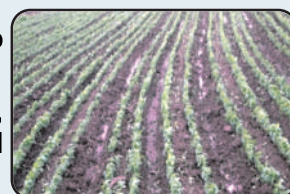


Raised bed planting of soybean & chickpea

Description of Technology adopted

1. Soybean sowing span in Kharif season is very limited because of uncertainty of monsoon and hence, mechanized planting is necessary.
2. Heavy rainfall and hence, water logging may spoil soybean seed during early age and may be reason of root-rot in later stage, if planted on plains.
3. Planting on raised bed accelerate development of nodules due to better aeration in the root zone.
4. Furrow between beds facilitates safe drainage of excess rain water, percolation through field and conserve moisture which may be utilized by crop during dry spell.
5. The technology is more suitable in medium to heavy soils in plain topography.
6. Raised bed planter forms two beds and three furrow in single operation. These furrow have 25 cm top width and 15 to 20 cm depth respectively for medium to heavy soils. Raised beds have top width 50 cm.
7. Planting of chickpea on these raised bed saves irrigation water, prevents losses in adverse conditions of irrigation supply and minimize the possibilities of wilt.



Promising characteristics of technology

Characteristics	Observation on soybean	Observation on Chickpea
Yield	16-22 q/ha	16– 24 q/ha
Moisture conservation(Kharif)/ water saving (Rabi)	25-30 %	20-25%
Plant height	50-65 cm	45-55 cm
No. of branches/plant	6-10	8-13
No. of pods /plant	80-100	80-90
No. of nodules 50DAS	30-35	35-40
Variety used	RVS2001-4, JS 9560	RVG201, JG 16

Source of Data : Department of Agriculture & KVK

Horizontal Spread of Technology in soybean

ACZs & KVKS	No of villages covered	No of farmers	Area in ha	Mean yield (q/ha)	Net return/ ha	B:C Ratio
Malwa Plateau						
Dewas	102	2105	11745	18.6	29630	1.97
Dhar	680	90000	122000	22.0	36400	2.73
Indore	614	2550	17410	15.6	25891	2.04
Shajapur	160	325	6240	19.3	41288	2.80
Ujjain	675	5170	45000	19.20	11125	4.27
Nimar Valley						
Khandwa	340	2580	5010	21.0	34662	3.39
Burhanpur	70	700	2050	19.0	42500	3.33
Total	2641	103430	209455			
Average				19.24	31641	2.93

ACZs & KVKS	No of villages covered	No of farmers	Area in ha	Mean yield (q/ha)	Net return/ ha	B:C Ratio Remark
Malwa Plateau						
Dewas	52	1100	5400	19.7	30750	2.08
Dhar	55	1200	26500	20.0	60500	4.10
Indore	45	2550	7200	17.2	41940	2.56
Shajapur	14	39	383	16.5	43140	3.13
Nimar Valley						
Khandwa	53	1296	2970	18.0	44800	2.87
Burhanpur	100	1000	3000	19.4	63300	3.63
Total	295	5585	42953			
Average				18.28	44226	2.95

Source of Data : Department of Agriculture

ACZs & KVKS	No of villages covered	No of farmers	Area in ha	Mean yield (q/ha)	Net return/ha	B:C Ratio Remark
Central Narmada Valley						
Narsinghpur	117	1039	2612	19.7	53608	3.1
Harda	21	85	40	33.75	97000	3.5
Betul	22	1470	3730	17.37	49200	3.2
Kymore Platue & Satpura Hills						
Jabalpur	138	870	4200	28.12	94300	5.18
Rewa	61	162	216	19.5	46600	2.88
Total	374	3782	11023			
Average				23.69	68140	3.57

Source of Data : Department of Agriculture

Name of schemes supported by central or state govt. in large scale dissemination of under convergence

Govt	Type of support
Central	NFSM scheme- Financial support for input supply
State	State govt. Agril.Engg. Department scheme support to provide raised bed planter at subsidized rates
Custom Hiring Centre	To provide raised bed planter on hire

Economics of water saved in the adopted Technology –Chickpea

KVKs	% moisture saved/ha	Total irrigation cost saved/ha	Total Area	Total revenue saved district (Rs/ha x Total Area)/1,00,000 = Rs. in lakhs
Dewas	25 %	(Rs 300/ha)	5400	16.2
Dhar	25 %	Rs 300/ha	26500	79.5
Indore	25 %	Rs 300/ha	7200	21.6
Shajapur	25 %	Rs 300/ha	383	1.1
Khandwa	25 %	Rs 300/ha	2970	8.9
Burhanpur	25 %	Rs 300/ha	3000	9.0
			Total	136.3

Total irrigation cost saved= irrigation time (12 hr)* Cost of irrigation/hr (Rs 60/hr)=720 + labour @ 500 => 1220 * % saved = 305/ha (rounded to 300/-)

Economics of water saved in the adopted Technology -Chickpea

KVKs	% moisture saved/ha	Total irrigation cost saved/ha {12 hr/Rs 60/hr=720 + labour 400}* moisture saved	Total Area ha	Total revenue saved district (Rs/ha x Total Area)/1,00,000 = Rs. in lakhs
Narsingpur	25 %	Rs 375	2612	9.79500
Harda	30 %	Rs 450	40	0.18000
Jabalpur	30 %	Rs 450	4200	18.90000
Mandla	30 %	Rs 450	225	1.01250
Betul	30 %	Rs 450	3730	16.78500
		Total	10,807	47.64.450

Economics of yield enhancement due to the Technology in Soybean

KVKs	Area under Raised bed Soybean, ha	Average Yield	Yield enhancement %	Total production enhanced q	Total revenue generated in the district (Rs in Crore)
1	2	3	4	$5 = 2 \times 3 \times 4 / 100$	$6 = 5 \times 3050 / 1,00,00,000$
Dewas	11745	18.6	23.9	52211	15.92
Dhar	122000	22.0	20.0	536800	163.72
Indore	17410	15.6	19.0	51603	15.74
Shajapur	6240	19.3	20.0	24086	7.35
Ujjain	45000	19.2	24.0	207360	63.24
Khandwa	5010	21.0	15.0	15782	4.81
Burhanpur	2050	19.0	26.6	10361	3.16
				Total	273.95

Economics of yield enhancement due to the Technology in Chickpea

KVKs	Area under Raised bed Chickpea, ha	Yield q	Yield enhancement %	Total production enhanced q	Total revenue generated in the district (Rate - Rs 4000/q) Rs. in Crore
1	2	3	4	$5=2*3*4/100$	$6 = 5*4000/ 1,00,00,000$
Dewas	5400	19.7	24.6	26169	10.47
Dhar	26500	20.0	22.0	116600	46.64
Indore	7200	17.2	24.5	30341	12.14
Shajapur	383	16.5	21.0	1327	0.53
Khandwa	2970	18.0	18.0	9623	3.85
Burhanpur	3000	19.4	30.0	17460	6.98
				Total	80.61

Economics of yield enhancement due to the Technology in Chickpea

KVKs	Area under Raised bed Chickpea, ha	Yield q	Yield enhancement %	Total production enhanced q	Total revenue generated in the district (Rate - Rs 4000/q) Rs. in Crore
1	2	3	4	$5=2*3*4/100$	$6 = 5*4000/ 1,00,00,000$
Narsinghpur	2612	19.7	21	10806	4.32
Harda	40	33.75	24	324	0.13
Betul	3730	17.37	20	12958	5.18
Jabalpur	4200	28.12	28	33069	13.23
Rewa	216	19.5	18	758	0.30
Total	10798			57915	23.17



Published By :
 Director, ICAR-Agricultural Technology Application Research Institute,
 Zone IX, Jabalpur, (M.P.)
Compilation & Editing :
 Dr. Anupam Mishra, Dr. S. R. K. Singh, Dr. A. A. Raut