



ORIGINAL RESEARCH PAPER

Commerce

FARMERS' PERCEPTION TOWARDS WATER MANAGEMENT SYSTEM IN TURMERIC CULTIVATION- AN EMPIRICAL ANALYSIS

KEY WORDS: Drip irrigation, Turmeric Cultivation and Land Holding

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ABSTRACT In Drip irrigation, the water is applied near the root zone of the plants drop by drop. This system has been proved as the most water saving and easy micro-irrigation technology for efficient water utilisation in areas of scarcity and constraints. The drip irrigation systems are easy to control and can deliver a specific amount of water over a long period of time. Weed growth is reduced because areas between plants are not irrigated. Through the use of fertilizer, dispensers, chemicals and nutrients can be fed directly to the plant in controlled quantities. The drip system is economical to use with native landscapes in dry weather conditions, lower labour cost, levelling off the field not necessary, minimized soil erosion and highly uniform distribution of water.

INTRODUCTION

Agriculture is the backbone of the Indian economy. Despite the rapid strides of progress made on industrial front, agriculture continues to play a predominant role in accelerating the economic development. In India turmeric is a traditional crop. It is also known as the "Golden Spice". There is a very good commercial value for the by-products like spice oils and oleoresins. Turmeric has an intrinsic property of imparting a typical flavour and colour due to the presence of the chemical and curcumin. Indian turmeric is considered to be the best in the world market because of its high curcumin content.

OBJECTIVES OF THE STUDY

- To analyse the farmers' perception towards drip irrigation system in turmeric cultivation

TOOLS FOR DATA ANALYSIS

Garrett ranking technique has been used to analyse the reasons for adopting and not adopting drip irrigation in turmeric cultivation

REVIEW OF LITERATURE

S.S.Nagarajan (2000) made an attempt to list out hurdles faced by turmeric growers in erode district. He used Garrett's Ranking Technique for his study. The study was based on survey data, which was pertained to the crop year 1998-99. The turmeric growers had listed out seven important hurdles. Among the seven hurdles, Water problem, pest and disease attack and price fluctuation were the main hurdles faced by the turmeric growers.

E. Svatwa et al. (2009) most farmers viewed organic farming as a less costly and convenient means of growing crops. The perceptions shared by farmers are that organic crops do not spread diseases. The benefits of organic farming were not well understood by the farmers. Those who were not performing well noted that their success had deteriorated as farm visits and problem-solving support had decreased. However, the successful farmers found that organic farming had enabled them to achieve good crop quality, yields in leaf crops and improvements in their farming operations. Farmers were

- Nagarajan, S.S.,(2000), "Turmeric Cultivation, a Hurdles Race on the farm Fields", Kissan world, Vol.35, No.2 August, p.42.
- Baipai, R. and Jiyane, J., (2009) "Organic Farming in the Small Holder Farming Sector of Zimbabwe", Journal of Organic Systems – Vol.4 No.1, pp.55-60.

constrained by having small livestock herds, with a limited supply of manure, although many still relied on animal manure. Decomposition of organic matter was often slow and was available too late. Common problems included inadequate inputs, high labour demand, little technical backup and lack of subsidy of drip irrigation.

Visawadia (2010) revealed that the yields have been observed to be relatively lower on organic wheat farm; however the net profit was higher in the case of organic wheat due to advantage of price premium. The extent of adoption status among the sample farmers was found fairly good. Those farmers practising organic farming were well aware about the basic facts related to sustainability, non-permissibility of chemical fertilisers and other technological information like modern drip irrigation system, conversion and sources of organic fertilisers, while the farmers not practising organic farming were not aware about the package of practices of organic farming. The initial input cost in natural farming can be gradually reduced after the basic ecosystem restoration.

REASONS FOR ADOPTING DRIP IRRIGATION: GARRETT RANKING ANALYSIS

To identify the important reasons for adopting drip irrigation by turmeric cultivating farmers the Garrett Ranking Technique has been used with the following formula

$$\text{Per cent Position} = \frac{100 (R_{ij} - 0.5)}{N_j}$$

Where,
Rij = Rank given for the ith factor by the jth respondents.
Nj = Number of factors ranked by jth respondents

By referring the Garrett's Ranking Table, the percentage position estimated is converted into scores. Accordingly, score value as per Garrett Ranking Technique for first rank to thirteenth rank is as 84.09, 73.5, 67.12, 62.14, 57.81, 53.83, 50, 46.17, 42.19, 37.86, 32.88, 26.5 and 15.91 respectively. Then for each factor the scores of each farmer

- Visawadia, H.R., (2010), "Organic wheat farming for sustainable Agriculture in Saurashtra Region of Gujarat State", Indian Journal of Agricultural marketing, Vol.24, No.1, pp.132-138.

are added and then mean value is calculated. The factor having the highest mean value is considered to be the first.

TABLE 3.6 REASONS FOR ADOPTING DRIP IRRIGATION

RANK SCORE REASONS	Garrett's Ranking Method													TOTAL Score	MEAN SCORE	RANK
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII			
Best suited for undulating fields	252.27	294.00	402.72	310.70	578.10	753.62	600.00	554.04	295.33	643.62	1216.56	1881.50	747.77	8530.23	34.82	12
High labour saving	3	4	6	5	10	14	12	12	7	17	37	71	47	245		
Water saving	9165.81	2058.00	1409.52	869.96	1849.92	215.32	600.00	92.34	253.14	302.88	32.88	79.50	79.55	17008.82	69.42	1
Easy fertilizer application	109	28	21	14	32	4	12	2	6	8	1	3	5	245		
	4540.86	6541.50	671.20	1304.94	809.34	699.79	450.00	507.87	210.85	151.44	263.04	26.50	95.46	16272.89	66.42	2
	54	89	10	21	14	13	9	11	5	4	8	1	6	245		
	1765.89	1323.00	5101.12	1739.92	2312.40	1184.26	500.00	92.34	590.66	75.72	32.88	79.50	127.28	14924.97	60.92	3
	21	18	76	28	40	22	10	2	14	2	1	3	8	245		

Increase in cultivating area	924.99	1690.50	0.00	310.70	1098.39	1991.71	2650.00	415.53	1898.55	681.48	493.20	132.50	79.55	12367.10	50.48	6
	11	23	0	5	19	37	53	9	45	18	15	5	5	245		
Uniform irrigation is possible	336.36	735.00	536.96	1056.38	1329.63	2260.86	450.00	2262.33	885.99	1097.94	230.16	318.00	222.74	11722.36	47.85	8
	4	10	8	17	23	42	9	49	21	29	7	12	14	245		
Easy maintenance of big farms	420.45	588.00	134.24	434.98	57.81	592.13	2050.00	969.57	3122.06	1552.26	394.56	450.50	79.55	10846.11	44.27	10
	5	8	2	7	1	11	41	21	74	41	12	17	5	245		
Irrigation during night time	1093.17	294.00	134.24	62.14	1387.44	2207.03	1550.00	3416.58	632.85	454.32	230.16	265.00	175.01	11901.94	48.58	7
	13	4	2	1	24	41	31	74	15	12	7	10	11	245		
Reduction in weed	420.45	1396.50	3557.36	2361.32	1329.63	484.47	0.00	1108.08	210.95	454.32	1216.56	344.50	111.37	12995.51	53.04	5
	5	19	53	38	23	9	0	24	5	12	37	13	7	245		
Able to irrigate entire area in short period	84.09	294.00	738.32	124.28	57.81	484.47	2000.00	784.89	970.37	2309.46	822.00	556.50	477.30	9703.49	39.61	11
	1	4	11	2	1	9	40	17	23	61	25	21	30	245		
Daily irrigation with limited water	1009.08	220.50	268.48	683.54	2370.21	1722.56	1200.00	600.21	210.95	567.90	2202.96	132.50	206.83	11395.72	46.51	9
	12	3	4	11	41	32	24	13	5	15	67	5	13	245		
Increase in yield	420.45	1690.50	2819.04	5903.30	693.72	269.15	100.00	507.87	590.66	37.86	230.16	450.50	175.01	13888.22	56.69	4
	5	23	42	95	12	5	2	11	14	1	7	17	11	245		
Better subsidy from government	168.18	882.00	671.20	62.14	289.05	322.98	100.00	0.00	464.09	946.50	690.48	1775.50	1320.53	7692.65	31.40	13
	2	12	10	1	5	6	2	0	11	25	21	67	83	245		
	245	245	245	245	245	245	245	245	245	245	245	245	245	3185		

Table 3.6 clearly shows that High labour saving is the main reason for adopting drip irrigation by the turmeric farmers followed by water saving, easy fertiliser application, increase in yield, reduction in weed, increase in cultivating area, irrigation during night time, uniform irrigation is possible, daily irrigation with limited water, easy maintenance of big farms, able to irrigate entire area in short period, best suited for undulating field and better subsidy from government.

The main reason for not adopting drip irrigation is high investment. Small and medium farmers are unable to afford it.

Scale values as per Garrett Ranking technique for first to ten ranks are: 81.86, 70.37, 63.30, 57.61, 52.49, 47.51, 42.39, 36.70, 29.63 and 18.14 respectively.

The percentage position of each rank is made into score by referring factors and summed up for assigning rank. Table 3.7 shows the reasons for not adopting drip irrigation.

REASONS FOR NOT ADOPTING DRIP IRRIGATION: GARRETT RANKING ANALYSIS

TABLE 3.7 REASONS FOR NOT ADOPTING DRIP IRRIGATION

RANK	Garrett's Ranking Method													TOTAL Score	MEAN SCORE	RANK
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII			
SCORE REASONS	84.09	73.5	67.12	62.14	57.81	53.83	50	46.17	42.19	37.86	32.88	26.5	15.91			
Best suited for undulating fields	252.27	294.00	402.72	310.70	578.10	753.62	600.00	554.04	295.33	643.62	1216.56	1881.50	747.77	8530.23	34.82	12
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	54	89	10	21	14	13	9	11	5	4	8	1	6	245		
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	12	3	4	11	41	32	24	13	5	15	67	5	13	245		
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	2	12	10	1	5	6	2	0	11	25	21	67	83	245		
	245	245	245	245	245	245	245	245	245	245	245	245	245	3185		

Table 3.7 shows that the "High Initial Investment" has been ranked as first with the highest score of 68.63 followed by enough water supply problems at the time of harvesting, Government subsidy is not enough, follow traditional method, small land holding, saltwater, shared well, pipeline irrigation and subdivision of land.

CONCLUSION

Reasons for adopting drip irrigation have been examined with Garrett Ranking technique. It is found that the main reason for adopting drip irrigation is 'High labour saving' as indicated by its highest mean score of 69.42 followed by water saving with the score of 66.42. It is also found that the major reason for not adopting drip irrigation is 'High initial Investment' with the mean score of 68.63 followed by enough water supply with the mean score of 63.16.

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