

Adoption of recommended cultivation practices in ginger (*Zingiber officinale* Rosc.) at Koraput District, Orissa

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Abstract

A study was conducted in Koraput District (Orissa) for determining the level of adoption and constraints in adoption of recommended cultivation techniques in ginger (*Zingiber officinale*) among farmers. The overall adoption level of improved cultivation techniques was low (44.1%) and the major constraints in their adoption was lack of technical guidance (39%), ignorance (38.4%) and high cost of inputs (36.2%).

Keywords: adoption, cultivation techniques, constraints, ginger, *Zingiber officinale*.

Ginger (*Zingiber officinale* Rosc.) is one of the highly remunerative spice crops in Koraput District (Orissa) and is extensively grown in hill blocks of the district. This crop is usually cultivated under rainfed conditions and the yields are generally low (67 q ha⁻¹). However, ginger cultivation in a scientific way can yield up to 148 q ha⁻¹ (OUAT 2005). The present study was conducted to know the extent of adoption of improved agrotechniques in ginger cultivation in this region and constraints in its adoption by the farmers.

Five adopted villages of Krishi Vigyan Kendra, Koraput (Orissa) namely, Tentuliguda, Malidoliamba, Dalaiguda, Challanput and Podagada were selected for the study that was conducted during 2003–04 and 2004–05. From each village 25 ginger

growers were randomly selected to assess the adoption level of improved agrotechniques and the constraints in the adoption of the same. The farmers were categorised into marginal (up to 1 ha), small (1–2 ha) and large (above 2 ha) on the basis of their total cultivated area. Eight major agronomic practices were taken into account for the study and they included, use of recommended high yielding varieties (HYV), raised bed planting system, use of recommended dose of fertilizers and organic manures, mulching, water and weed management, hoeing and earthing up, plant protection measures, rhizome harvesting and post-harvest operations. Nine questioned constraints were studied for adoption of the above mentioned eight agronomic practices of ginger for all the categories of farmers.

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Table 1. Adoption level of improved agro techniques of ginger by different categories of farmers in Koraput District, Orissa

Category of farmers	Adoption level (%)			Overall adoption level (%)
	Low (up to 45%)	Medium (46–55%)	High (above 55%)	
Marginal	89.0 (65)	9.6 (7)	1.4 (1)	39.5 (73)
Small	13.2 (5)	60.5 (23)	26.3 (10)	47.5 (38)
Large	7.0 (1)	35.7 (5)	57.1 (8)	58.5 (14)
Total	56.8 (71)	28.0 (35)	15.2 (19)	44.1 (125)

Number of farmers under each category in parenthesis.

Adoption level

The level of adoption of different improved practices of ginger cultivation were categorised into high (above 55%), medium (46–55%) and low (up to 45%). The average adoption level was observed to be 39.5%, 47.5% and 58.5% among marginal, small and large farmers, respectively. The overall adoption level of scientific ginger cultivation practices was 44.1%. The frequency distribution of all these categories had 56.8%, 28.0%, 15.2% for low, medium and high level of adoption of different improved agro practices

of ginger cultivation, respectively (Table 1).

Adoption of recommended practices

The adoption of recommended HYV among marginal farmers was very poor (20.2%) as compared to small (32.8%) and large (57.7%) categories. The same trend was observed in case of raised bed planting system. In case of use of recommended dose of fertilizers and organic manures and plant protection measures, the adoption level among large category farmers were 71.8% and 61.3% respectively, which was much higher than mar-

Table 2. Adoption of improved package of practices in ginger cultivation among farmers in Koraput District, Orissa

Practice	Category of farmers						Overall	
	Marginal		Small		Large		Adoption (%)	Rank
	Adoption (%)	Rank	Adoption (%)	Rank	Adoption (%)	Rank		
Recommended HYV	20.2	VIII	32.8	VII	57.7	V	28.2	VIII
Raised bed planting system	34.9	VI	30.3	VIII	68.5	II	37.3	VII
RDF and organic manuring	36.6	V	49.3	IV	71.8	I	44.4	IV
Mulching	55.5	I	59.6	II	64.8	III	57.8	I
Water and weed management	47.1	III	62.4	I	48.4	VII	51.9	III
Hoeing and earthing up	53.1	II	57.4	III	51.6	VI	54.3	II
Plant protection measures	30.4	VII	41.8	VI	61.3	IV	37.4	VI
Harvesting and post harvest operations	38.5	IV	45.7	V	43.4	VIII	41.3	V
Average adoption (%)	39.5		47.5		58.5		44.1	

HYV=high yielding variety; RDF=recommended dose of fertilizer.

Table 3. Constraints for the adoption of improved ginger cultivation practices among farmers in Koraput District, Orissa

Improved practices	Farmers' ignorance	Lack of technical guidance	High cost of agro-inputs	Lack of credit facilities	Labour intensive practices	Non availability of agro inputs	Drought	Susceptibility to diseases and pests	Lack of storage facilities
Recommended high yielding varieties	57	55	51	32	-	53	-	70	22
Raised bed planting	56	31	29	-	24	-	46	20	-
Recommended dose of fertilizer and organic manuring	48	49	58	52	31	49	31	18	-
Mulching	21	30	43	60	36	31	28	33	-
Hoeing and earthing up	43	66	40	46	45	18	6	8	-
Water and weed management	62	71	49	53	30	47	37	-	-
Plant protection measures	65	41	54	39	22	36	-	45	33
Harvesting and post-harvest operations	32	47	38	34	29	41	-	-	45
Total	384	390	362	316	217	275	148	194	100
Per cent	38.4	39	36.2	31.6	21.7	27.5	14.8	19.4	10
Rank	II	I	III	IV	VI	V	VIII	VII	IX

Values indicate number of farmers

ginal and small farmers. With regard to dry leaf and straw mulching, most of the farmers among all the categories adopted this technique. Hoeing and earthing up techniques were also observed as a popular technique among all categories of farmers. In case of water and weed management, the adoption level among marginal, small and large farmers was 47.1%, 62.4% and 48.4%, respectively. The adoption level of rhizome harvesting and post-harvest operations was 38.5%, 45.7% and 43.4% in marginal, small and large categories of farmers, respectively (Table 2).

Constraints

The major constraints in adoption of improved technologies by the respondents were lack of technical guidance (39%), followed by ignorance (38.4%) and high cost of agro-inputs (36.2%) (Table 3).

The study indicated that the overall extent of adoption of recommended package of practices of ginger cultivation was low (44.1%) and lack of technical guidance was a major constraint (39%), which could be one of the main reasons for low yield of ginger in this region.

Reference

Orissa University of Agriculture and Technology (OUAT) 2005 Final Report of TAR-IVLP under NATP in Eastern Ghat Highland Zone of the Rainfed Agroecosystem. Krishi Vigyan Kendra, Orissa University of Agriculture and Technology, Koraput, Orissa.