

Raised Bed Planting of Soybean & Chickpea

KVKs : Dewas, Dhar, Indore, Shajapur, Ujjain, Khandwa, Harda, Betul, Narsinghpur, Jabalpur & Rewa

Description of technology adopted:

1. **Soybean sowing span** in kharif season is **very limited** because of uncertainty of monsoon hence, mechanized planting is necessary.
2. Heavy rainfall and **water logging may spoil soybean** seed during early age and may be reason of root-rot in later stage, if planted on flat bed.
3. Planting on raised bed **accelerate development of nodules also** 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 furrows 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 (q/ha)	16-22	16– 24
% Moisture conservation(Kharif)/ water saving (Rabi)	25-30	20-25
Plant height (cm)	50-65	45-55
No. of branches/plant	6-10	8-13
No. of pods /plant	80-100	80-90
No. of nodules (50 DAS)	30-35	35-40
Variety used	RVS2001-4, JS 9560	RVG201, JG 16

Source of Data: Department of Agriculture, Govt. of MP & KVK

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

Horizontal spread of adoption technology in soybean

KVKs	No of villages covered	No of farmers	Area in ha	Mean yield (q/ha)	Net return Rs/ ha	B:C ratio
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
Khandwa	340	2580	5010	21.0	34662	3.39
Burhanpur	70	700	2050	19.0	42500	3.33
Total	2641	103430	209457	19.24	31642.29	2.93

Source of Data: Department of Agriculture, Govt. of MP

Economics of yield enhancement due to adopted technology in Soybean

KVKs	Area under Raised bed Soybean, ha	Average Yield (q/ha)	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	209457	19.67	21.79	898203	273.94



Horizontal spread of technology in Chickpea

KVKs	No of villages covered	No of farmers	Area in ha	Mean yield (q/ha)	Net return Rs/ ha	B:C ratio
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
Khandwa	53	1296	2970	18.0	44800	2.87
Burhanpur	100	1000	3000	19.4	63300	3.63
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
Jabalpur	138	870	4200	28.12	94300	5.18
Rewa	61	162	216	19.5	46600	2.88
Total	678	10811	56251	20.84	56830.73	3.29

Source of Data: Department of Agriculture, Govt. of MP

Economics of yield enhancement due to the technology in Chickpea

KVKs	Area under Raised bed (ha)	Yield (q/ha)	Yield enhancement (%)	Total production enhanced quintal	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
Nrasinghpur	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	56251	21.11	23.19	259435	103.77



Economics of water saving in the adopted technology – Chickpea

KVKs	% moisture saved/ha	Total irrigation cost saved (Rs/ha)	Total Area (ha)	Total revenue saved district (Rs/ha x Total Area)/1,00,000 (Rs. in lakhs)
Dewas	25	300	5400	16.2
Dhar	25	300	26500	79.5
Indore	25	300	7200	21.6
Shajapur	25	300	383	1.1
Khandwa	25	300	2970	8.9
Burhanpur	25	300	3000	9.0
Narsingpur	25	375	2612	9.79
Harda	30	450	40	0.18
Jabalpur	30	450	4200	18.90
Mandla	30	450	225	1.01
Betul	30	450	3730	16.78
Total	26.82	361.36	56251	182.96

Total irrigation cost saved= irrigation time (12 hr)* Cost of irrigation/hr (Rs 60/hr)=720 + labour @ 500 => 1220 * % saved = 350/ha



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