSAP (T2). The maximum net returns and B:C ratio was registered with the treatment 75% P&K +75% RPM without PSAP (T2) followed by 50% P&K +50% RPM without PSAP (T3) and T1 + PSAP @ 6 g/l. Whereas, lowest net returns and B:C ratio was found under the application of T4 + PSAP@ 9g/l followed by T4 + PSAP @ 6 g/l and T3 + PSAP@ 9g/l. The growth, development and yield attributes data given in Table 2.6.3.

Ranchi

Application of potassium salt of active phosphorus (PSAP) on soybean significantly influenced the growth and yield of soybean (Table 2.6.7). Among the different treatments, the highest yield was noted with T1 + PSAP @ 9g/l and closely followed by T2 + PSAP @ 9g/l, T1 + PSAP @ 6 g/l and T2 + PSAP@ 6 g/l. The highest cost of cultivation was registered with the treatment T1 + PSAP @ 9g/l. The lowest cost of cultivation was observed with the treatment T4- 100%N +00% P&K +50% RPM without PSAP. The maximum net returns were found with T1- RDF with RPM without PSAP while the highest B:C Ratio was with T2-75% P&K +75% RPM without PSAP. The growth, development and yield attribute data given in Table 2.6.5 and 2.6.6.

On the basis of zonal mean, the maximum yield was recorded with T1 + PSAP @ 9g/l and closely followed by T1-RDF with RMP without PSAP and T2 + PSAP @ 9g/l (Table 2.6.9). The highest net returns and B:C ratio was with T1- RDF with RMP without PSAP. The growth, development and yield attributes data given in Table 2.6.8.

North Eastern Hill

Imphal

Application of potassium salt of active phosphorus (PSAP) on soybean significantly influenced the growth and yield of soybean (Table 2.6.10 and 2.6.11). The highest yield of soybean was registered with the application of T1 + PSAP @ 9g/l (T3) followed by T1 + PSAP @ 6 g/l (T2). However, the lowest seed yield was recorded with application of 100%N +00% P&K +50% RPM without PSAP (T4) followed by T4 + PSAP @ 9g/l and T4 + PSAP @ 6 g/l. The highest cost of cultivation was registered with the treatment T1 + PSAP @ 9g/l followed by T4 + PSAP @ 9g/l and T3 + PSAP @ 9g/l. Whereas, lowest cost of cultivation was observed with the treatment 100%N +00% P&K +50% RPM without PSAP (T4) followed by 50% P&K +50% RPM without PSAP. The economic analysis revealed that the maximum net returns and B:C ratio was registered with the treatment T1 + PSAP @ 6 g/l. Whereas, lowest net returns and B:C ratio was found under the application of T4 + PSAP @ 9g/l.

Central zone

Amravati

Application of potassium salt of active phosphorus (PSAP) on soybean significantly influenced the growth and yield of soybean (Table 2.6.12 and 2.6.13). Significantly higher yield of soybean was registered with the application of RDF with RPM without PSAP (T1) + PSAP @ 6g/l followed by RDF with RPM without PSAP (T1). However, the lowest seed yield was recorded with application of 100%N +00% P&K +50% RPM without PSAP (T4) followed by T3 + PSAP @ 9g/l. The highest cost of cultivation was registered with the treatment T1 + PSAP@ 9g/l followed by T4 + PSAP @ 9g/l. Whereas, lowest cost of cultivation was observed with the treatment 100%N +00% P&K +50% RPM without PSAP (T4) followed by 50% P&K +50% RPM without PSAP (T3). From the economics point of view, the maximum net returns and B:C ratio was registered with the treatment RDF with RPM without PSAP. Whereas, lowest net returns and B:C ratio was found under the application of T4 + PSAP @ 9g/l followed by T3 + PSAP @ 9g/l. Among the potassium salt of active phosphorus (PSAP) treatment the maximum net returns and B:C ratio was registered under the treatment T1 + PSAP @ 6 g/l.

6.4.2. Kota

Application of potassium salt of active phosphorus (PSAP) on soybean significantly influenced the growth and yield of soybean (Table 2.6.14 and 2.6.15). Significantly higher yield of soybean was registered with the application of T1 + PSAP@ 9g/l which was closely followed by T4 + PSAP @ 9g/l. Similarly, the highest cost of cultivation was also registered under the same treatment. However, the lowest seed yield was recorded with application of 50% P&K +50% RPM without PSAP (T3) followed by 75% P&K +75% RPM without PSAP (T2). The economics showed that the lowest cost of cultivation was observed with the treatment 100%N +00% P&K +50% RPM without PSAP (T4) followed by 50% P&K +50% RPM without PSAP (T3). The maximum net returns and B:C ratio was registered with the treatment 100%N +00% P&K +50% RPM without PSAP (T4) followed by RDF with RPM without PSAP (T1). Whereas, lowest net returns and B:C ratio was found under the application of T3 + PSAP @ 9g/l followed by T2 + PSAP @ 9g/l. Among the potassium salt of active phosphorus (PSAP) treatment the maximum net returns and B:C ratio was registered under the treatment T1 + PSAP @ 6 g/l.

6.4.2. Sehore

The yield of soybean (Cv. RVS 24) didn"t vary significantly among the different treatment of potassium salt of active phosphorus (Table 2.6.16 and 2.6.17). Numerically, the highest yield of soybean was registered with the application of T1 + PSAP @ 9g/l and closely followed by T1 + PSAP @ 6 g/l and RDF with RPM without PSAP. However, the lowest seed yield was recorded with application of 100%N +00% P&K +50% RPM without PSAP (T4) and closely followed by 50% P&K +50% RPM without PSAP (T3). Economics revealed that the highest cost of cultivation was registered under the treatment T1 + PSAP @ 9g/l followed by T2 + PSAP@ 9g/l and T4 + PSAP @ 9g/l. Similarly, the lowest cost of cultivation was observed with the treatment 100%N +00% P&K +50% RPM without PSAP (T4) followed by 50% P&K +50% RPM without PSAP (T3). The maximum net returns were registered with the treatment RDF with RPM without PSAP (T1) followed by 75% P&K +75% RPM without PSAP (T2). The maximum B:C ratio was registered with the application of T1 + PSAP @ 9g/l and T1 + PSAP@ 6g/l. Whereas, lowest net returns were found under the application of T4 + PSAP @ 9g/l followed by T4 + PSAP@ 6 g/l. Similarly, the highest IBCR was observed with application of T3 + PSAP @ 9g/l followed by T4 + PSAP @ 6 g/l and T4 + PSAP @ 9g/l.

On the basis of zonal mean, the maximum yield was noticed with T2=T1 + PSAP@ 6 g/l and closely followed by T3=T1 + PSAP@ 9g/l and T1=RDF with RPM without PSAP (Table 2.6.19). The maximum net returns and B:C ratio was associated with T1=RDF with RPM without PSAP. The growth, development and yield attributes data are given in Table 2.6.18.

Southern zone

Adilabad

Application of potassium salt of active phosphorus (PSAP) on soybean (Cv. MACS 1188) significantly influenced the growth and yield of soybean at Adilabad centre (Table 2.6.20 and 2.6.21). Significantly higher yield was registered with the application of T1 + PSAP @ 9g/l followed by T1 + PSAP @ 6 g/l and T2 + PSAP @ 9g/l. The lowest yield was recorded with treatment 100%N +00% P&K +50% RPM without PSAP (T4) and followed by 50% P&K +50% RPM without PSAP (T3). Economics point of view, the highest cost of cultivation was registered under the T1 + PSAP @ 9g/l treatment. The lowest cost of cultivation was observed with the treatment 100%N +00% P&K +50% RPM without PSAP (T4) followed by 50% P&K +50% RPM without PSAP (T3). The maximum net returns, B:C ratio and IBCR was registered with the treatment T1 + PSAP @ 9g/l. Whereas, lowest net returns and B:C ratio was found under the application of 100%N +00% P&K +50% RPM without PSAP.

Dharwad

Application of potassium salt of active phosphorus (PSAP) on soybean (Cv. MACS 1188) significantly influenced the yield of soybean at Dharwad centre (Table 2.6.22 and 2.6.23). The highest yield, cost of cultivation and net returns were registered under the treatment T1 + PSAP @ 9g/l and followed by T1 + PSAP@ 6g/l. However, lowest yield, cost of cultivation and net returns were registered under the treatment 100%N +00% P&K +50% RPM without PSAP (T4). The maximum B:C ratio was registered with the treatment T1 + PSAP @ 6 g/l and minimum with T1 + PSAP@ 9g/l.

Pune

Application of potassium salt of active phosphorus (PSAP) on soybean (Cv. MACS 1188) significantly influenced the growth and yield of soybean at Pune centre (Table 2.6.24 and 2.6.25). Significantly the highest yield of soybean was registered with the application of T1 + PSAP @ 9g/l followed by T1 + PSAP @ 6 g/l. The lowest yield was recorded with treatment 100%N +00% P&K +50% RPM without PSAP (T4) and closely followed by T4 + PSAP @ 6 g/l and T4 + PSAP @ 9 g/l. Economics point of view, the highest cost of cultivation was registered under the T1 + PSAP@ 9g/l and followed by T2 + PSAP @ 6 g/l treatment. The lowest cost of cultivation was found with the

treatment 100%N +00% P&K +50% RPM without PSAP (T4). The maximum net returns and B:C ratio was registered with the treatment 100%N +00% P&K +50% RPM without PSAP (T4) and closely followed by 75% P&K +75% RPM without PSAP (T2) Whereas, lowest net returns and B:C ratio was found under the application of T4 + PSAP@ 9g/l followed by T3 + PSAP@ 6 g/l.

On the basis of zonal mean, the highest yield was recorded with **T3**=T1 + PSAP@ 9g/l and closely followed by **T2**=T1 + PSAP@ 6 g/l and **T6**=T4 + PSAP @ 9g/l (Table 2.6.27). The highest net returns and B:C ratio was recorded with **T3**=T1 + PSAP @ 9g/l and **T12**=T10 + PSAP @ 9g/l. The growth, development and yield attributes data was presented in table 2.6.26.

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Table 2.6.1

AGRON. 6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: North plain **Centre:** Pantnagar **Design:** RBD **Replications:** Three Variety: PS 1347
Character: Yield and economics

Treatment	Bran-ches/ plant	Pods/ plant	Seed index	Nodule No./ plant	Nodule dry weight/ Plant (mg/plant)	Plant height (cm)	Plant dry matter (g/plant) at DAS			CGR (g/m^2/day)		RGR (g/g/day)	
							30	45	60	45-30	60-45	45-30	60-45
T1. RDF with RPM without PSAP	3.11	65.3	10.27	68	162.4	48.4	3.73	12.04	21.73	12.74	14.86	0.0647	0.0253
T1 + PSAP@ 6 g/l	2.77	75.4	11.12	59	143.0	49.1	3.76	12.32	23.21	13.14	16.69	0.066	0.0277
T1 + PSAP@ 9g/l	3.78	81.4	11.59	69	165.7	51.9	3.50	12.88	24.55	14.38	17.89	0.073	0.0293
T2.75% P&K +75% RPM without PSAP	4.78	61.1	10.32	75	188.8	47.3	3.63	11.93	21.33	12.72	14.41	0.066	0.0247
T2 + PSAP@ 6 g/l	3.33	78.1	10.47	69	177.3	49.7	3.66	12.09	24.04	12.93	18.33	0.066	0.313
T2 + PSAP@ 9g/l	4.22	78.6	10.88	73	181.7	51.0	3.49	12.09	24.26	13.19	18.66	0.0687	0.033
T3. 50% P&K +50% RPM without PSAP	2.89	57.0	9.83	78	195.0	42.3	3.60	11.80	21.89	12.57	15.47	0.0666	0.027
T3 + PSAP@ 6 g/l	3.66	78.5	9.93	74	185.0	41.8	3.40	11.85	23.30	12.96	17.56	0.707	0.0307
T3 + PSAP@ 9g/l	4.11	70.56	10.73	80	200.0	47.6	3.39	11.85	22.92	12.97	16.97	0.710	0.0300
T4. 100%N +00% P&K +50% RPM without PSAP	3.33	52.4	9.18	108	255.2	43.6	3.67	10.11	20.46	9.88	15.86	0.0537	0.0343
T4 + PSAP@ 6 g/l	3.99	62.7	9.79	88	204.3	44.4	3.35	10.74	20.71	11.32	15.29	0.0643	0.0303
T4 + PSAP@ 9g/l	3.78	60.0	9.95	92	212.4	45.4	3.74	11.78	21.28	12.32	14.57	0.0636	0.0247
SEm	0.784	5.52	0.456	57.0	15.32	2.90	0.416	1.25	1.49	2.03	2.927	0.104	0.0068
CD (P=0.05)	NS	16.19	NS	NS	44.93	NS	NS	NS	NS	NS	NS	NS	NS

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.2

AGRON.6/20.Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: North Plain **Centre:** Pantnagar **Design:** RBD **Replications:** Three
Variety: PS 1347 **Character:** Yield and economics

Treatment	Seed yield/ Plant (g)	Yield (kg/ha)	Straw yield (kg/ha)	Biological yield (kg/ha)	HI (%)	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	B:C ratio	IBCR
T1.RDF with RPM without PSAP	11.0	1966	4068	6034	32.65	30962	76278	45316	2.46	6.38
T1 + PSAP@ 6 g/l	11.24	2011	4385	6397	31.42	48135	78031	29896	1.62	1.23
T1 + PSAP@ 9g/l	11.87	2144	4201	6346	33.67	54526	83204	28678	1.53	0.94
T2.75% P&K +75% RPM without PSAP	10.51	1782	3768	5550	32.14	29776	69139	39363	2.32	6.66
T2 + PSAP@ 6 g/l	10.93	1740	3631	5371	32.27	46252	67512	21260	1.46	0.95
T2 + PSAP@ 9g/l	10.52	1825	3849	5673	32.04	53340	70788	17448	1.33	0.59
T3.50% P&K +50% RPM without PSAP	10.37	1745	3918	5663	30.99	28591	67684	39093	2.37	8.27
T3 + PSAP@ 6 g/l	10.53	1819	3881	5770	32.14	45067	70558	25491	1.57	1.20
T3 + PSAP@ 9g/l	10.60	1621	3503	5125	31.60	52155	62913	10758	1.21	0.38
T4.100%N +00% P&K +50% RPM without PSAP	10.20	1176	3203	4379	26.89	23862	45640	21778	1.91	0.00
T4 + 10.23PSAP@ 6 g/l	10.07	1250	3389	4639	26.67	40338	48486	8148	1.20	0.49
T4 + PSAP@ 9g/l	10.23	1261	3360	4621	27.04	47426	48917	1491	1.03	0.06
SEm	0.451	156.86	256.12	343.6	2.00	-	-	-	0.138	-
CD (P=0.05)	NS	460.07	751.3	1007.7	5.88	-	-	-	0.406	-

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.3

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Eastern **Centre:** Raipur **Character:** Yield and economics **Design:** RBD **Replications:** Three
Variety: JS 97 52

Treatment	Bran-ches/ plant	Pods/ plant	Seed index	Nodule No./ plant	Nodule dry weight/ plant	Plant height (cm)	Plant dry matter (g/plant) at DAS			CGR (g/m^2/day)		RGR (g/g/day)	
							30	45	60	45-30	60-45	45-30	60-45
T1. RDF with RPM without PSAP	4.00	62.09	11.82	7.94	1.43	50.28	1.25	6.81	40.62	0.345	2.221	0.0565	0.0404
T1 + PSAP@ 6 g/l	4.25	63.18	12.13	8.01	1.48	52.83	1.29	6.75	42.58	0.354	2.345	0.0567	0.0415
T1 + PSAP@ 9g/l	4.25	65.36	12.21	8.03	1.48	55.15	1.28	6.89	43.25	0.3671	2.408	0.0578	0.0417
T2.75% P&K +75% RPM without PSAP	3.55	55.84	11.75	7.88	1.45	48.39	1.19	5.45	34.27	0.274	1.907	0.0518	0.0375
T2 + PSAP@ 6 g/l	3.75	58.02	10.41	7.90	1.44	49.75	1.31	6.24	38.04	0.324	2.119	0.0529	0.0389
T2 + PSAP@ 9g/l	3.85	58.14	10.54	7.94	1.46	50.16	1.26	6.38	38.41	0.329	2.112	0.0542	0.0401
T3. 50% P&K +50% RPM without PSAP	3.35	48.10	9.38	7.66	1.18	47.36	1.19	4.88	29.85	0.241	1.645		0.0365
T3 + PSAP@ 6 g/l	3.35	50.46	9.63	7.72	1.21	48.15	1.20	5.01	31.05	0.247	1.728	0.0488	0.0369
T3 + PSAP@ 9g/l	3.45	53.27	10.34	7.75	1.39	47.21	1.24	5.08	31.58	0.245	1.745	0.0505	0.0372
T4. 100%N +00% P&K +50% RPM without PSAP	2.65	44.36	9.14	6.32	0.81	38.46	1.15	3.87	27.25	0.168	1.575	0.0465	0.0352
T4 + PSAP@ 6 g/l	2.85	45.11	9.92	6.68	0.96	40.23	1.18	4.23	28.63	0.198	1.610	0.0474	0.0355
T4 + PSAP@ 9g/l	3.00	47.25	9.61	6.83	1.02	40.85	1.18	4.85	29.11	0.228	1.619	0.0485	0.0361
SEm	-	2.09	-	-	-	-	-	-	-	-	-	-	-
CD (P=0.05)	NS	5.64	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.4

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Eastern **Centre:** Raipur **Character:** Yield and economics
Design: RBD **Replications:** Three **Variety**: JS 97 52

Treatment	Seed yield/ plant	Yield (kg/ha)	Straw yield (kg/ha)	Biological yield (kg/ha)	HI (%)	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	B:C ratio
T1. RDF with RPM without PSAP	33.87	1961	3463	5424.48	36.15	19810	76094.56	56285	3.84
T1 + PSAP@ 6 g/l	35.18	1968	3434	5403	36.43	33985	76370	42385	2.25
T1 + PSAP@ 9g/l	35.24	1984	3508	5491	36.12	41072	76960	35888	1.87
T2.75% P&K +75% RPM without PSAP	26.78	1634	2851	4485	36.43	18400	63403	45003	3.45
T2 + PSAP@ 6 g/l	29.58	1658	2941	4599	36.04	32575	64311	31736	1.97
T2 + PSAP@ 9g/l	31.45	1683	3010	4692	35.86	39662	65293	25631	1.65
T3. 50% P&K +50% RPM without PSAP	22.08	1573	2806	4379	35.91	17010	61017	44007	3.59
T3 + PSAP@ 6 g/l	24.11	1588	2803	4391	36.17	31185	61630	30444	1.98
T3 + PSAP@ 9g/l	24.32	1590	2783	4373	36.36	38272	61703	23432	1.61
T4. 100%N +00% P&K +50% RPM without PSAP	18.48	1094	1953	3047	35.91	15510	42455	26945	2.74
T4 + PSAP@ 6 g/l	18.64	1126	2021	3148	35.78	36772	43704	6932	1.19
T4 + PSAP@ 9g/l	19.25	1113	1987	3101	35.91	43860	43204	-656	0.99
SEm	5.2	52.4	78.4	-	-	-	-	-	-
CD (P=0.05)	NS	159.1	240.4	-	NS	-	-	-	-

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.5

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Eastern **Centre:** Ranchi **Character:** Plant dry matter **Design:** RBD
Replications: Three **Variety**: JS 97 52

Treatment	Plant dry matter (g/plant) at DAS			CGR ($g/m^2/day$)		RGR (g/g/day)	
	30	45	60	30-45	45-60	30-45	45-60
T1. RDF with RPM without PSAP	2.57	8.17	13.00	0.373	0.322	0.033	0.013
T1 + PSAP@ 6 g/l	2.53	8.67	14.33	0.409	0.378	0.036	0.015
T1 + PSAP@ 9g/l	2.50	9.00	14.99	0.433	0.400	0.037	0.015
T2.75% P&K +75% RPM without PSAP	2.30	7.50	12.00	0.347	0.300	0.034	0.013
T2 + PSAP@ 6 g/l	2.32	7.83	13.00	0.368	0.344	0.035	0.015
T2 + PSAP@ 9g/l	2.27	8.00	13.83	0.382	0.389	0.036	0.016
T3. 50% P&K +50% RPM without PSAP	1.95	6.70	9.33	0.317	0.176	0.036	0.009
T3 + PSAP@ 6 g/l	1.93	6.76	9.67	0.322	0.194	0.036	0.010
T3 + PSAP@ 9g/l	1.97	7.00	9.93	0.336	0.196	0.037	0.010
T4.100%N +00% P&K +50% RPM without PSAP	1.63	5.17	8.17	0.236	0.200	0.033	0.013
T4 + PSAP@ 6 g/l	1.58	5.33	8.33	0.250	0.200	0.035	0.013
T4 + PSAP@ 9g/l	1.69	5.60	9.00	0.261	0.227	0.035	0.013
SEm	0.10	0.46	0.72	0.029	0.051	0.002	0.002
CD (P=0.05)	0.31	1.36	2.11	0.085	0.149	NS	NS

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.6

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Eastern **Centre:** Ranchi **Design:** RBD **Replications:** Three **Variety**: JS 97 52
Character: Yield attributes

Treatment	Branches/ plant	Pods/ plant	Seed index	Nodule No./ plant	Nodule dry weight/ plant	Plant height (cm)
T1. RDF with RPM without PSAP	4.50	53.00	9.43	36.80	0.23	78.67
T1 + PSAP@ 6 g/l	4.83	54.67	9.60	37.33	0.25	79.67
T1 + PSAP@ 9g/l	5.00	57.67	9.90	38.93	0.26	82.67
T2.75% P&K +75% RPM without PSAP	4.17	48.33	9.34	34.93	0.21	75.33
T2 + PSAP@ 6 g/l	4.30	49.33	9.37	35.73	0.22	76.00
T2 + PSAP@ 9g/l	4.67	50.00	9.43	36.27	0.23	79.00
T3. 50% P&K +50% RPM without PSAP	3.67	36.67	9.33	32.53	0.19	68.67
T3 + PSAP@ 6 g/l	3.80	38.00	9.36	33.07	0.20	70.00
T3 + PSAP@ 9g/l	3.87	39.00	9.37	33.87	0.21	70.00
T4.100%N +00% P&K +50% RPM without PSAP	2.93	31.00	9.23	26.40	0.17	65.33
T4 + PSAP@ 6 g/l	3.00	32.67	9.27	28.53	0.18	65.67
T4 + PSAP@ 9g/l	3.33	33.33	9.30	28.80	0.19	66.67
SEm±	0.50	3.02	0.30	2.11	0.01	1.55
CD (P=0.05)	1.48	8.87	NS	6.19	0.04	4.56

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.7

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Eastern **Centre:** Ranchi **Character:** Yield
Design: RBD **Replications:** Three **Variety**: JS 97 52

Treatment	Seed yield/ plant	Yield (kg/ha)	Straw yield (kg/ha)	Biological yield (kg/ha)	HI (%)	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	B:C ratio	IBCR
T1. RDF with RPM without PSAP	5.45	1857	2675	4532	40.98	28500	72067	43567	1.53	2.53
T1 + PSAP@ 6 g/l	5.67	1933	2771	4704	41.08	43080	75013	31933	0.74	1.74
T1 + PSAP@ 9g/l	5.99	2044	2925	4969	41.11	50370	79288	28918	0.57	1.57
T2.75% P&K +75% RPM without PSAP	5.25	1789	2547	4336	41.26	26800	69409	42609	1.59	2.59
T2 + PSAP@ 6 g/l	5.58	1904	2707	4611	41.27	41380	73864	32484	0.79	1.79
T2 + PSAP@ 9g/l	5.83	1989	2800	4789	41.58	48670	77169	28499	0.59	1.59
T3. 50% P&K +50% RPM without PSAP	4.39	1497	2229	3725	40.19	25100	58065	32965	1.31	2.31
T3 + PSAP@ 6 g/l	4.58	1563	2302	3865	40.42	39680	60625	20945	0.53	1.53
T3 + PSAP@ 9g/l	4.97	1693	2435	4128	41.03	46970	65699	18729	0.40	1.40
T4. 100%N +00% P&K +50% RPM without PSAP	3.50	1195	2064	3258	36.63	22200	46353	24153	1.09	2.09
T4 + PSAP@ 6 g/l	3.57	1216	2086	3302	36.65	44070	47171	3101	0.07	1.07
T4 + PSAP@ 9g/l	3.69	1258	2133	3391	37.16	28500	48805	-2555	-0.05	0.95
SEm±	0.18	62.19	70.20	96.30	1.18	-	2412.98	2412.98	0.06	0.06
CD (P=0.05)	0.54	182.41	205.91	282.46	3.46	-	7077.46	7077.46	0.19	0.19

Table 2.6.8

AGRON. 6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean Zone:
Centre: Eastern **Character:** Yield and economics **Design:** RBD **Replications:** Three
Variety: JS 97 52

Treatment	Bran-ches/ plant	Pods/ plant	Seed index	Nodule No./ plant	Nodule dry weight/ Plant (mg/plant)	Plant height (cm)	Plant dry matter (g/plant) at DAS			CGR (g/m^2/day)		RGR (g/g/day)	
							30	45	60	45-30	60-45	45-30	60-45
T1. RDF with RPM without PSAP	4.25	57.55	10.63	22.37	0.830	64.48	1.91	7.49	26.81	0.36	1.27	0.045	0.027
T1 + PSAP@ 6 g/l	4.54	58.93	10.87	22.67	0.865	66.25	1.91	7.71	28.46	0.38	1.36	0.046	0.028
T1 + PSAP@ 9g/l	4.63	61.52	11.06	23.48	0.870	68.91	1.89	7.95	29.12	0.40	1.40	0.047	0.028
T2.75% P&K +75% RPM without PSAP	3.86	52.09	10.55	21.41	0.830	61.86	1.75	6.48	23.14	0.31	1.10	0.043	0.025
T2 + PSAP@ 6 g/l	4.03	53.68	9.89	21.82	0.830	62.88	1.82	7.04	25.52	0.35	1.23	0.044	0.027
T2 + PSAP@ 9g/l	4.26	54.07	9.99	22.11	0.845	64.58	1.77	7.19	26.12	0.36	1.25	0.045	0.028
T3. 50% P&K +50% RPM without PSAP	3.51	42.39	9.36	20.10	0.685	58.02	1.57	5.79	19.59	0.28	0.91	0.036	0.023
T3 + PSAP@ 6 g/l	3.58	44.23	9.50	20.40	0.705	59.08	1.57	5.89	20.36	0.28	0.96	0.042	0.023
T3 + PSAP@ 9g/l	3.66	46.14	9.86	20.81	0.800	58.61	1.61	6.04	20.76	0.29	0.97	0.044	0.024
T4. 100%N +00% P&K +50% RPM without PSAP	2.79	37.68	9.19	16.36	0.490	51.90	1.39	4.52	17.71	0.20	0.89	0.040	0.024
T4 + PSAP@ 6 g/l	2.93	38.89	9.60	17.61	0.570	52.95	1.38	4.78	18.48	0.22	0.91	0.041	0.024
T4 + PSAP@ 9g/l	3.17	40.29	9.46	17.82	0.605	53.76	1.44	5.23	19.06	0.24	0.92	0.042	0.025

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.9

AGRON.6/20.Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Eastern **Character:** Yield and economics
Design: RBD **Replications:** Three **Variety**: JS 97 52

Treatment	Seed yield/ Plant (g)	Yield (kg/ha)	Straw yield (kg/ha)	Biological yield (kg/ha)	HI (%)	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	B:C ratio	IBCR
T1. RDF with RMP without PSAP	19.66	1909	3069	4978	38.57	24155	74081	49926	2.69	2.53
T1 + PSAP@ 6 g/l	20.43	1951	3103	5053	38.76	38533	75692	37159	1.50	1.74
T1 + PSAP@ 9g/l	20.62	2014	3217	5230	38.62	45721	78124	32403	1.22	1.57
T2.75% P&K +75% RMP without PSAP	16.02	1711	2699	4410	38.85	22600	66406	43806	2.52	2.59
T2 + PSAP@ 6 g/l	17.58	1781	2824	4605	38.66	36978	69087	32110	1.38	1.79
T2 + PSAP@ 9g/l	18.64	1836	2905	4741	38.72	44166	71231	27065	1.12	1.59
T3. 50% P&K +50% RMP without PSAP	13.24	1535	2518	4052	38.05	21055	59541	38486	2.45	2.31
T3 + PSAP@ 6 g/l	14.35	1575	2552	4128	38.30	35433	61127	25695	1.26	1.53
T3 + PSAP@ 9g/l	14.65	1642	2609	4251	38.70	42621	63702	21081	1.01	1.40
T4.100%N +00% P&K +50% RMP without PSAP	10.99	1144	2008	3153	36.27	18855	44404	25549	1.92	2.09
T4 + 10.23PSAP@ 6 g/l	11.11	1171	2054	3225	36.22	40421	45438	5017	0.63	1.07
T4 + PSAP@ 9g/l	11.47	1186	2060	3246	36.54	36180	46005	-1605	0.47	0.95

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.10

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean Zone

Centre: Imphal **Zone** :North Eastern Hill **Character:** Yield and economics
Design: RBD **Replications:** Three **Variety**: JS 97 52

Treatment	Bran-ches/ plant	Pods/ plant	Seed index	Nodule No./ plant	Nodule dry weight/ plant	Plant height (cm) at 60 DAS	Plant dry matter (g/plant) at DAS			CGR (g/m^2/day)		RGR (g/g/day)	
							30	45	60	45-30	60-45	45-30	60-45
T1=RDF with RPM without PSAP	5.5	64	8.8	47	0.49	66	1.61	6.93	16.7	7.81	14.32	0.097	0.059
T2=T1 + PSAP@ 6 g/l	5.5	78	8.7	46	0.50	65	1.73	6.39	16.9	6.83	15.35	0.088	0.065
T3=T1 + PSAP@ 9g/l	5.7	84	8.7	47	0.51	66	1.78	7.00	17.9	7.66	16.00	0.091	0.063
T4=75% P&K +75% RPM without PSAP	4.6	69	8.1	42	0.46	70	1.63	5.40	15.7	5.53	15.09	0.079	0.072
T5=T4 + PSAP@ 6 g/l	5.3	73	7.9	51	0.57	58	1.54	5.56	16.1	5.90	15.51	0.085	0.071
T6=T4 + PSAP@ 9g/l	5.2	75	8.3	47	0.51	65	1.71	5.67	16.2	5.81	15.45	0.080	0.070
T7= 50% P&K +50% RPM without PSAP	5.2	56	7.8	41	0.43	70	1.46	4.78	14.5	4.86	14.21	0.079	0.074
T8=T7 + PSAP@ 6 g/l	5.1	61	8.5	34	0.37	68	1.60	5.05	15.0	5.07	14.52	0.077	0.072
T9=T7 + PSAP@ 9g/l	4.9	67	8.0	48	0.43	66	1.42	5.24	15.4	5.60	14.91	0.087	0.072
T10=100%N +00% P&K +00% RPM without PSAP	4.4	53	8.1	44	0.49	55	1.55	4.70	14.7	4.61	14.66	0.074	0.076
T11=T10 + PSAP@ 6 g/l	5.4	55	8.2	45	0.50	60	1.69	5.01	15.2	4.88	14.89	0.073	0.074
T12=T10 + PSAP@ 9g/l	5.2	57	8.7	46	0.45	60	1.44	4.93	15.3	5.12	15.20	0.083	0.076
SEm	0.23	3.97	0.39	3.32	0.039	3.12	0.09	0.36	0.65	0.51	0.87	0.005	0.004
CD (P=0.05)	0.69	11.6	NS	NS	NS	9.15	NS	1.05	1.92	1.50	NS	NS	NS

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.11

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: North Eastern Hill **Centre:** Imphal **Character:** Yield and economics
Design: RBD **Replications:** Three **Variety**: JS 97 52

Treatment	Seed yield/ Plant (g)	Seed Yield (kg/ha)	Straw yield (kg/ha)	Biological yield (kg/ha)	HI (%)	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	B:C ratio	IBCR
T1=RDF with RPM without PSAP	9.0	1311	3739	5050	26.2	42294	78667	36373	1.86	-
T2=T1 + PSAP@ 6 g/l	9.7	1600	3342	4942	32.6	56553	96000	39447	1.70	0.22
T3=T1 + PSAP@ 9g/l	10.0	1678	2818	4496	37.3	63561	100667	37105	1.58	0.03
T4=75% P&K +75% RPM without PSAP	9.0	1086	3262	4348	25.0	39361	65180	25819	1.66	3.60
T5=T4 + PSAP@ 6 g/l	9.7	1289	3228	4517	28.6	53620	77333	23713	1.44	- 1.12
T6=T4 + PSAP@ 9g/l	9.3	1394	3102	4496	31.3	60628	83667	23038	1.38	- 0.73
T7= 50% P&K +50% RPM without PSAP	9.0	1003	3488	4491	22.3	36868	60167	23299	1.63	2.41
T8=T7 + PSAP@ 6 g/l	9.7	1147	3569	4716	24.4	51127	68833	17706	1.35	- 2.11
T9=T7 + PSAP@ 9g/l	9.0	1292	3541	4833	27.0	58135	77500	19365	1.33	- 1.07
T10= 100%N +00% P&K +00% RPM without PSAP	8.3	908	3518	4426	20.6	32322	54500	22178	1.69	1.42
T11=T10 + PSAP@ 6 g/l	9.7	1067	3419	4486	23.8	53589	64000	10411	1.19	- 2.30
T12=T10 + PSAP@ 9g/l	9.3	1106	3439	4545	24.4	61003	66367	5364	1.09	- 1.66
SEm	0.736	57.70	207.97	186.54	1.83	-	3462	3462	0.071	-
CD (P=0.05)	NS	169.22	NS	NS	5.36	-	10153	10153	0.208	-

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.12

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Central **Centre:**, Amravati **Character:** Yield and economics
Design: RBD **Replication**: Three **Variety**: RVS 24

Treatment	Bran-ches/ plant	Pods/ plant	Seed index	Nodule No./ plant	Nodule dry weight/ plant	Plant height (cm)	Plant dry matter (g/plant) at DAS				CGR (g/m^2/day)			RGR (g/g/day)		
							30	45	60	At Harv	45-30	60-45	75-60	45-30	60-45	75-60
T1. RDF with RPM without PSAP	2.13	46.93	10.31	42.00	83.96	65.60	3.64	5.29	9.58	17.37	4.94	12.89	23.37	0.030	0.047	0.048
T1 + PSAP@ 6 g/l	2.00	44.47	10.72	46.67	91.98	67.80	3.59	5.38	10.21	17.39	5.35	14.51	21.53	0.032	0.051	0.042
T1 + PSAP@ 9g/l	2.00	45.53	11.07	38.67	67.13	53.67	3.42	5.20	9.20	17.02	5.33	12.01	23.45	0.033	0.046	0.049
T2.75% P&K +75% RPM without PSAP	1.80	39.27	10.30	42.00	76.55	63.60	3.29	5.01	9.05	15.05	5.17	12.13	17.99	0.034	0.047	0.041
T2 + PSAP@ 6 g/l	1.60	44.80	9.89	37.67	80.21	59.93	3.26	4.90	8.94	15.09	4.91	12.14	18.44	0.032	0.049	0.042
T2 + PSAP@ 9g/l	1.93	32.67	10.05	43.00	94.82	50.00	3.36	4.56	7.27	12.18	3.62	8.13	14.71	0.025	0.037	0.040
T3. 50% P&K +50% RPM without PSAP	1.87	31.93	10.97	36.33	75.45	41.80	3.10	4.70	8.77	13.95	4.80	12.21	15.55	0.033	0.050	0.037
T3 + PSAP@ 6 g/l	1.60	31.60	10.57	44.00	98.22	50.73	3.00	4.78	8.33	14.05	5.35	10.63	17.18	0.037	0.044	0.042
T3 + PSAP@ 9g/l	1.73	29.87	9.84	40.00	97.70	38.40	3.19	4.63	8.42	16.59	4.32	11.37	24.52	0.030	0.048	0.054
T4. 100%N +00% P&K +50% RPM without PSAP	1.67	20.47	9.32	40.67	84.20	46.80	2.72	3.95	7.91	11.55	3.70	11.88	10.91	0.030	0.055	0.030
T4 + PSAP@ 6 g/l	1.47	28.47	9.62	37.67	66.49	46.20	3.04	4.37	7.81	11.01	3.97	10.34	9.61	0.029	0.046	0.027
T4 + PSAP@ 9g/l	1.67	25.67	9.77	38.00	89.00	44.07	3.08	4.42	8.32	11.31	4.03	11.67	8.98	0.029	0.051	0.025
SEm	0.12	2.31	0.38	3.85	14.03	2.83	0.12	0.26	0.37	0.68	0.95	1.13	2.10	--	--	--
CD (P=0.05)	0.35	6.79	NS	NS	NS	8.30	0.36	0.77	1.09	1.98	NS	NS	6.16	--	--	--

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.13

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Central **Centre:** Amravati **Character:** Yield and economics
Design: RBD **Replication**: Three **Variety**: RVS 24

Treatment	Seed yield/ plant	Yield (kg/ha)	Straw yield (kg/ha)	Biological yield (kg/ha)	HI (%)	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	B:C ratio
T1. RDF with RPM without PSAP	4.92	2185	2768	4953	44.14	32061	79541	47480	2.48
T1 + PSAP@ 6 g/l	5.12	2276	2949	5226	43.55	47729	82954	35225	1.74
T1 + PSAP@ 9g/l	4.65	2065	2688	4753	43.42	54414	75268	20854	1.38
T2.75% P&K +75% RPM without PSAP	3.93	1745	2151	3897	44.78	29463	63442	33979	2.15
T2 + PSAP@ 6 g/l	4.16	1849	2299	4148	44.58	45155	67231	22076	1.49
T2 + PSAP@ 9g/l	3.65	1622	2002	3624	44.79	51811	58960	7149	1.14
T3. 50% P&K +50% RPM without PSAP	3.43	1525	1900	3425	44.52	27282	55452	28170	2.03
T3 + PSAP@ 6 g/l	3.41	1514	1816	3330	45.46	42756	54954	12197	1.29
T3 + PSAP@ 9g/l	3.20	1424	1734	3158	45.13	49673	51742	2069	1.04
T4. 100%N +00% P&K +50% RPM without PSAP	3.10	1378	1710	3089	44.55	23901	50110	26208	2.09
T4 + PSAP@ 6 g/l	3.34	1486	1814	3300	45.05	46689	53991	7303	1.16
T4 + PSAP@ 9g/l	3.41	1514	1850	3364	44.92	53829	55004	1175	1.02
SEm	0.22	99.94	121.32	218.66	--	189.89	--	--	--
CD (P=0.05)	0.66	293.10	355.77	641.24	--	--	--	--	--

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.14

AGRON. 6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Central **Centre:** Kota **Character:** Yield and economics
Design: RBD **Replication**: Three **Variety**: RVS 24

Treatment	Bran-ches/ plant	Pods/ plant	Seed index	Nodule No./ plant	Nodule dry weight/ plant	Heig-ht (cm)	Plant dry matter (g/plant) at DAS			CGR (g/m^2/day)		RGR (g/g/day)	
							30	45	60	45-30	60-45	45-30	60-45
T1. RDF with RPM without PSAP	4.13	40.67	8.80	45.3	76.92	53.20	2.00	6.89	13.59	10.85	14.87	0.0358	0.0197
T1 + PSAP@ 6 g/l	4.23	41.67	9.07	45.0	77.42	54.00	2.10	7.19	14.25	11.31	15.67	0.0359	0.0198
T1 + PSAP@ 9g/l	4.37	43.00	9.20	46.7	78.42	54.67	2.13	7.48	14.83	11.87	16.31	0.0363	0.0199
T2.75% P&K +75% RPM without PSAP	3.43	33.67	8.20	44.3	74.00	52.40	1.80	6.25	12.19	9.87	13.20	0.0360	0.0194
T2 + PSAP@ 6 g/l	3.47	34.00	8.40	43.7	75.08	52.93	1.97	6.87	13.47	10.89	14.66	0.0363	0.0195
T2 + PSAP@ 9g/l	3.60	35.33	8.60	44.3	76.67	53.93	2.01	7.12	14.06	11.33	15.41	0.0365	0.0197
T3. 50% P&K +50% RPM without PSAP	3.23	31.67	8.47	42.0	73.50	52.27	1.81	6.17	12.01	9.69	12.95	0.0356	0.0193
T3 + PSAP@ 6 g/l	3.30	32.33	8.60	41.7	73.83	53.07	1.94	6.67	13.09	10.50	14.25	0.0358	0.0195
T3 + PSAP@ 9g/l	3.40	33.33	8.47	43.7	76.42	53.93	2.00	6.91	14.04	10.90	15.82	0.0359	0.0205
T4. 100%N +00% P&K +50% RPM without PSAP	4.17	41.00	8.93	45.3	77.58	53.27	2.03	7.18	13.96	11.43	15.05	0.0367	0.0193
T4 + PSAP@ 6 g/l	4.27	42.00	9.20	44.0	78.33	54.27	2.10	7.55	14.93	12.09	16.40	0.0370	0.0198
T4 + PSAP@ 9g/l	4.40	43.33	9.27	46.3	79.42	54.93	2.13	7.70	15.33	12.37	16.95	0.0372	0.0200
SEm	0.22	2.17	0.32	0.92	1.00	0.19	0.12	0.30	0.42	0.52	0.72	0.0012	0.0009
CD (P=0.05)	0.64	6.37	0.94	2.71	2.94	0.55	NS	0.87	1.23	1.52	2.12	NS	NS

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.15

AGRON. 6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Central **Centre:** Kota **Character:** Yield and economics
Design: RBD **Replication**: Three **Variety**: RVS 24

Treatment	Seed yield/ plant	Yield (kg/ha)	Straw yield (kg/ha)	Biological yield (kg/ha)	HI (%)	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	B:C ratio
T1.RDF with RPM without PSAP	5.22	1207	1898	3105	38.86	22736	46819	24082	1.06
T1 + PSAP@ 6 g/l	5.34	1247	1958	3204	38.90	30611	48371	17759	0.58
T1 + PSAP@ 9g/l	5.50	1300	2037	3337	38.95	34549	50440	15891	0.46
T2.75% P&K +75% RPM without PSAP	4.55	983	1565	2549	38.58	22111	38153	16042	0.73
T2 + PSAP@ 6 g/l	4.80	1067	1689	2756	38.69	29986	41387	11401	0.38
T2 + PSAP@ 9g/l	4.90	1100	1739	2839	38.73	33923	42680	8757	0.26
T3.50% P&K +50% RPM without PSAP	4.45	950	1516	2466	38.53	21485	36860	15375	0.72
T3 + PSAP@ 6 g/l	4.70	1033	1640	2673	38.65	29360	40093	10733	0.37
T3 + PSAP@ 9g/l	4.77	1050	1665	2715	38.64	33298	40740	7442	0.22
T4. 100%N +00% P&K +50% RPM without PSAP	5.20	1217	1913	3130	38.88	20234	47207	26972	1.33
T4 + PSAP@ 6 g/l	5.37	1267	1987	3254	38.92	32047	49147	17100	0.53
T4 + PSAP@ 9g/l	5.43	1275	2000	3275	38.93	35984	49470	13486	0.37
SEm	0.26	64.27	95.76	160.03	0.08		2493.63	2493.63	0.08
CD (P=0.05)	0.76	188.48	280.83	469.31	0.23		7312.92	7312.92	0.24

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.16

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Central **Centre:** Sehore **Character:** Yield and economics
Design: RBD **Replication**: Three **Variety**: RVS 24

Treatment	Bran-ches/ plant	Pods/ plant	Seed inde x	Nodule No./ plant	Nodule dry weight/ plant	Plant height (cm)	Plant dry matter (g/plant) at DAS			CGR (g/m^2/day)		RGR (g/g/day)	
							30	45	60	45-30	60-45	45-30	60-45
T1. RDF with RPM without PSAP	4.66	28.00	9.17	34.67	102.33	66.55	2.33	8.10	13.83	17.10	16.99	0.083	0.036
T1 + PSAP@ 6 g/l	4.33	30.67	9.33	37.11	115.00	69.33	2.83	8.30	14.00	16.21	16.89	0.072	0.035
T1 + PSAP@ 9g/l	4.78	32.33	9.50	36.22	100.00	70.33	2.78	8.10	14.67	15.77	19.46	0.071	0.039
T2.75% P&K +75% RPM without PSAP	4.66	30.33	9.33	33.77	100.00	70.33	2.88	7.47	12.00	13.58	13.43	0.064	0.032
T2 + PSAP@ 6 g/l	5.11	29.33	9.50	36.00	111.67	70.22	2.77	7.37	11.83	13.61	13.23	0.065	0.032
T2 + PSAP@ 9g/l	4.00	29.33	9.67	36.33	115.00	74.00	2.66	7.87	12.00	15.42	12.25	0.072	0.028
T3. 50% P&K +50% RPM without PSAP	4.55	30.00	9.17	35.67	110.00	69.55	2.71	6.80	11.27	12.13	13.23	0.062	0.033
T3 + PSAP@ 6 g/l	5.22	31.33	9.33	36.55	113.33	73.78	2.94	7.03	11.43	12.12	13.04	0.06	0.032
T3 + PSAP@ 9g/l	4.89	29.33	9.50	33.22	101.00	70.44	2.55	7.43	11.47	14.46	11.95	0.071	0.029
T4. 100%N +00% P&K +50% RPM without PSAP	4.11	29.67	9.33	35.11	107.33	70.89	2.50	6.80	10.83	12.75	11.95	0.066	0.031
T4 + PSAP@ 6 g/l	4.78	28.00	9.33	34.55	106.67	71.44	2.81	7.30	11.17	13.30	11.46	0.064	0.028
T4 + PSAP@ 9g/l	4.33	30.67	9.50	36.33	106.67	75.67	2.93	7.47	12.17	13.43	13.93	0.062	0.032
SEm	0.27	1.82	0.18	0.92	4.05	2.08	0.12	0.28	0.50	0.93	1.87	0.004	0.004
CD (P=0.05)	NS	NS	NS	NS	NS	NS	NS	0.83	1.47	2.73	NS	0.012	NS

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.17

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Central **Centre:** Sehore **Character:** Yield and economics
Design: RBD **Replication**: Three **Variety**: RVS 24

Treatment	Seed yield/ plant	Yield (kg/ha)	Straw yield (kg/ha)	Biological yield (kg/ha)	HI (%)	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	B:C ratio	IBCR
T1. RDF with RPM without PSAP	4.72	1749	2654	4403	39.76	19303	66461	47158	4.72	-
T1 + PSAP@ 6 g/l	4.78	1770	2654	4424	40.04	24553	67243	42690	4.78	0.149
T1 + PSAP@ 9g/l	4.83	1790	2695	4486	39.94	27178	68025	40847	4.83	0.199
T2.75% P&K +75% RPM without PSAP	4.44	1646	2613	4259	38.64	18352	62551	44199	4.44	-
T2 + PSAP@ 6 g/l	4.50	1667	2654	4321	38.59	23602	63333	39731	4.50	0.182
T2 + PSAP@ 9g/l	4.50	1667	2634	4300	38.75	26227	63333	37106	4.50	0.113
T3. 50% P&K +50% RPM without PSAP	4.22	1564	2531	4095	38.19	17404	59424	42020	4.22	-
T3 + PSAP@ 6 g/l	4.28	1584	2510	4095	38.78	22654	60206	37552	4.28	0.233
T3 + PSAP@ 9g/l	4.39	1626	2531	4156	39.11	25279	61770	36491	4.39	0.393
T4. 100%N +00% P&K +50% RPM without PSAP	4.17	1543	2490	4033	38.26	16004	58642	42638	4.17	-
T4 + PSAP@ 6 g/l	4.28	1584	2469	4053	39.13	23879	60206	36327	4.28	0.342
T4 + PSAP@ 9g/l	4.33	1605	2469	4074	39.41	26504	60988	34484	4.33	0.326
SEm	0.12	43	87	78	1.22	-	1648	1648	0.12	-
CD (P=0.05)	NS	127	NS	228	NS	-	4835	4835	0.34	-

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.18

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Central **Character:** Yield and economics **Design:** RBD **Replications:** Three
Variety: RVS 24

Treatment	Bran-ches/ plant	Pods/ plant	Seed index	Nodule No./ plant	Nodule dry weight/ plant	Plant height (cm) at 60 DAS	Plant dry matter (g/plant) at DAS			CGR (g/m^2/day)		RGR (g/g/day)	
							30	45	60	45-30	60-45	45-30	60-45
T1=RDF with RPM without PSAP	3.64	38.53	9.43	40.66	87.74	61.78	2.66	6.76	12.33	10.96	14.92	0.050	0.034
T2=T1 + PSAP@ 6 g/l	3.52	38.94	9.71	42.93	94.80	63.71	2.84	6.96	12.82	10.96	15.69	0.047	0.035
T3=T1 + PSAP@ 9g/l	3.72	40.29	9.92	40.53	81.85	59.56	2.78	6.93	12.90	10.99	15.93	0.047	0.035
T4=75% P&K +75% RPMwithout PSAP	3.30	34.42	9.28	40.02	83.52	62.11	2.66	6.24	11.08	9.54	12.92	0.045	0.033
T5=T4 + PSAP@ 6 g/l	3.39	36.04	9.26	39.12	88.99	61.03	2.67	6.38	11.41	9.80	13.34	0.044	0.034
T6=T4 + PSAP@ 9g/l	3.18	32.44	9.44	41.21	95.50	59.31	2.68	6.52	11.11	10.12	11.93	0.045	0.028
T7= 50% P&K +50% RPM without PSAP	3.22	31.20	9.54	38.00	86.32	54.54	2.54	5.89	10.68	8.87	12.80	0.044	0.034
T8=T7 + PSAP@ 6 g/l	3.37	31.75	9.50	40.75	95.13	59.19	2.63	6.16	10.95	9.32	12.64	0.044	0.032
T9=T7 + PSAP@ 9g/l	3.34	30.84	9.27	38.97	91.71	54.26	2.58	6.32	11.31	9.89	13.05	0.046	0.033
T10=100%N +00% P&K +00% RPM without PSAP	3.32	30.38	9.19	40.36	89.70	56.99	2.42	5.98	10.90	9.29	12.96	0.044	0.035
T11=T10 + PSAP@ 6 g/l	3.51	32.82	9.38	38.74	83.83	57.30	2.65	6.41	11.30	9.79	12.73	0.043	0.031
T12=T10 + PSAP@ 9g/l	3.47	33.22	9.51	40.21	91.70	58.22	2.71	6.53	11.94	9.94	14.18	0.043	0.034

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.19

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Central **Character:** Yield and economics **Design:** RBD **Replications:** Three
Variety: RVS 24

Treatment	Seed yield/ Plant (g)	Seed Yield (kg/ha)	Straw yield (kg/ha)	Biological yield (kg/ha)	HI (%)	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	B:C ratio
T1=RDF with RPM without PSAP	4.95	1714	2440	4154	40.92	24700	64274	39573	2.75
T2=T1 + PSAP@ 6 g/l	5.08	1764	2520	4285	40.83	34298	66189	31891	2.37
T3=T1 + PSAP@ 9g/l	4.99	1718	2473	4192	40.77	38714	64578	25864	2.22
T4=75% P&K +75% RPM without PSAP	4.31	1458	2110	3568	40.67	23309	54715	31407	2.44
T5=T4 + PSAP@ 6 g/l	4.49	1528	2214	3742	40.62	32914	57317	24403	2.12
T6=T4 + PSAP@ 9g/l	4.35	1463	2125	3588	40.76	37320	54991	17671	1.97
T7= 50% P&K +50% RPM without PSAP	4.03	1346	1982	3329	40.41	22057	50579	28522	2.32
T8=T7 + PSAP@ 6 g/l	4.13	1377	1989	3366	40.96	31590	51751	20161	1.98
T9=T7 + PSAP@ 9g/l	4.12	1367	1977	3343	40.96	36083	51417	15334	1.88
T10= 100%N +00% P&K +00% RPM without PSAP	4.16	1379	2038	3417	40.56	20046	51986	31939	2.53
T11=T10 + PSAP@ 6 g/l	4.33	1446	2090	3536	41.03	34205	54448	20243	1.99
T12=T10 + PSAP@ 9g/l	4.39	1465	2106	3571	41.09	38772	55154	16382	1.91

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.20

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: South **Centre:** Adilabad **Character:** Yield and economics
Variety: MACS 1188 **Design:** RBD **Replications:** Three

Treatments	Bran-ches/ plant	Pods/ plant	Seed index (g.)	Nodule No./ plant	Nodule dry weight/ Plant (mg.)	Plant height (cm)	Plant dry matter (g/plant) at DAS			CGR (g/m^2/day)		RGR (g/g/day)	
							30	45	60	45-30	60-45	45-30	60-45
T1. RDF with RPM without PSAP	4.6	32.7	13.5	32.8	37.2	58.4	3.19	7.90	11.56	10.47	8.14	0.062	0.025
T1 + PSAP@ 6 g/l	5.1	37.2	13.1	34.7	40.0	61.9	3.06	6.99	12.45	8.74	12.14	0.056	0.039
T1 + PSAP@ 9g/l	6.0	44.9	14.7	36.3	39.7	65.9	2.58	8.39	14.76	12.91	14.16	0.079	0.038
T2.75% P&K +75% RPM without PSAP	3.9	28.1	12.9	32.3	35.2	47.9	2.87	9.43	15.03	14.56	12.45	0.079	0.031
T2 + PSAP@ 6 g/l	5.3	32.8	13.5	36.2	32.7	54.5	3.03	7.16	12.99	9.18	12.94	0.058	0.039
T2 + PSAP@ 9g/l	5.6	38.0	14.2	38.0	34.7	58.0	3.07	9.31	14.62	13.85	11.80	0.075	0.032
T3. 50% P&K +50% RPM without PSAP	3.4	22.2	13.3	32.6	34.4	38.9	3.48	9.51	14.99	13.39	12.17	0.067	0.030
T3 + PSAP@ 6 g/l	4.1	30.5	14.1	33.8	32.5	43.8	3.31	7.90	14.66	10.21	15.01	0.057	0.042
T3 + PSAP@ 9g/l	4.7	34.3	14.7	36.3	33.8	51.1	3.34	9.51	16.56	13.71	15.66	0.073	0.037
T4. 100%N +00% P&K +50% RPM without PSAP	2.9	20.6	12.7	26.1	24.3	31.1	3.61	10.34	15.69	14.96	11.89	0.070	0.028
T4 + PSAP@ 6 g/l	3.4	37.0	13.5	27.3	34.2	35.1	3.04	8.37	15.02	11.85	14.76	0.069	0.039
T4 + PSAP@ 9g/l	4.6	27.6	13.4	30.0	32.9	44.7	3.92	9.65	14.54	12.7	10.87	0.061	0.028
SEem+	0.5	2.4	0.7	2.3	2.7	3.6	0.39	0.79	0.81	1.91	2.60	0.009	0.007
CD (P=0.05)	1.5	7.3	NS	6.7	NS	10.7	NS	NS	2.39	NS	NS	NS	NS

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.21

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Southern **Centre:** Adilabad **Character:** Yield and economics
Variety: MACS 1188 **Design:** RBD **Replications:** Three

Treatment	Seed yield (g/plant)	Seed Yield (kg/ha)	Straw yield (kg/ha)	Biological yield (kg/ha)	HI (%)	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	B:C ratio	IBCR
T1. RDF with RPM without PSAP	13.8	1950	4483	6433	30.4	43489	75675	32186	1.74	0.14
T1 + PSAP@ 6 g/l	14.7	2319	4985	7304	31.8	47426	89993	42566	1.90	1.21
T1 + PSAP@ 9g/l	16.0	2986	6315	9301	32.2	49395	115852	66458	2.35	1.16
T2.75% P&K +75% RPM without PSAP	12.8	1765	4314	6079	29.1	42083	68463	26380	1.63	0.09
T2 + PSAP@ 6 g/l	13.9	1964	4498	6462	30.5	46020	76200	30179	1.66	1.26
T2 + PSAP@ 9g/l	14.8	2236	4529	6766	33.1	47989	86768	38779	1.82	1.26
T3. 50% P&K +50% RPM without PSAP	11.3	1467	3719	5186	28.4	40441	56917	16476	1.41	0.11
T3 + PSAP@ 6 g/l	12.6	1739	3914	5652	30.7	44379	67458	23080	1.53	1.38
T3 + PSAP@ 9g/l	13.7	1968	4357	6324	31.1	46347	76342	29995	1.66	1.35
T4. 100%N +00% P&K +50% RPM without PSAP	10.8	1111	2966	4078	27.5	39483	43114	3631	1.09	0.00
T4 + PSAP@ 6 g/l	12.2	1517	3856	5373	28.3	45389	58865	13475	1.30	0.80
T4 + PSAP@ 9g/l	13.2	1632	4093	5725	28.6	47350	63328	15978	1.34	0.51
S. em±	0.6	110.4	344.4	430.1	1.2	851.0	4287.0	4596.8	0.10	0.28
CD (P=0.05)	1.9	326.0	1016.8	1269.5	NS	2512.1	12656.2	13569.1	0.31	NS

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.22

AGRON.6/20 : Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean Zone

Centre: Dharwad **Zone**: Southern **Character:** Yield and economics

Variety: MACS 1188 **Design:** RBD **Replications:** Three

Treatment	Bran-ches/ plant	Pods/ plant	Seed index	Nodule No./ plant	Nodule dry weight/ plant	Plant height (cm)	Plant dry matter (g/plant) at DAS			CGR (g/m^2/day)		RGR (g/m^2/day)	
							30	45	60	45-30	60-45	45-30	60-45
T1. RDF with RPM without PSAP	5.3	87.9	14.4	44.7	100	68.7	12.0	34.0	59.4	0.044	0.048	0.089	0.094
T1 + PSAP@ 6 g/l	5.7	89.3	14.9	50.7	105	70.5	13.2	38.5	62.8	0.051	0.051	0.094	0.095
T1 + PSAP@ 9g/l	6.3	90.7	15.2	52.0	107	72.4	13.3	44.3	66.4	0.062	0.063	0.099	0.095
T2.75% P&K +75% RPM without PSAP	4.9	84.5	14.0	35.3	93	68.6	11.6	31.5	57.8	0.040	0.044	0.087	0.088
T2 + PSAP@ 6 g/l	5.4	87.3	14.6	47.0	102	69.4	12.1	37.1	59.8	0.050	0.049	0.093	0.092
T2 + PSAP@ 9g/l	5.6	88.2	14.8	49.0	104	69.6	12.6	37.7	61.5	0.050	0.051	0.093	0.093
T3. 50% P&K +50% RPM without PSAP	4.6	83.2	13.4	36.0	88	67.3	10.2	31.1	56.1	0.042	0.050	0.088	0.093
T3 + PSAP@ 6 g/l	4.7	83.7	13.7	36.7	90	68.5	11.1	31.5	57.1	0.041	0.045	0.087	0.093
T3 + PSAP@ 9g/l	5.2	86.2	14.2	39.7	95	68.9	11.8	33.4	58.7	0.043	0.051	0.089	0.093
T4. 100%N +00% P&K +50% RPM without PSAP	4.4	73.3	11.7	31.3	81	58.5	9.9	28.5	53.1	0.037	0.049	0.084	0.092
T4 + PSAP@ 6 g/l	4.5	80.3	12.9	34.0	84	66.3	10.4	29.6	54.4	0.038	0.050	0.086	0.093
T4 + PSAP@ 9g/l	4.6	83.0	13.2	35.0	86	67.5	10.8	30.6	55.3	0.049	0.055	0.086	0.092
SEm	0.3	3.5	0.6	1.8	4	3.1	0.7	1.8	2.4	0.004	0.006	0.002	0.003
CD (P=0.05)	0.8	10.4	1.9	5.2	11	9.0	2.0	5.3	7.0	0.011	0.016	0.006	0.010

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.23

AGRON.6/20: Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Southern **Centre:** Dharwad **Character:** Yield and economics

Variety: MACS 1188 **Design:** RBD **Replications:** Three

Treatment	Seed yield/ plant	Yield (kg/ha)	Straw yield (kg/ha)	Biological yield (kg/ha)	HI (%)	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	B:C ratio	IBCR
T1. RDF with RPM without PSAP	33.17	2500	2387	4887	0.52	38354	87500	50785	2.38	2.47
T1 + PSAP@ 6 g/l	33.77	2833	2456	5290	0.54	39229	99167	59302	2.49	1.48
T1 + PSAP@ 9g/l	34.05	3192	2496	5688	0.56	40542	111708	67905	1.86	2.40
T2.75% P&K +75% RPM without PSAP	31.97	2400	2240	4640	0.54	36715	84000	48785	2.39	1.81
T2 + PSAP@ 6 g/l	33.25	2600	2451	5051	0.51	37590	91000	52135	2.34	1.76
T2 + PSAP@ 9g/l	33.37	2767	2452	5218	0.53	38903	96833	54530	2.29	1.81
T3. 50% P&K +50% RPM without PSAP	30.71	2267	2232	4498	0.50	34554	79333	45618	2.35	1.96
T3 + PSAP@ 6 g/l	31.44	2300	2234	4534	0.51	35429	80500	43635	2.18	2.47
T3 + PSAP@ 9g/l	32.23	2467	2371	4838	0.51	36742	86333	47530	2.22	2.33
T4. 100%N +00% P&K +50% RPM without PSAP	26.67	1800	1972	3772	0.48	33821	63000	32285	2.05	2.61
T4 + PSAP@ 6 g/l	30.51	2233	2152	4385	0.51	34696	78167	40964	2.10	2.80
T4 + PSAP@ 9g/l	31.35	2263	2170	4433	0.51	36009	79217	40902	2.07	3.04
SEm	1.24	126	305	389	0.38		4399	4399	0.26	0.47
CD (P=0.05)	3.62	369	895	1141	1.13		12902	12902	0.77	1.38

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.24

AGRON. 6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Centre: Pune **Zone:** Southern **Character:** Yield and economics
Variety: MACS 1188 **Design:** RBD **Replications:** Three

Treatment	Branches/ plant	Pods/ plant	Seed index	Nodule No./ plant	Nodule dry weight/ Plant (mg)	Plant height (cm)	Plant dry matter (g/plant) at DAS			CGR ($g/m^2/day$)		RGR (g/g/day)	
							30	45	60	45-30	60-45	45-30	60-45
T1. RDF with RPM without PSAP	3.07	48.00	14.27	32.07	0.140	83.33	3.23	9.48	14.27	0.42	0.32	0.0313	0.0117
T1 + PSAP@ 6 g/l	3.20	51.93	14.53	28.00	0.110	81.60	3.07	9.37	15.15	0.42	0.39	0.0323	0.0140
T1 + PSAP@ 9g/l	2.80	49.33	14.40	28.93	0.170	81.93	3.23	8.95	13.28	0.38	0.29	0.0303	0.0110
T2.75% P&K +75% RPM without PSAP	2.60	46.33	14.80	30.47	0.160	79.60	2.93	9.70	14.51	0.45	0.32	0.0350	0.0117
T2 + PSAP@ 6 g/l	2.40	46.00	14.33	34.27	0.170	80.67	3.24	9.24	14.27	0.40	0.34	0.0307	0.0130
T2 + PSAP@ 9g/l	2.60	44.27	14.83	29.87	0.120	81.20	3.59	9.83	14.55	0.42	0.31	0.0293	0.0110
T3. 50% P&K +50% RPM without PSAP	2.73	43.20	14.43	27.67	0.140	80.47	3.17	9.99	15.17	0.45	0.35	0.0333	0.0120
T3 + PSAP@ 6 g/l	2.60	44.47	14.27	27.67	0.140	79.13	2.86	10.52	14.75	0.51	0.28	0.0380	0.0100
T3 + PSAP@ 9g/l	2.87	45.27	14.57	28.67	0.170	79.20	3.39	9.15	15.17	0.38	0.40	0.0290	0.0147
T4. 100%N +00% P&K +50% RPM without PSAP	2.60	43.20	14.73	33.93	0.140	75.27	3.47	10.58	14.03	0.47	0.23	0.0320	0.0080
T4 + PSAP@ 6 g/l	2.60	44.87	15.00	26.80	0.120	76.87	3.23	8.90	14.20	0.38	0.35	0.0293	0.0137
T4 + PSAP@ 9g/l	3.00	44.67	14.53	35.00	0.190	77.73	3.44	9.63	15.24	0.41	0.37	0.0300	0.0137
SEm	0.24	1.95	0.34	2.57	0.025	2.26	0.31	0.76	1.04	0.05	0.08	0.003	0.003
CD (P=0.05)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.25

AGRON. 6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Centre: Pune **Zone:** Southern **Character:** Yield and economics
Variety: MACS 1188 **Design:** RBD **Replications:** Three

Treatment	Seed yield/ Plant (g)	Yield (kg/ha)	Straw yield (kg/ha)	Biological yield (kg/ha)	HI (%)	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	B:C ratio	IBCR
T1. RDF with RPM without PSAP	14.62	2495	2356	4851	51.48	37457	87318	49861	2.33	0.88
T1 + PSAP@ 6 g/l	17.29	2531	2405	4937	51.30	54632	88597	33965	1.62	0.35
T1 + PSAP@ 9g/l	11.73	2619	2507	5126	51.13	62507	91665	29158	1.47	0.36
T2.75% P&K +75% RPM without PSAP	12.02	2441	2604	5045	48.76	35215	85434	50219	2.43	0.89
T2 + PSAP@ 6 g/l	13.19	2424	2549	4973	48.91	60265	84846	24882	1.41	0.17
T2 + PSAP@ 9g/l	13.21	2476	2779	5255	47.14	52390	86662	34272	1.65	0.30
T3. 50% P&K +50% RPM without PSAP	13.77	2309	2554	4862	47.49	32972	80802	47830	2.45	0.30
T3 + PSAP@ 6 g/l	14.32	2305	2459	4763	48.44	58022	80664	22642	1.39	0.04
T3 + PSAP@ 9g/l	12.67	2385	2326	4711	50.87	50147	83464	33317	1.67	0.19
T4. 100%N +00% P&K +50% RPM without PSAP	13.85	2270	2856	5126	44.34	28487	79437	50950	2.79	
T4 + PSAP@ 6 g/l	13.25	2275	3010	5285	43.04	53537	79609	26073	1.49	0.01
T4 + PSAP@ 9g/l	14.31	2288	2727	5015	45.63	59837	80094	20257	1.34	0.02
SEm	1.04	80.60	125.60	174.95	1.17	0.0007	2821.09	2821.09	0.07	-
CD (P=0.05)	NS	236.36	368.34	NS	3.44	0.0021	NS	8282.75	0.21	-

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.26

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean Zone

Zone: Southern **Character:** Yield and economics **Variety**: MACS 1188**Design:** RBD
Replications: Three

Treatment	Bran-ches/ plant	Pods/ plant	Seed index	Nodule No./ plant	Nodule dry weight/ plant	Plant height (cm) at 60 DAS	Plant dry matter (g/plant) at DAS			CGR (g/m^2/day)		RGR (g/g/day)	
							30	45	60	45-30	60-45	45-30	60-45
T1=RDF with RPM without PSAP	4.32	56.20	14.06	36.52	45.78	70.14	6.14	17.13	28.41	3.64	2.84	0.061	0.044
T2=T1 + PSAP@ 6 g/l	4.67	59.48	14.18	37.80	48.37	71.33	6.44	18.29	30.13	3.07	4.19	0.061	0.049
T3=T1 + PSAP@ 9g/l	5.03	61.64	14.77	39.08	48.96	73.41	6.37	20.55	31.48	4.45	4.84	0.069	0.048
T4=75% P&K +75% RPM without PSAP	3.80	52.98	13.90	32.69	42.79	65.37	5.80	16.88	29.11	5.02	4.27	0.067	0.044
T5=T4 + PSAP@ 6 g/l	4.37	55.37	14.14	39.16	44.96	68.19	6.12	17.83	29.02	3.21	4.44	0.061	0.048
T6=T4 + PSAP@ 9g/l	4.60	56.82	14.61	38.96	46.27	69.60	6.42	18.95	30.22	4.77	4.05	0.066	0.045
T7= 50% P&K +50% RPM without PSAP	3.58	49.53	13.71	32.09	40.85	62.22	5.62	16.87	28.75	4.63	4.19	0.063	0.045
T8=T7 + PSAP@ 6 g/l	3.80	52.89	14.02	32.72	40.88	63.81	5.76	16.64	28.84	3.59	5.11	0.061	0.048
T9=T7 + PSAP@ 9g/l	4.26	55.26	14.49	34.89	42.99	66.40	6.18	17.35	30.14	4.71	5.37	0.064	0.048
T10=100%N +00% P&K +00% RPM without PSAP	3.30	45.70	13.04	30.44	35.15	54.96	5.66	16.47	27.61	5.16	4.06	0.062	0.043
T11=T10 + PSAP@ 6 g/l	3.50	54.06	13.80	29.37	39.44	59.42	5.56	15.62	27.87	4.09	5.05	0.061	0.049
T12=T10 + PSAP@ 9g/l	4.07	51.76	13.71	33.33	39.70	63.31	6.05	16.63	28.36	4.39	3.77	0.059	0.045

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures

Table 2.6.27

AGRON.6/20. Bio-efficacy evaluation of potassium salt of active phosphorus (PSAP) on soybean

Zone: Southern **Character:** Yield and economics **Variety**: MACS 1188
Design: RBD **Replications:** Three

Treatment	Seed yield/ Plant (g)	Seed Yield (kg/ha)	Straw yield (kg/ha)	Biological yield (kg/ha)	HI (%)	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	B:C ratio	IBCR
T1=RDF with RPM, without PSAP	20.53	2315	3075	5390	27.47	39767	83498	44277	2.15	1.16
T2=T1 + PSAP@ 6 g/l	21.92	2561	3282	5844	27.88	47096	92586	45278	2.00	1.01
T3=T1 + PSAP@ 9g/l	20.59	2932	3773	6705	27.96	50815	106408	54507	1.89	1.31
T4=75% P&K +75% RP. without PSAP	18.93	2202	3053	5255	26.13	38004	79299	41795	2.15	0.93
T5=T4 + PSAP@ 6 g/l	20.11	2329	3166	5495	26.64	47958	84015	35732	1.80	1.06
T6=T4 + PSAP@ 9g/l	20.46	2493	3253	5746	26.92	46427	90088	42527	1.92	1.12
T7= 50% P&K +50% RPM without PSAP	18.59	2014	2835	4849	25.46	35989	72351	36641	2.07	0.79
T8=T7 + PSAP@ 6 g/l	19.45	2115	2869	4983	26.55	45943	76207	29786	1.70	1.30
T9=T7 + PSAP@ 9g/l	19.53	2273	3018	5291	27.49	44412	82046	36947	1.85	1.29
T10= 100%N +00% P&K +00% RPM without PSAP	17.11	1727	2598	4325	24.11	33930	61850	28955	1.98	0.87
T11=T10 + PSAP@ 6 g/l	18.65	2008	3006	5014	23.95	44541	72214	26837	1.63	1.20
T12=T10 + PSAP@ 9g/l	19.62	2061	2997	5058	24.91	47732	74213	25712	1.58	1.19

RDF-Recommended dose of fertilizer, **RPM**- Recommended plant protection measures