Environment & Ecology 29 (1A) : 287—289, 2011
 ISSN 0970-0420

Economics and Adoption of Drum Seeding Technology by Paddy Growers

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Abstract

Cent per cent of drum seeding farmers opinioned that farmers can use drum seeder, but majority of them discontinued the use of drum seeder. The major reasons expressed by them for discontinuance are non-adoption of timely drum seeding practices leads to more problems, maintenance of water in initial stages of crop establishment, birds menace, more price of weedicide and failure in control of Echinoclova and sedges by weedicides. Farmers got additional income of Rs 9363 per hectare by adopting drum seeder technology compared to transplanting through savings.

Key words : Drum seeding technology, Transplanting, Adoption, Additional income.

It is well known that the rice yield is strongly influenced by plant population per unit area. The recommended population for optimum yield varies from 50 to 67 hill per square meter depending upon the duration of the variety. Unfortunately farmers in most of the rice growing areas are unable to maintain this level due to contract laborers, who in a hury to cover more area in a short time, invariably go for low population which generally varies from 25 to 35 hills per square meter. This is a wide spread problem. Subbaiah and Balasubramanian (1) states that scientists have been trying various means to overcome this hardship. Drum seeder is one such simple apparatus developed to solve the problem. But, unfortunately this technology is not adopted by majority of rice growers, with this background the present study was undertaken with the objectives to study adoption of drum seeding practices followed by the paddy growers and its economics and to find out opinion on the use of drum seeder, status of continued use of drum seeder by paddy farmers, and the reasons for discotinuance.

Methods

The study was conducted in Mandya and Malavalli taluks of Mandya district of Karnataka. The list of paddy farmers who were adopted drum seeder was obtained from Agriculture Department, Extension Education unit and ZARS, VC Farm, Mandya. From such a list 40 paddy farmers were randomly selected and personally interviewed using pre-tested interview schedule. The data were tabulated, analyzed and the results are presented below.

Results and Discussion

Table 1 reveals that majority of drum seeding farmers soaked the seeds for 24 hours for sprouting, followed two times dry ploughing and wet ploughing, prepared land like nursery bed and made drainage canal at a distance of 2.43—3.65 m for draining out excess water, impounded and drained out water in the in the morning hours during initial stages of crop establishment once in 2—3 days after drum seeding, used rotary weeder two times and carried out hand weeding two times in crop rows and followed birds scaring techniques. There are no reported studies available on the findings of the present study.

Adoption of complete package of practices of drum seeding technology by the farmers may be attributed to the reason that since the drum seeding technology is new, more concentrated efforts are to be made by the extension workers to realize the importance of adoption of complete package of practices by the farmers through training and demonstrations.

Table 2 indicates that cent per cent of the farmers opined that they can use drum seeder, but majority of them discontinued the use of drum seeder. The major reasons expressed by them for discontinuance are non-adoption of timely drum seeding practices leads

Table 1. Specific drum seeding practices followed by the farmers.

	Practices	No.	Per cent
1	Soaking of seeds for 24 hours	40	100.00
2	Incubation of seeds for sprouting		
	A. 24 hours	29	72.50
	B. 36 hours	11	27.50
3	Number of ploughings		
	A. dry ploughing		
	1. Two times	32	80.00
	2. One times	8	20.00
	B. wet ploughing		
	1. Two times	36	90.00
	2. Three times	4	10.00
4	Type of land preparation		
	A. Like transplanting	6	15.00
	B. Like nursery bed preparation	34	85.00
5	Making drainage canal for draining out excess water		
	A. Drainage canal not made	2	5.00
	B. Drainage canal made	38	95.00
	1. At 2.43—3.65 m distance	30	78.95
	2. 2.43—3.65 m distance	8	21.05
6	Impounding and draining out of water during initial stages of crop establishment		
	A. Once in 2—3 days	37	92.50
	B. Once in 4—5 days	3	7.50
7	Time of impounding of water in plots		
	A. Morning	40	100.00
	B. Evening	–	–
8	Use of weedicide		
	A. Sofit	34	85.00
	B. Sofit + Almix	1	2.50
	C. Sofit + 2-4-D	1	2.50
	D. Butachlor	1	2.50
	E. No	3	7.50
9	Time of application of weedicide		
	A. 3—5 days	39	97.50
	B. More than 5 days	1	2.50
10	Use of rotary weeder		
	A. Not used	2	5.00
	B. Used	38	95.00
	1. One time	9	23.68
	2. Two times	27	71.05
	3. Three times	2	5.27
11	Hand weeding		
	A. Entire plot	2	5.00
	B. In crop rows	38	95.00
	1. One time	9	23.68
	2. Two times	29	76.32
12	Use of birds scaring techniques		
	A. Followed	39	97.50
	B. Not followed	1	2.50

to more problems, maintenance of water in initial stages of crop establishment , birds menace, more

Table 2. Economics of drum seeding technology/hectare. Net profit = Rs. 9,362.50 {Rs 17, 237.50 (A) –7,275 (B) }

	Operation	No/ quantity	Unit cost (Rs)	Total
	A. Additional Returns (saving) over transplanting			
1	Raising of nursery			
	A. Seeds (kgs)	17.50	15	262.50
	B. Bullock pair	2.5	200	500.00
	C. Labor (men)	5	100	500.00
2	Transplanting			
	A. Labor (Men)	5	100	500.00
	B. Labor (Women)	45	75	3375.00
3	Weeding (Women Laborers)	35	75	2625.00
4	Grain yield (quintals)	9.75	900	8775.00
5	Straw yield (ton)	1.00	700	700.00
	Total (A)			17237.50
	B. Additional Cost			
1	Land preparation			
	A. Bullock pair	2.5	200	500.00
	B. Laborers (men)	5.0	100	500.00
2	Sowing operation			
	A. Rent for drum seeder	2.5	100	250.00
	B. Laborers (men)	4.0	100	400.00
3	Application of weedicide			
	A. Cost of weedicide	1 liter	1500	1500.00
	B. Laborers (men)	2	100	200.00
4	Water management and birds scaring (men laborers)	13	100	1300.00
	Use of rotary weeder			
	A. Rent	5	100	500.00
	B. Laborers (men)	10	100	1000.00
6	Transplanting of seedlings in vacant land-laborers (women)	5	75	375.00
7	Weeding in crop rows-laborers (women)	10	75	750.00
	Total			7275.00

price of weedicide and failure in control of echinoclova and sedges by weedicides.

Table 3 shows that farmers got additional income of Rs 9,362.50 per hectare by adopting drum seeder sowing when compared to transplanting through savings. Farmers save cost on seeds, bullock pairs, weeding and transplanting. On the contrary, they have to incur the cost on land preparation, sowing operation, application of weedicide, water management and birds scaring, use of rotary weeder, trans-

Table 3. Opinion on the use of drum seeder, status of continued use of drum seeder by farmers and reasons for discontinuance.

	Category	No	Per cent
I	1. Opinion on the use of Drum seeder	40	100.00
	A. can be used	–	–
	B. cannot be used		
	2. Present use status		
	A. Continued	15	37.50
	B. Dicontinued	25	62.50
II.	Reasons for discontinuances		
	1. Non-adoption of timely drum seeding practices leads to more problems	36	90.00
	2. Maintenance of water in initial stages of crop establishment	32	80.00
	3. Birds menace	30	75.00
	4. More price of weedicide	28	70.00
	5. Failure in control of echinoclova and sedges by weedicides	21	52.50
	6. Preparation of land like that of nursery	13	32.50
	7. Non availability of rotary weeder	13	32.50
	8. Water scarcity	12	48.00
	9. Non availability of drum seeder in time	11	27.50
	10 Gap filling	8	20.00

planting of seedlings in vacant land and weeding in crop rows. Due to seeding the paddy grain yield is increased by 9.75 quintals and straw yield by one tone per hectare. The findings of the present study are in accordance with findings of Kenchaiah et al. (2).

Conclusion

All the drum seeding farmers opined that farmers can use drum seeder, but majority of them discontinued the use of drum seeder because of water scarcity. Therefore, efforts are to be made for regular supply of water in the canal which enables farmers for impounding and draining out water during initial stages of crop establishment. Further, majority of farmers opined that more price of weedicide and its failure in control of echinoclova and sedges are the major reasons for not adopting drum seeding technology by majority of farmers. Therefore, efforts are to be made to reduce the cost of weedicide (sofit) or to develop cheaper weedicides which effectively controls echinclova and sedges.

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