Research Article

AN ECONOMIC EVALUATION OF FARM OF KRISHI VIGYAN KENDRA DEWAS OF MADHYA PRADESH

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Abstract- Dewas district comes under the Malwa plateau agro climatic zone of Madhya Pradesh. The major crops of the district are soybean, gram and wheat are grown in 270.25, 130.68 and 114.15 thousand hectares respectively. Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalya, Gwalior, second agriculture university in the state was established by govt. of Madhya Pradesh on dated 19.8.2008. The territorial jurisdiction of RVSKVV is spread over 25 districts of Madhya Pradesh encompassing 19 Krishi Vigyan Kendra. The university is actively engaged in the maintenance of crop varieties and production of nucleus and breeder seeds to full fill the requirement of the state. Seed replacement rate is below 10 percent in case of gram, 10 to 20 percent in soybean. Krishi Vigyan Kendra Dewas has got a farm of 20.489 hectare. Out of this, in 18.00-hectare, breeder seed production taken in kharif as well as in Rabi season. Efficiency of a farm is affected by the various techno-economic, organizational and special problems operation at the farm. On the basis of analysis of input – output and various problems at the farm, techno- economic and organizational suggestions will be given to improve the functional efficiency of the farm business.

Keyword—Economic Evaluation, Farm, Seed production.

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Introduction

About 65 percent of the population is directly dependent on agriculture for their livelihood. The crop yield depends on many factors like weather, soil type and its nutrients status, Management practices and other available inputs. Dewas district comes under the Malwa plateau agro climatic zone of Madhya Pradesh. The major crops of the district are soybean, gram and wheat are grown in 270.25, 130.68 and 114.15 thousand hectares respectively.

Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalya, Gwalior, second agriculture university in the state was established by govt. of Madhya Pradesh on dated 19.8.2008. The territorial jurisdiction of RVSKVV is spread over 25 districts of Madhya Pradesh encompassing 19 Krishi Vigyan Kendra. The University represents a well-knit and action oriented network of education, research, seed production and extension centers working in agriculture and allied fields in the state. The university is actively engaged in the maintenance of crop varieties and production of nucleus and breeder seeds to full fill the requirement of the state. The replacement of existing varieties by new ones is necessary for better yield and profitability. The percentage of area sown by using certified/ quality seed to total cropped area in a season is called seed replacement rate. Seed should be replaced every year for hybrid s every 3-4 years for improved varieties other than hybrids. Seed replacement rate is lower than recommended for different crops in the state of Madhya Pradesh. Seed replacement rate is below 10 percent in case of gram, 10 to 20 percent in soybean. Krishi Vigyan Kendra Dewas district was established by the ICAR to augment the farmers with latest technological knowledge. Kishi Vigyan Kendra Dewas has got a farm of 20.489 hectare. Out of this, in 18.00-hectare, breeder seed production taken in kharif as well as in Rabi season [1,2]. Keeping in view the above observation a study “An Economic Evaluation of farm of Krishi Vigyan Kendra Dewas (RVSKVV) of Madhya Pradesh was studied with the following objectives-

1. To analyze the breeder seed production and under sized in the farm

2. To work out the economics of production of Main crops of the farm
3. To find out the constraints in the production of different crops and to suggest suitable measures to overcome them.

Research Methodology

The research procedures include sampling and interview techniques, use of appropriate analytical tools, period of enquiry etc. Purposively sampling technique has been used for selecting farm of Krishi Vigyan Kendra, Dewas of Madhya Pradesh. The enquiry was conducted by survey method. The data were collected by personal interviews on well prepared schedule and questionnaires. In the course of investigation, several visits were made for time to time to collect the information. The primary data were collected from the selected farm. The secondary data were obtained from the Department of Agriculture Dewas. The study was conducted during 2016-17. For the analysis and interpretation of data, tabular analysis was made to compare the different aspects of selected farm of Krishi Vigyan Kendra with their relevant information. The average given, refers to the weighted average of the value [3,4].

Farm business analysis- This include the detailed analysis of cast and returns of the main crops of the farm and as well as a whole farm. The various measures used for the study included- input, output, net income, input-output ratio, cost of production, breakeven point etc. Efficiency of a farm is affected by the various techno-economic, organizational and special problems operation at the farm. On the basis of analysis of input – output and various problems at the farm, techno-economic and organizational suggestions will be given to improve the functional efficiency of the farm business.

Result- year wise and crop wise breeder seed production in the farm

Year wise and crop wise breeder seed production in the farm of Krishi Vigyan Kendra, Dewas are given in [Table -1].

Table-1 Year wise and crop wise breeder seed production in the farm

S.N.	YEAR	SOYBEAN			GRAM		
		PRODUCTION (Q)	BREEDER SEED(Q)	PERCENTAGE OF BREEDER SEED	PRODUCTION (Q)	BREEDER SEED(Q)	PERCENTAGE
1	2008-09	110.42	70.20	63.58	64.00	60.60	94.69
2	2009-10	215.50	168.40	78.14	272.52	240.00	88.07
3	2010-11	156.10	120.00	76.87	109.50	92.20	84.20
4	2011-12	289.35	234.00	80.87	162.65	120.40	74.02
5	2012-13	242.50	203.20	83.79	149.24	106.40	71.30
6	2013-14	78.29	SEED FAIL	00.00	229.60	144.725	63.03
7	2014-15	185.90	146.61	77.79	147.98	121.20	81.90
	AVERAGE	182.58	134.63	65.86	162.21	126.50	79.60

Fig-1 and 2 Year wise and crop wise breeder seed production in the farm**Fig-3 and 4** Year wise and crop wise undersized of the farm production**Table-2** Year wise and crop wise undersized of the farm production

S.N.	Year	Soybean			Gram		
		PRODUCTION (Q)	UNDER SIZED (Q)	PERCENTAGE OF UNDERSIZED	PRODUCTION (Q)	UNDER SIZED (Q)	PERCENTAGE OF UNDERSIZED
1	2008-09	110.42	29.499	26.72	64.00	2.92	4.56
2	2009-10	215.50	23.64	10.97	272.52	30.31	11.12
3	2010-11	156.10	30.01	19.28	109.50	15.00	13.70
4	2011-12	289.35	41.66	14.40	162.65	31.61	19.43
5	2012-13	242.50	26.14	10.78	149.24	18.47	12.38
6	2013-14	78.29	63.97	81.71	229.60	71.27	31.04
7	2014-15	185.90	31.90	17.16	147.98	26.63	17.99
	AVERAGE	182.58	35.26	25.85	162.21	28.03	15.75

Above Table reveals that the on an average 65.86 percent of soybean and 79.60 percentage of gram breeder seed produced in the Krishi Vigya Kendra (KVK) FARM from the Year 2008-09 to 2014-15. The percentage of breeder seed of soybean varied from 63.58 to 83.79 and in case of gram, it varied from 63.03 to 94.69 percent. In the year 2012-2013, Percentage of breeder seed production was the highest i.e., 83.79 percent and in case of gram, percentage of breeder seed production was the highest i.e., 94.69 percent in the year 2008-09. Percentage of breeder seed production of gram was more than the soybean.

Year wise and crop wise undersized of the farm production

Under size of grain of soybean and gram are depicted in [Table-2]. Under sized means that the seed is not fit for germination and poor size of seed. On an Average, out of 182.58 quintals production of soybean, under size of seed of soybean was 35.26 quintals (25.85 percent) and in case of gram, out of 162.21 quintals production, under size of seed was 28.03 quintals (15.75 percent). Percentage of under sized seed in soybean varied from 10.78 to 81.71 and in case of gram, it varied from 4.56 to 31.04 percent. Percentage of under sized seed of soybean and gram was the highest in the year 2013-14 i.e., 81.71 percent

and 31.04 percent respectively. Soybean seed was not fit for the germination (failed in germination test) in the year 2013-14.

production

Year wise soil dust, dirt and weight loss of soybean and gram are given in [Table-3].

Year wise and crop wise soil, dust, dirt and weight loss in the farm

Table-3 Year wise and crop wise soil, dust, dirt, weight loss etc. in the farm production

S.N.	Year	Soybean			Gram		
		Production (Q)	Soil dust Etc (Q)	Percentage Of Soil Dust Etc	Production (Q)	Soil dust Etc (Q)	Percentage Of Soil Dust Etc
1	2008-09	110.42	10.73	9.72	64.00	0.48	0.75
2	2009-10	215.50	23.46	10.89	272.52	2.21	0.81
3	2010-11	156.10	6.09	3.90	109.50	2.30	2.10
4	2011-12	289.35	13.69	4.73	162.65	10.64	6.54
5	2012-13	242.50	13.24	5.46	149.24	10.18	6.82
6	2013-14	78.29	-	-	229.60	13.60	5.92
7	2014-15	185.90	7.39	3.98	147.98	0.15	0.10
	AVERAGE	182.58	10.66	5.53	162.26	5.65	3.29

YEARWISE SOIL, DUST, DIRT, WIEGHT LOSS ETC. IN THE SOYBEAN PRODUCTION

YEARWISE PERCENTAGE OF UNDERSIZED (U/S) & SOIL, DUST, DIRT, WIEGHT LOSS. IN THE SOYBEAN PRODUCTION

YEARWISE SOIL, DUST, DIRT, WIEGHT LOSS ETC. IN THE GRAM PRODUCTION

YEARWISE PERCENTAGE OF UNDERSIZED (U/S) & SOIL, DUST, DIRT, WIEGHT LOSS. IN THE GRAM PRODUCTION

Fig- 5 and 6 Year wise and crop wise soil, dust, dirt, weight loss etc in the farm production

Fig- 7 and 8 Year wise and crop wise percentage of undersized (U/S) & soil, dust, dirt, weight loss in the farm production

Above table shows that the on an average soil dust, dirt and weight loss in Soybean production was 5.53 percent and in case of gram, it was 3.29 percent. Soil dust, dirt and weight loss in Soybean was more than the gram. In the year 2009-10, soil dust, dirt and weight loss in Soybean was the highest i.e., 10.89 percent and in case of gram, soil dust, dirt and weight loss in gram was the highest i.e., 6.82 percent.

Year wise and crop wise percentage of undersized (U/S) & soil, dust, dirt, Weight loss in the farm production

Percentage of under sized and percentage of soil dust etc of soybean and gram crops of the Krishi Vigyan Kendra, Dewas farm production is given in [Table-4].

Table-4 Year wise and crop wise percentage of undersized (U/S) & soil, dust, dirt, weight loss in the farm production

S.N.	YEAR	SOYBEAN			GRAM		
		PERCENTAGE OF U/S	PERCENTAGE OF SOIL DUST ETC	TOTAL PERCENTAGE	PERCENTAGE OF U/S	PERCENTAGE OF SOIL DUST ETC	TOTAL PERCENTAGE
1	2008-09	26.72	9.72	36.44	4.56	0.75	5.04
2	2009-10	10.97	10.89	21.88	11.12	0.81	11.93
3	2010-11	19.28	3.90	23.13	13.70	2.10	15.80
4	2011-12	14.40	4.73	19.13	19.43	6.54	25.97
5	2012-13	10.78	5.46	16.24	12.38	6.82	19.20
6	2013-14	81.71	00.00	81.71	31.04	5.92	36.96
7	2014-15	17.16	3.98	21.14	17.99	0.10	18.09
	AVERAGE	25.85	5.53	29.97	15.75	3.29	19.04
		STANDARD NORM			STANDARD NORM		
		PERCENTAGE INCREASE			PERCENTAGE INCREASE		
		10-12			5-7		
		172.45			217.33

Fig-9 Total percentage of undersized, soil dust & dirt etc., in soybean and gram production

From the above table, it was noticed that the total percentage of undersized and percentage of soil dust etc., varied from 16.24 to 36.44 in soybean in the Krishi Vigyan Kendra farm production from the year 2008-09 to 2014-15. In the year 2013-14, total percentage of under sized and percentage of soil dust etc., was the highest i.e., 81.71 percent. It was highest due to failure of germination of soybean in the year 2013-14 but in the year 2008-09, it was 36.44 percent which was comparative higher than the other years. In case of gram, Total percentage of undersized and percentage of soil dust etc., varied from 5.04 to 36.96 percent in

the Krishi Vigyan Kendra farm production. It was the highest in the year 2013-14 i.e., 36.96 but germination percentage of the seed was not failed.

The total percentage of undersized and soil dust etc. was higher than the standard norm. In case of soybean, it was 172.45 percent higher than the standard norm and in case of gram, the total percentage of undersized and soil dust etc. was 217.33 percent higher than the standard norm.

Due to excess of under sized and soil dust etc., the Krishi Vigyan Kendra farm goes in the loss so it is need for intensive monitoring at college level as well as university level and norm fix by the university should be follow by the Krishi Vigyan Kendra in the breeder seed production program. If the percentage of under sized and soil dust etc. is higher than the standard norm, in charge farm and senior scientist and head of the Krishi Vigyan Kendra give suitable reason.

Correlation between undersized and Soil dust have been analyzed and found that the value of 'R' is 0.102 and 0.504 i.e., non-significant, means that the No correlation between undersized and soil dust of soybean and gram respectively in breeder seed production of the farm.

Correlation between soybean and gram crop about total percentage of undersized, soil dust, dirt and weight loss have been also analyzed and found that 'R' value is 0.598 i.e., non-significant, means that there is no relationship between soybean and gram crop on percentage of undersized, soil dust, dirt and weight loss.

Year wise and head wise per hectare expenses of the farm

Year wise and head wise per hectare expenses of the Krishi Vigyan Kendra farm shows in [Table-5].

Table-5 Year wise and head wise per hectare expenses in farm

S.N.	PARTICULAR	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	AVERAGE	percentage from the total
1	SEED	4071.43	3264.71	5115.56	3867.43	3633.65	5066.67	13309.09	5475.51	17.23
2	FERTILISER	2138.82	1174.06	1695.36	1221.37	5793.50	4484.31	3482.69	2855.73	8.98
3	CULTURE	82.50	38.82	36.67	-	-	120.83	105.46	54.90	0.17
4	PLANT PROTECTION	734.43	1150.59	1272.50	1230.71	2227.15	2698.00	2052.62	1623.71	5.11
5	DIESEL FOR TRACTOR	2604.11	2044.97	1613.97	2263.57	1729.62	1955.78	2130.29	2048.90	6.45
6	MAINTENANCE & REPAIRS	354.36	391.24	477.69	558.20	1150.12	621.81	1256.91	687.19	2.16
7	HIRED LABOUR	9919.07	10435.59	8763.64	9969.14	8825.47	9074.64	11926.95	9844.93	30.97
8	IRRIGATION	953.50	847.21	689.33	691.03	745.15	1948.86	568.07	920.45	2.89
9	SEED BAGS	653.39	1155.32	451.94	805.54	1259.35	353.86	848.07	789.64	2.48
10	OTHER EXPENSES INCLUDING HIRING CHARGES, HAMMALI, GRADING EXPENSE & OTHER MISC.	5170.14	6781.41	6878.19	6775.77	8371.76	4974.67	13464.91	7488.12	23.56
	TOTAL / HA.	26681.39	27266.26	26994.86	27382.77	33735.76	21299.42	49144.91	31786.48	100.00

Above table reveals that the per hectare expenses varied from rupees 26681.39 to 49144.91. In the year 2014-15, per hectare expenses in the Krishi Vigyan Kendra farm was rupees 49144.91. It was the Highest due to input cost like fertilizer price, labour price etc. highly increased in comparison to previous year. On an average per hectare expenses in the Krishi Vigyan Kendra farm was rupees 31786.48. 80.74 percent expenses in the farm was in hired labour, miscellaneous expenses

like-hiring charges of tractor, hammali, grading and other, seed and fertilizers. An expense against hired labour was 30.97 percent which was the highest in comparison to other inputs used in the farm.

Year wise profit from the farm

Year wise profit from the Krishi Vigyan Kendra Dewas farm is shown in the following table.

Table-6 Year wise profit from the farm

S.N.	Year	Total Cropped Area (Ha)	Gross Return (Rs)	Total Expenditure(Rs)	Profit Of The Farm Rs/Year	Net Profit Rs Per Hectare	Input-Output Ratio
1	2008-09	28.00	1837294	747079	1090215	38936.25	1:2.46
2	2009-10	34.00	1160990	927053	233937	6880.50	1:1.25
3	2010-11	36.00	1766904	971815	795089	22085.81	1:1.82
4	2011-12	35.00	1905202	958397	946805	27051.57	1:1.99
5	2012-13	34.00	2854350	1147016	1707334	50215.71	1:2.49
6	2013-14	36.00	2399036	1126779	1272257	35340.47	1:2.13
7	2014-15	27.50	1611163	1351485	259678	9442.84	1:1.19
Average		32.93	1933562.72	1032803.43	900759.29	27136.16	1:1.85

Fig-10 Expenditure and net profit of the farm per hectare

From the above table, it was clear that the profit of the farm of Krishi Vigyan Kendra Dewas varied from rupees 233937 to 1707334 from the year 2008-09 to 2014-15. The total cropped area also varied from 27.50 to 36.00 hectare. The area of Rabi season falls down in some year due to low rainfall in Kharif or delay rains in kharif also affected the area of Rabi season for sowing. Total cropped area of the farm effected the Profit of the farm. Year wise differences in the profit were also affected by the climate because soybean crop highly sensitive. In the year 2014-15 and 2009-10, dry spell effected the production as well as profit of the farm. The net profit of the farm was highest i.e., rupees 50215.71 per hectare in the year 2012-13, because climate and rainfall and other situation were suitable for soybean and gram breeder seed production. Input-output (B:C ratio) ratio of the Krishi Vigyan Kendra farm from the year 2008-09 to 2014-15, was 1:1.19 to 1:2.499. In the year 2012-13, input-output ratio was the highest i.e., 1:2.49. On an average the input-output ratio of the farm was 1:1.85.

Correlation between expenditure and net profit have been also analyzed and found that the value of 'R' is - 0.102 i.e., non-significant, means that the no correlation between expenditure and net profit of the farm of Krishi Vigyan Kendra.

Cost of cultivation of soybean (rupees per hectare)

Cost of cultivation rupees per hectare of soybean crop of Krishi Vigyan Kendra Dewas farm is given in [Table-7].

It is clear from above table that the cost of cultivation of soybean on an average, it was Rupees 39356.38 per hectare. For the breeder seed production, the cost of fertilizer was the highest i.e., 25.99 percent of the total cost of cultivation. Simultaneously on an average, the cost of seed and sowing was 24.04 percent, harvesting and threshing cost was 10.79 percent, weeding cost 10.67 percent, overhead cost was 8.46 percent cost of plant protection was 6.40 percent, cost of field preparation was 5.85 percent, cost of summer ploughing was 4.76 percent and cost of grading was 3.04 percent

Return from soybean crop cultivation from farm (rupees per hectare)

Economic analysis of soybean crop cultivation per hectare of Krishi Vigyan Kendra Dewas farm is given in [Table-8].

Table-8 Return from soybean cultivation per hectare in kvk farm

S.N.	PARTICULAR	YEAR 2013-14	YEAR 2014-15	AVERAGE
1	YIELD q/HA			
a	BREEDER SEED	0.58	11.28	5.93
b	UNDERSIZED/ DALL	3.77	2.45	3.11
c	STRAW	5.00	11.28	8.14
2	RATES / Q			
a	SEED	7000.00	11250.00	9125.00
b	UNDER SIZED (MANDI SOLD RATE)	3559.45	2719.28	3139.37
c	STRAW	111.11	150.00	130.56
3	GROSS RETURN / HA			
a	SEED	4060.00	126900.00	65480.00
b	UNDER SIZED	13419.13	6662.24	10040.69
c	STRAW	555.55	1692.00	1123.78
	TOTAL	18034.68	135254.24	76644.47
4	COST OF CULTIVATION / HA	39692.81	39019.94	40288.09
5	NET INCOME Rs / HA	-21658.13	96234.30	36092.63
6	INPUT -OUTPUT RATIO	1:0.45	1:3.48	1:1.96
7	COST OF PRODUCTION Rs/ Q	9124.78	2896.80	4553.58
8	BREAK EVEN POINT	5.67	3.47	4.31

From the above table, it was clear that the on an average net income rupees per hectare of soybean was rupees 40288.09. Input output ratio was 1:1.96, cost of production rupees per quintal was 4353.58 and breakeven was 4.31 quintals. net income the year was 2013-14 was in negative because production was very low and failure of seed germination. Price of breeder seed is much higher otherwise farm goes in loss.

Cost of cultivation of gram per hectare in kvk farm

Cost of cultivation rupees per hectare of gram crop of Krishi Vigyan Kendra Dewas farm is given in [Table-9].

Fig-11 Cost of Cultivation of crops taken in KVK Dewas farm

Table-7 Cost of cultivation of soybean per hectare in KVK farm

S.N	Particular	Year 2013-14			Year 2014-15			Average	Percent From Total
		Quantity Required	Rate/ Unit	Cost/Ha	Quantity Required	Rate/ Unit	Cost/Ha		
1	SUMMER PLOUGHING	FOR 3 YRS	5609.38	1869.79	FOR 3 YRS	5609.38	1869.79	1869.79	4.76
2	Field Preparation *Ploughing By Punja *Labour	02 03	450/-hr 158/day	1800.00 474.00	02 03	450/-hr 178/day	1800.00 534.00	1800.00 504.00	
				2274.00			2334.00	2304.00	5.85
3	Seed & Sowing *Seed *Culture- Psb Rizobium *Vitavax *Labour *Sowing By Seed Drill	70kg 04 PKT 04PKT 175 gram 02 02hr	11250/- 12/- 10/- 140/100 g 158/- 450/-	7875.00 48.00 40.00 245.00 316.00 900.00	70 04 PKT 04PKT 175 gram 02 02hr	11250/- 12/- 10/- 160/100g 178/- 450/-	7875.00 48.00 40.00 245.00 356.00 900.00	7875.00 48.00 40.00 262.50 336.00 900.00	
				9424.00			9499.00	9461.00	24.04
4	Fertilizer *Nitrogen *Phosphorus *Potash *Sulphur *Labour *Application In The Field	20 kg 60 kg 20kg 25kg 01 02hr	NPK12:3 2:16 4189.80 186.20 69.83 158.00 139.65 36.73 158/- 450/-HR	3724.00 4189.80 2793.03 918.12 158.00 900.00	20 kg 60 kg 20kg 25kg 01 02hr	NPS13:33:0:6 132.15 52.06 9.89 36.73 178/- 450/-HR	2643.08 3123.64 197.83 734.60 178.00 900.00	3183.54 3656.72 1495.43 826.36 168.00 900.00	
				12682.95			7777.15	10230.05	25.99
5	Weeding (Manual/ Hand weeding) No. Of Labour	25	158/-	3950.00	25	178/-	4450.00	4200.00	10.67
6	Plant Protection *Herbicides (Persuit) *Trizophos *Labour	01 lit 800 ml 02	1550.00/ - 400/- lit 300/-	1550.00 320.00 600.00	01 lit 800 ml 02	1550.00/ 400/- lit 350/-	1550.00 320.00 700.00	1550.00 320.00 650.00	
				2470.00			2570.00	2520.00	6.40
7	HARVESTING (Contract Basis With Loading & Un Loading)	-	-	2777.78	-	-	3333.30	3055.54	
8	Threshing (Contract Basis With Loading & Un Loading)	-	-	916.66	-	-	1461.54	1189.10	
				3694.44			4794.84	4244.64	10.79
9	Grading Expenses *Grading Charges *Hammali Charges *Gunny Bags Cost *Picking Of Dal/ U/S (No .Of Labour) *Packing Expenses, (Weight,Swinging Writing & Tagging) (No .Of Labour)	- - - - -	- - - - -	FAILURE OF SEED	185.90 Q 206.55 366 12 18	25/- 8/- 26.99 178/- 178/-	4647.50 1652.40 9878.34 2136.00 3204.00	4647.50 1652.40 9878.34 2136.00 3204.00	
							21518.24	21518.24	
							2390.92	1195.46	3.04
10	Over Head Cost *Interest On Fixed Capital * Interest On Working Capital * Depreciation	- - -	10% 12% 0.6%	927.53 2181.91 218.19	- - -	10% 12% 0.6%	927.53 2192.59 214.12	927.53 2187.25 216.16	
							3330.94	8.46	
	TOTAL COST OF CULTIVATION PER HA.			39692.81			38840.87	40551.84	100.0

From above table, on an average the cost of cultivation of gram was rupees 43587.86 per hectare. The cost of Seed and sowing was the highest i.e., rupees 24.93 percent of the total cost in comparison to other input cost. the cost of fertilizer was 21.93 percent, cost of harvesting and threshing was 11.09 percent,

cost of weeding was 10.38, cost of field preparation was 9.10 percent, over head cost was 8.0 percent, cost of irrigation was 5.74, cost of plant protection was 4.81 and cost of grading of seed was 4.02 percent which was analyze in krishi Vigyan Kendra Dewas farm.

Table-9 Cost of cultivation of gram per hectare in kvk farm

S.N	Particular	Year 2013-14			Year 2014-15			Average	Percent
		Quantity Required	Rate/ Unit	Cost/Ha	Quantity Required	Rate/ Unit	Cost/Ha		
1	Summer Ploughing	FOR 3 YRS	5609.38	1869.79	FOR 3 YRS	5609.38	1869.79	1869.79	
2	Field Preparation *Ploughing By Punja *Labour	02 02	450/-hr 2hr=1ha 158/day	1800.00 316.00	02 02	450/-hr 2hr=1ha 178/day	1800.00 356.00	1800.00 336.00	
				3945.79			3985.79	3965.79	9.10
3	Seed &Sowing *Seed *Culture- Psb Rizobium *Vitavax *Labour *Sowing By Seed Drill	80kg 04 PKT 04PKT 200 g 02 02hr	12000/- 12/- 10/- 140/100g 158/- 450/-	9600.00 48.00 40.00 280.00 316.00 900.00	80kg 04 PKT 04PKT 200 g 02 02hr	12000/- 12/- 10/- 160/100g 178/- 450/-	9600.0 48.00 40.00 320.0 356.00 900.00	9600.00 48.00 40.00 300.00 336.00 900.00	
				10848.00			10888.00	10868.00	24.93
4	Fertilizer *Nitrogen *Phosphorus *Potash *Labour *Application In The Field	20 kg 60 kg 20kg 02 02hr	NPK12:32:16 186.20 69.83 139.65 158/- 450/-HR	3724.00 4189.80 2793.03 316.00 900.00	20 kg 60 kg 20kg 02 02hr	NPS13:33:0: 6 132.15 52.06 9.89 178/- 450/-HR	2643.08 3123.64 197.83 534.00 900.00	3183.54 3656.72 1495.43 425.00 900.00	
				11922.83			7198.55	9560.69	21.93
5	Irrigation *No. Of Irrigation (Electric & Other) Charges *No Of Labour	02 04		1828.46 632.00	02 04	- 178/-	1828.46 712.00	1828.46 672.00	
				2460.36			2540.86	2500.86	5.74
6	Weeding/ Manual/ Handweeding) No. Of Labour *Bullock Drawn (Dora)	20 01	158/-01 1120.69	3160.00 1120.69	20 01	178/- 1206.90	3560.00 1206.90	3360.00 1163.80	
				4280.69			4766.90	4523.80	10.38
7	Plant Protection *Quinolpos) *Trizophos *Labour	1250ML 800 ml 04	380.00/- 400/- lit 300/-	475.00 320.00 1200.00	1250ML 800 ml 04	380.00/- 400/- lit 350/-	475.00 320.00 1400.00	1550.00 320.00 1300.00	
				1995.00			2195.00	2095.00	4.81
8	HARVESTING (Contract Basis With Loading & Un Loading)	-	-	3338.66	-	-	3408.69	3373.68	
9	Thresing (Contract Basis With Loading & Un Loading)	-	-	1355.55	-	-	1565.22	1460.39	
				4694.21			4973.91	4834.06	11.09
10	Grading Expenses *Grading Charges *Hammali Charges *Gunny Bags Cost *Picking Of Dal/ U/S (No .Of Labour) *Packing Expenses, (Weight,Swinging Writing & Tagging) (No .Of Labour)	229.60 267 bag 362 bag 12 18	25/- 7/- 26.99/- 158/- 158/-	5740.00 7476.00 9770.38 1896.00 2844.00	143.98 173bags 325bags 12 18	25/- 8/- 26.99 178/- 178/-	3000.0 5536.00 8771.75 2136.00 3204.00	4647.50 1652.40 9878.34 2136.00 3204.00	
		Expense of 18.00 ha was 27726.38 in Kharif and EXPENSES OF11.50.00 ha was 22647.75 in Rabi						21518.24	
		EXPENSES FOR 01 ha 1540.35					1969.37	1754.86	4.02
10	Over Head Cost *Interest On Fixed Capital * Interest On Working Capital * Depreciation	- - -	10% 12% 0.6%	927.53 2496.52 249.65	- - -	10% 12% 0.6%	927.53 2153.52 215.35	927.53 2325.02 232.50	
				3673.70			3296.40	3485.05	8.0
	TOTAL COST OF CULTIVATION PER HA.			45360.93			41814.78	43587.86	100.0

Return from gram cultivation per hectare in kvk farm

Economic analysis of gram crop cultivation per hectare of Krishi Vigyan Kendra Dewas farm is given in [Table-10]

Table-10 Return from gram cultivation per hectare in kvk farm

S.N.	PARTICULAR	YEAR 2013-14	YEAR 2014-15	AVERAGE
1	YIELD q/HA			
A	BREEDER SEED	8.04	11.26	9.65
B	UNDERSIZED/ DALL	3.96	1.24	2.60
C	STRAW	10.18	18.55	14.37
2	RATES / Q			
A	SEED	8000.00	8000.00	8000.00
B	UNDER SIZED (MANDI SOLD RATE)	2004.50	1526.36	1765.43
C	STRAW	150.00	150.00	150.00
3	GROSS RETURN / HA			
A	SEED	64320.00	90080.00	77200.00
B	UNDER SIZED	7937.80	1892.69	4915.25
C	STRAW	1527.00	2782.50	2154.75
	TOTAL	73784.82	94755.19	84270.01
4	COST OF CULTIVATION / HA	45360.93	41814.78	43587.86
5	NET INCOME Rs / HA	28423.89	52940.41	40682.15
6	INPUT –OUTPUT RATIO	1:1.63	1:2.27	1:1.93
7	COST OF PRODUCTION Rs/ Q	3780.08	3345.18	3558.19
8	BREAK EVEN POINT	5.67	5.23	5.45

From the above table, it was clear that the on an average net income rupee per hectare of gram was rupees 40682.15. Input output ratio was 1:1.93, cost of production rupees per quintal was 3558.19 and breakeven was 5.45 quintals.

Problems and suggestion identified in farm

Problems have been identified in Farm are-

1. Labour problem also available in the farm because of industrial are near to farm. Sood and retired labour available i.e., the reason labour efficiency and labour productivity poor.
2. All the parameter of production technologies was fallow but the productivity of the crops bellow its potential yields as well as district productivity.
3. Go down is not available in 20.489 ha farm. Produce of the farm stored in residential quarter and farmer's hostel.
4. Threshing floor of farm is also small size. It is not up to the capacity of farm produce. It is required big size of threshing floor.
5. Fencing of farm near to public residential area, require boundary wall.
6. One boring between fields no 9 and 10 is required for increasing cropping intensity.
7. Tractor is old. New tractor required.
8. Tractor driver is not posted till date. Tractor driver should be posted as soon as possible.
9. Farm related committee should be effective.
10. Monitoring schedule and checklist is also prepared and an activity done according to checklist and it is monitored by college/ university level.
11. Grading facilities is not available in the farm, therefore, 2 to 3 percent losses is seen in the farm.

Conclusion

The percentage of breeder seed of soybean varied from 63.58 to 83.79 and in case of gram, it varied from 63.03 to 94.69 percent. In the year 2012-2013, Percentage of breeder seed production was the highest i.e., 83.79 percent and in case of gram, percentage of breeder seed production was the highest i.e., 94.69 percent in the year 2008-09. Soil dust, dirt and weight loss in soybean was more than the gram. In the year 2009-10, soil dust, dirt and weight loss in Soybean was the highest i.e., 10.89 percent and in case of gram, soil dust, dirt and weight loss in gram was the highest i.e., 6.82 percent. The total percentage of undersized and soil dust etc was higher than the standard norm. In case of soybean, it was 172.45 percent higher than the standard norm and in case of gram, the total percentage

of undersized and soil dust etc. was 217.33 percent higher than the standard norm.

Due to excess of under sized and soil dust etc, the Krishi Vigyan Kendra farm goes in the loss so it is need for intensive monitoring at college level as well as university level and norm fix by the university should be follow by the Krishi Vigyan Kendra in the breeder seed production program. 80.74 percent expenses in the farm was in hired labour, miscellaneous expenses like-hiring charges of tractor, hammali, grading and other, seed and fertilizers. The net profit of the farm was highest i.e., rupees 50215.71 per hectare in the year 2012-13, because climate and rainfall and other situation were suitable for soybean and gram breeder seed production. The cost of cultivation of soybean on an average, it was Rupees 39356.38 per hectare. For the breeder seed production on an average net income Rupees per hectare of soybean was rupees 40288.09. Input output ratio was 1:1.96, cost of production rupees per quintal was 4353.58 and break-even was 4.31 quintals. on an average the cost of cultivation of gram was rupees 43587.86 per hectare .net income rupees per hectare of gram was rupees 40682.15. Input output ratio was 1:1.93, cost of production rupees per quintal was 3558.19 and break-even was 5.45 quintals.

Application of research

Problems have been identified in Farm were All the parameter of production technologies was fallow but the productivity of the crops bellow its potential yields as well as district productivity. Farm related committee should be effective. Grading facilities is not available in the farm, therefore, 2 to 3 percent losses is seen in the farm.

Research Category: Agricultural Economics

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