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## U.P. Council of Sugarcane Research

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**Sub: Testing Report of PSAP–Potassium salt of Active Phosphorus at two locations.**

In reference to your e-mail letter dated 10.04.2018 regarding testing report of PSAP trial conducted at two locations of our organization during the year 2016-17 and 2017-18. In this connection the testing report of PSAP at two locations i.e. SRI, Shahjahanpur and G.S.S.B.R.I., Seorahi is being enclosed herewith for your perusal.

  
12-11-18

Director Incharge

## Technical Report

Testing report of Potassium Salt of Active Phosphorus (PSAP) on sugarcane at two locations viz. SRI, Shahjahanpur and GSSBRI, Seorahi of U.P. Council of Sugarcane Research, is given below:

### Effect of PSAP on Sugarcane quality and yield

Field experiments during spring season in 2016-17 and 2017-18 were conducted at two locations i.e. SRI, Shahjahanpur and GSSBRI, Seorahi having different soil status of U.P. to study the effect of PSAP in sugarcane crop. At both locations application of PSAP only through foliar sprays (5 sprays at 45, 60, 75, 90 and 105 DAP) gave significantly better results with the all three dose of PSAP viz. 4 kg, 5 kg and 6 kg per acre than control, and when applied initial one dose at 45 DAP through drenching and rest 4 sprays at 60, 75, 90 and 105 DAP. CCS percent in cane juice was found numerically better with PSAP application than control.

Experimental results of two years at Shahjahanpur (Table 1) revealed that application of PSAP @ 5 kg/ acre through 5 foliar sprays at 45, 60, 75, 90 and 105 DAP + 100% recommended dose of P and K through soil increased number of shoots (18.54%), NMC (16.66%) and ultimately cane yield (15.46%) than that of control i.e. 100% recommended dose of P and K through soil.

Results of two year experiments at Seorahi (Table 2) showed that application of PSAP @ 6 kg/ acre through 5 foliar sprays at 45, 60, 75, 90 and 105 DAP + 100% recommended P and K through soil enhanced shoot population (14.47%), NMC (18.54%) and cane yield (35.89%) than control treatment i.e. 100% P and K through soil Since Seorahi soil is calcareous, it seems that in this soil status of active P is being lower due to fixation of P in the form of calcium phosphate that's why higher dose of PSAP performed better.

### Effect of PSAP on Economics

At SRI, Shahjahanpur 5 kg PSAP/ acre and at GSSBRI, Seorahi (Kushinagar) 6 kg PSAP/acre gave maximum net return due to increase in cane yield. At Seorahi location higher dose of PSAP (6 kg/acre) gave more net return due to better response of higher dose of PSAP on cane yield.

### Conclusion and recommendation

Foliar spraying of PSAP @ 5 - 6 kg / acre at 45, 60, 75, 90 and 105 DAP along with 100% recommended dose of P and K applied through soil as basal in sugarcane is helpful in increasing cane yield and net return.

**Table1: Effect of potassium salt of active phosphorus (PSAP) on sugarcane yield and quality at SRI, Shahjahanpur  
Mean data of two years (2016-17 and 2017-18)**

Treatments	Germination (%)	Shoots (000/ha)	NMC (000/ha)	Cane yield (t/ha)	CCS (%)	Net Return (Rs/ha)
T <sub>1</sub> - 100% recommended dose of P and K through soil.	52.24	170.08	111.46	78.76	12.35	138381
T <sub>2</sub> - 100% recommended dose of P and K through soil + 4 kg PSAP/ acre through drenching at 45 DAP and through foliar sprays ( 4 spray at 60, 75, 90 and 105 DAP).	51.35	182.18	121.01	86.75	12.55	132054
T <sub>3</sub> - 100% recommended dose of P and K through soil +4 kg/acre PSAP through foliar sprays (5 sprays at 45, 60, 75, 90 and 105 DAP).	51.09	192.30	141.19	89.24	12.47	140564
T <sub>4</sub> - 100% recommended dose of P and K through soil +5 kg/acre PSAP through drenching at 45 DAP and through foliar sprays (4 sprays at 60, 75, 90 and 105).	50.78	190.10	128.86	90.63	12.49	140112
T <sub>5</sub> - 100% recommended dose of P and K through soil + 5 kg/ acre PSAP only through foliar sprays (5 sprays at 45, 60, 75, 90 and 105 DAP).	48.65	201.62	130.03	100.17	12.67	168895
T <sub>6</sub> - 100% recommended dose of P and K through soil + 6 kg/ acre PSAP through drenching at 45 DAP and through foliar sprays (4 sprays at 60, 75, 90 and 105 DAP).	50.05	189.06	121.35	95.31	12.58	149692
T <sub>7</sub> - 100% recommended dose of P and K through soil + 6 kg/acre PSAP only through foliar sprays (5 sprays at 45, 60, 75, 90 and 105 DAP).	51.25	193.40	125.23	98.03	12.66	157848
SE±	1.87	1.96	1.21	0.53	0.14	-
CD at 5%	NS	4.79	2.96	1.30	NS	-

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**Table2: Effect of potassium salt of active phosphorus (PSAP) on sugarcane yield and quality at GSSBRI, Seorahi**  
**Mean data of two years (2016-17 and 2017-18)**

Treatments	Germination (%)	Shoots (000/ha)	NMC (000/ha)	Cane yield (t/ha)	CCS (%)	Net Return (Rs/ha)
T <sub>1</sub> - 100% recommended dose of P and K through soil.	48.56	133.46	93.47	67.97	12.31	90159.01
T <sub>2</sub> - 100% recommended dose of P and K through soil + 4 kg PSAP/ acre through drenching at 45 DAP and through foliar sprays (4 spray at 60, 75, 90 and 105 DAP).	50.22	143.52	101.38	79.33	12.47	118803.44
T <sub>3</sub> - 100% recommended dose of P and K through soil +4 kg/acre PSAP through foliar sprays (5 sprays at 45, 60, 75, 90 and 105 DAP).	53.28	149.88	103.95	80.94	12.65	123958.66
T <sub>4</sub> - 100% recommended dose of P and K through soil +5 kg/acre PSAP through drenching at 45 DAP and through foliar sprays (4 sprays at 60, 75, 90 and 105).	58.95	151.32	104.54	85.22	12.58	135945.90
T <sub>5</sub> - 100% recommended dose of P and K through soil + 5 kg/ acre PSAP only through foliar sprays (5 sprays at 45, 60, 75, 90 and 105 DAP).	49.45	162.53	109.09	85.18	12.51	135846.42
T <sub>6</sub> - 100% recommended dose of P and K through soil + 6 kg/ acre PSAP through drenching at 45 DAP and through foliar sprays (4 sprays at 60, 75, 90 and 105 DAP).	50.72	152.09	106.69	88.17	12.48	143720.45
T <sub>7</sub> - 100% recommended dose of P and K through soil + 6 kg/acre PSAP only through foliar sprays (5 sprays at 45, 60, 75, 90 and 105 DAP).	47.23	152.78	110.80	92.37	12.81	156638.64
SE±	2.51	2.50	2.39	1.22	0.19	-
CD at 5%	NS	7.79	7.47	3.81	NS	-

*B. Singh*