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Adoption level of farmers regarding the value addition on regional crops in Satna district of Madhya Pradesh

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Abstract

India's prominent exports encompass an array of products, ranging from fruit pulp, pickles, and chutneys to canned fruits and vegetables, concentrated pulps and juices, as well as dehydrated and frozen produce. This surge is propelled by heightened literacy, awareness, and income levels, which have collectively propelled the demand for processed vegetables. The growth and expansion of the fruits and vegetable processing sector hold paramount significance for India's overall economic advancement. This sector is evenly divided between organized and unorganized segments, with the organized sector commanding a 48% share. Notably, products like juices and concentrates packaged in tetra packs are predominantly crafted by the organized sector. Conversely, the unorganized sector concentrates on traditional processed items such as pickles, sauces, candies, and preserves. The investigation was conducted in Satna district (M.P.) to investigate the adoption level of value addition on major regional crops by the farmers of Satna district M.P. There are eight blocks in Satna district but Majhgawan, Kotar, Maihar, Amarpatan block purposively because having maximum number of farmers which are involved in value addition in regional crops. Five villages were selected by using simple random sampling. 30 farmers from each selected block will be selected using random sampling. Thus, total 120 respondents will be selected for the investigation. The data were collected by using personal interview method. The collected data were tabulated, analyzed and interpreted with the help of appropriated statistical tools. The knowledge and adoption level of value addition on major regional crops by the farmers was found positive and significant relationship between independent variable with some constraints reported by the farmers likewise Inadequate transportation to market followed by Inadequate storage facility Non-availability of skill-full labors.

Keywords: Value addition, adoption level, crops, expansion, development

Introduction

India stands as one of the globe's foremost contributors to the production of fruits and vegetables. Paradoxically, a substantial portion—approximately one-third—of this bounty succumbs to spoilage due to inadequacies in storage technologies, infrastructure, transportation, and distribution systems. The journey of food wastage traverses the entire supply chain, spanning from the initial stages of agricultural cultivation to the eventual consumption within households. In regions lacking abundant knowledge and income, the origins of food losses and waste can be primarily attributed to financial, managerial, and technical constraints. The challenges encompass facets such as the adoption of proficient harvesting techniques, the establishment of suitable storage and cooling solutions amid challenging climates, the development of infrastructure, the implementation of effective packaging strategies, and the evolution of resilient marketing systems.

Value addition refers to the process of transforming a product from its original state into a more valuable and durable form. Many natural resources hold inherent worth in their initial condition. To illustrate, consider field corn cultivated, harvested, and stored on a farm, later consumed by livestock on the same farm—this corn possesses value. Significantly, its value becomes augmented when fed to animals, leading to a transformation into animal protein or meat. The augmented worth of the modified product is termed added value, such as the conversion of wheat into flour through processing. Recognizing the activities that enhance value is pivotal for investing in research, processing, and marketing. Perishability characterizes fresh horticultural produce, with estimates suggesting substantial post-harvest losses of around 30-50% for fruits and vegetables. These losses stem from deficient preproduction and post-harvest management, as well as the absence of suitable processing and marketing infrastructure. These losses adversely impact farmers' income, consumer prices, and the nutritional quality of produce. Prices of seasonal horticultural crops experience drastic

fluctuations, with availability peaking at times when prices fail to benefit farmers. Conversely, some periods witness exorbitant pricing, making these commodities inaccessible to the average consumer. Furthermore, the inconsistent availability of fruits and vegetables results in inadequate supply in certain areas, even during times of surplus in other regions. Currently, a substantial disparity exists between the gross production and the actual availability of fruits and vegetables due to substantial post-harvest losses. The present study undertaken the following specific objective: To study the Adoption level of farmers of value addition in crops.

Material and Methods

The present investigation was conducted in four blocks of

Satna district, which was selected purposively because of having maximum number of farmers which are involved in value addition in regional crops and a list of farmers who involved in value addition 30 farmers selected from each block. Thus total 120 respondents will be selected purposively for further study. The primary data was collected by structured interview schedule which was prepared on the basis of objectives, presentation of the collected data was tabulated and presented in the form of table and it was analyzed with the help of appropriate statistical methods viz. percentage, mean, mean score, rank order etc.

Results and Discussion

The Adoption level of farmers of value addition in crops

Table 1: Distribution of farmers according to their practice wise Adoption level of value addition in crops by farmers

S. No.	Value addition practices in regional crops	Adoption level			Mean score	Rank
		No	Partial	Complete		
A Increase in nutritional value through value addition in crops						
1	Good techniques to preserve taste and nutritional value	50 (41.66)	30 (25.00)	40 (33.34)	1.91	III
2	Available no knowledge sugar content	40 (33.34)	38 (31.66)	42 (35.00)	2.01	I
3	Inhibits the growth of micro- organism e.g. molds, yeast and bacteria	29 (24.00)	60 (50.00)	31 (26.00)	2	II
Total mean score					1.97	Third
B Value addition through processing						
4	Cleaning and sorting	00 (00.00)	30 (25.00)	90 (75.00)	2.75	I
5	Harvesting at proper stage	22 (18.34)	40 (33.34)	58 (48.33)	2.30	III
6	Cleaning, grading, packing & packaging	15 (12.50)	38 (31.66)	67 (72.50)	2.43	II
Total mean score					2.26	First
C Value added products made by crops						
7	Potato – French fries, Fast food, Potato chips, Potato flakes	10 (08.34)	20 (16.66)	90 (75.00)	2.66	II
8	Tomato – purry, sauce, Ketchup, Chutney, and soup.	00 (00.00)	00 (00.00)	120 (100.00)	3	I
9	Green Leafy Vegetables – Dehydrated Leaf powder (curry leaf + coriander leaf), vegetable soup, pickles, chilli pickles, Garlic pickles, Vegetable soup (onions, carrot, beans, cabbage, tomato, spinach)	10 (08.34)	80 (66.66)	20 (16.66)	1.91	III
10	Other Vegetables products like Totti fruity from guard, Ready-to-use cluster bean, Vegetables halwa, Corn soup	18 (15.00)	32 (26.66)	70 (58.34)	1.85	IV
Total mean score					2.36	second

The study revealed that the Level of adoption of value addition in crops by farmers is depicted in the Table 1 it reveals that, about knowledge of sugar content majority (35.00%) of farmers had complete adoption and 33.34 per cent farmers had no adoption got rank I with mean score 2.01, followed by Inhibits the growth of micro- organism e.g. molds, yeast and bacteria 26.00 per cent farmers had complete and 24.00 per cent farmers had no adoption got rank II with mean score 2.00, and good techniques to preserve taste and nutritional value 41.66 per cent of farmers had no adoption while 33.34 per cent had complete adoption got rank III with mean score 1.91. So the adoption of Increase in nutritional value through value addition in crops having the mean score for this knowledge practices was 1.97 and got rank third.

In case of cleaning and sorting more than half of the farmers (75.00%) had complete adoption and 25.00 per cent of farmers had partial adoption got rank I with mean score 2.75, followed by cleaning, grading, packing & packaging 72.50 per cent of farmers had complete adoption and 12.50 per cent of farmers had no adoption got rank II with mean score 2.43,

and harvesting at proper stage 48.33 per cent of farmers had complete adoption and 18.34 per cent had no adoption got rank III with mean score 2.30. So the Adoption of value addition through processing had the mean score for this knowledge practices was 2.26 and got rank first. The similar work has found of Wakholi, Byoung, K. C., Changyeun, M. and Moon, S. K. (2015) [5].

In case of tomato – Tomato – purry, sauce, Ketchup, Chutney, and soup cent per cent (100.00%) of farmers had complete adoption got rank I with mean score 3, followed by potato – French fries, Fast food, Potato chips, Potato flakes more than half (75.00%) of farmers had complete adoption and 08.36 per cent of farmers had no adoption got rank II with mean score 2.66, green Leafy Vegetables – Green Leafy Vegetables – Dehydrated Leaf powder (curry leaf + coriander leaf), vegetable soup, pickles, chilli pickles, Garlic pickles, Vegetable soup (onions, carrot, beans, cabbage, tomato, spinach) 16.66 per cent of farmers had complete adoption and 08.33 percent of farmers had no adoption got rank III with mean score 1.91, and in case of other Vegetables products like

Totti fruity from guard, Ready-to-use cluster bean, Vegetables halwa, Corn soup 58.34 per cent of farmers had complete adoption and 15.00 per cent of farmers had no adoption got rank IV with mean score 1.85. So the adoption of value added

product made by crops having the mean score for this knowledge practices was 2.36 and got rank second. This conclusion is backed by the research of Sajeev, M. V. and Singha, A. K. (2010)^[4].

Table 2: Distribution of farmers according to their practice wise Adoption level of value addition in crops using other techniques

S. No.	Value addition practices in regional crops	Adoption level			Mean score	Rank
		No	Partial	Complete		
A	Value addition through storage of crops					
1	Preserve crop produce to consume in off season	14 (11.66)	38 (31.66)	68 (56.66)	2.45	II
2	Protect from sun and high temperature	08 (06.66)	32 (26.68)	80 (66.66)	2.60	I
3	Keep food in good condition	33 (27.50)	22 (18.22)	65 (54.16)	2.26	III
4	Room cooling : placing the crops in cold storage	10 (08.34)	35 (29.16)	75 (62.50)	1.70	IV
	Total mean score				2.25	second
B	Value addition through machineries and equipments					
5	Farm level fruit and vegetable washing machine	12 (10.00)	29 (24.16)	79 (65.83)	2.55	II
6	Tomato/potato grader and washer	15 (12.50)	29 (24.16)	76 (63.34)	2.50	III
7	Solar drier	00 (00.00)	00 (00.00)	120 (100.00)	3	I
8	Mango and tomato grader	20 (16.66)	35 (29.16)	65 (54.16)	2.37	IV
	Total mean score				2.60	First

Level of adoption of value addition in crops by farmers is depicted in the Table 2 it reveals that, in case of the Protect from sun and high temperature majority (66.66%) of farmers had complete adoption and only 06.66 per cent had no adoption got rank I with mean score 2.60, followed by preserve crop produce to consume in off season 56.66 per cent had complete adoption and 11.66 per cent of farmers had no adoption got rank II with mean score 2.45 and Keep food in good condition 54.16 per cent of farmers had complete adoption and 27.50 per cent of farmers had no adoption got rank III with mean score 2.26 while Room cooling : placing the crops in cold storage 62.50 per cent of farmers had complete adoption and 08.34 per cent of farmers had no adoption got rank IV with mean score 1.70. So the adoption of value addition through storage of crops having the mean score for this knowledge practices was 2.25 and got rank second. The similar work has found of Rais, M. and Sheoran,

A. (2015)^[3].

In case of solar driers cent per cent (100.00%) of farmers had complete adoption got rank I with mean score 3, followed by farm level fruit and vegetable washing machine majority (65.83%) of farmers had complete adoption and only 10.00 per cent of farmers had no adoption got rank II with mean score 2.55, tomato/potato grader and washer 63.34 per cent of farmers had complete adoption and 12.50 per cent of farmers had no adoption got rank III with mean score 2.50, and mango and tomato grader 54.16 per cent of farmers had complete adoption and 16.66 per cent of farmers had no adoption got rank IV with mean score 2.37. So the adoption of value addition through machineries and equipments having the mean score for this knowledge practices was 2.60 and got rank first. The work of Kumar, R., Ahmad, A. and Dular, R. K. (2015)^[1] is in coherence of present study.

Table 3: Extent of adoption of farmers regarding value addition of regional crops

S. No.	Categories	Frequency	Percentage
1	Low (up to 18)	34	28.33
2	Medium (19 to 36)	66	55.00
3	High (above 36)	20	16.64
	Total	120	100.00

It was observed from Table 3 that out of total farmers, 55.00 had medium adoption of value addition of regional crops, 28.33 per cent had low adoption and only 16.64 per cent farmers had high adoption of value addition of regional crops. Thus, it can be concluded that majority of (55.00%) farmers had medium adoption of value addition of regional crops.

Conclusion

Regarding the adoption of value addition by the farmers that the higher percentage 55.00 had medium adoption of value addition of regional crops, 28.33 per cent had low adoption

and only 16.64 per cent farmers had high adoption of value addition of regional crops. Thus, it can be concluded that majority of (55.00%) farmers had medium adoption of value addition of regional crops. Adoption level of increase in nutritional value through value addition in crops having the mean score for this knowledge practices was 1.97 in which no knowledge sugar content had highest mean score 2.01. In adoption level of value addition through processing having the mean score for this knowledge practices was 2.49 in which Cleaning and sorting had highest mean score 2.75. Adoption level of value added product made by crops having

the mean score for this knowledge practices was 2.36 in which Tomato – Tomato paste, Tomato sauce, Ketchup, Chutney, Tomato soup mix, Dehydrated tomato with highest mean score 3, followed by Adoption level of value addition through machineries and equipments having the mean score for this knowledge practices was 2.60 in which Solar drier with highest mean score. Adoption of value addition through storage of crops having the mean score for this knowledge practices was 2.43 in which protect from sun and high temperature had highest mean score 2.60.

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