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An economics analysis marketing of wheat crop in block Amnour district saran (Chhapra), Bihar

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Abstract
This study examines the marketing dynamics and economic impact of wheat production in Amnour Block, Saran District, Bihar, with an emphasis on the regulatory framework, historical background, and current marketing channels. It delves into the intricate web of producer, middleman, and consumer interactions, highlighting the disparities in profit sharing across different marketing channels. The research focuses on the marketable and marketed surplus of wheat, identifying the various challenges faced by farmers, such as infrastructural inadequacies, regulatory barriers, and financial constraints. The study concludes with recommendations for improving market access and profitability for small and marginal farmers by reducing the layers of middlemen and enhancing direct market linkages.

Keywords: Wheat marketing, economic analysis, agricultural economics, market regulation, producer surplus, marketing channels, rural development, agricultural policy, food security

Introduction
It was the wheat, which played an important role during green revolution (1966-1967). The Indian Council of Agricultural Research (ICAR-1929) has been in the fore front in guiding and co-ordination wheat developments with the adoption of H.Y.V. (High Yielding Variety). Programme, the food grain production in India increased from more 50.8 million tonne during 1950-51 to 288 million tonne in 2021-22.

Table 1: The nutrient composition of wheat (per 100 gm) *i.e.*

S. No.	Nutrient	in gm	S. No.	Nutrient	in gm
1.	Protein	12 g,	5.	Mineral water	1.75 gm
2	Carbohydrates	70.8 gm	6.	Calcium	1.5 gm
3.	Fat	1.5 gm	7.	Phosphorus	4.30 mg
4.	Crude fiber	1.1 gm	8.	Energy	346 k.cal

Wheat flour is the first addition though the value added is low. Wheat flour serve as the raw material for processed foods such as biscuit, cakes and several other products. Marketing is a part of productive process and marketing costs form a part of overall costs of the production. The producer, the middleman and the consumer looks upon the marketing process from his own individual point of view. The producer is primarily concerned with selling his products at such remunerative prices would enable him to continue to produce or stay in his business. The ideal marketing system is one that ensures the long run welfare of society.
In India the history of regulation of markets dates to 1897 when Berar act was passed for cotton and grain markets. The Indian cotton committee appointed by the government of india recommended regulation of cotton on the line of Berar markets. In presence to this recommendation, the government of Bombay was the first to in act. Bombay cotton market act, 1927. The Royal Commission on Agriculture, in its report submitted in 1926, besides on overall survey of Indian agriculture recommended the establishment of regulated markets on the pattern as modified by the Bombay cotton market Act 1927. In 1935 the government of India established the office of the agriculture Marketing Adviser (Directorate of Marketing and Inspection) under the ministry of food and agriculture to look into the problems of the marketing of agricultural produce.
An efficient and reliable marketing system by itself can stimulate increase in agricultural production while lack of it can lesion, subdue and shrink the impact of any number of production programmers, administration effort and volume of investment.

It is such an important role of agricultural marketing that seem to have promoted the Government of India to place particular emphasis of agriculture marketing in the post-independence period in general and after the third five-year plan in particular.

During the first and second five-year plans, agricultural marketing did not receive much important but during third five-year plan, a number of marketing development programmes were initiated as co-operative marketing, market news service and warehousing. The fourth five year plan laid greater emphasis on development if infrastructural facilities in wholesale markets. The fifth and sixth five year plan further accelerated, the market development programmes as well as grading and standardization programme. During the seventh and eight five year plan the progress of agricultural marketing programme continued with some Para. The implementation of these programmes had a significant bearing on agricultural marketing practices and perspective in the country. The importance of marketing has also been emphasized during 11th five year plan, since food security was the main concerned.

The farmer is the back-bone of Indian economy. Historically he did not get a fair deal when he visited the markets to sell his produce. The exploitation of the toiling farmer and the growing rural indebtedness in india had attracted the attention of the government and various commissions and committees had urged the improvement of the marketing system particularly the need for public warehousing to regulate agricultural marketing and reduce burden of rural indebtedness. Food grain marketing is very important in India. It provides cash and barter income for Indian farmers a lively hood for thousands of grain traders and processors and their employees and food for India's consumers. It in estimates that India's rural consumer spend more than urban consumers house hold budget on food grains.

Food grain marketing is of such importance in India that at various levels of government have become heavily involved in the operation and regulation. The indiangovernment and its agencies own and considerable foodgrains storage and processing facilities. They regulate trucking and market transactions and provide market yards, market information and grading services. In addition, various level of government in india influence prices by price fixing, rationing, food zones and direct procurements and distribution.

There are at least two necessary conditions for a food grain marketing system to exist. One is a demand for food grains by some element in the population and the other is a supply of food grains from food grains producer or through imports. because over all supply and demand conditions for food grains so basic to an appreciation of the scope, importance and problems of food grain marketing in India.

Research Methodology

Only those markets, where the farmers of selected villages used to sale their produce, were considered for the present enquiry. The producers were found to sale their produce regulated market Saran (Chhapra) was selected purposively.

Selection of the producers

For working out marketable surplus and marketed surplus marketing and marketing margins in the selected market. 10 producers for each market was selected randomly irrespective of their size groups, from 50 selected farmers, thus, in all 10 producers were selected randomly.

Selection of market functionaries

All the important market functionaries of the two selected markets were interviewed in respect to the marketing of the crops. The marketing functionaries which were interviewed are given as below-

1. Commission agents (Arhatiya)
2. Brokers (Dalals)
3. Weight-men (Toulas)
4. Palledars

Marketable Surplus

It is the residual product available with the farmer after meeting his family and farm needs.

$$MS = \frac{\text{Total production quantity retained by famer}}{\text{Total production}} \text{ x } 100$$

Area and production of wheat per hectare

The area and per hectare yield of wheat under different size of holdings was worked out an the results are presented in Table 7.1 reveals that the percentage of area under wheat to cultivated area was the highest on big size of holding being 41.63 percent followed by small and marginal farms being 39.62 percent and 37.80 percent with an average of 40.10 percent on the sample farms. Total production of wheat in case of big farms 55.49 percent was high in respect to small farm 25.86 percent and marginal farms 12.24 percent with an average yield of 31.19 percent.

Results and Discussions

Total quantity of wheat, quantity retained for seed, quantity consumed by the family, quantity given as wages and other use.

Table 1: Quantity given as wages and other use.

S. No.	Particulars	Size groups of farm (m ha)			Overall Average
		Marginal (0-1)	Small (1-2)	Medium (2 & above)	
1.	Total quantity of wheat (qt)	12.24	25.96	55.49	31.19
2.	Quantity retained for seed (qt)	0.60	1.05	2.32	1.32
3.	Quantity consume by family (qt)	5.80	11.15	17.85	11.63
4.	Quantity given as wages (qt)	0.95	2.20	4.36	2.50
5.	Other	0.60	1.35	2.90	1.61
6.	Marketable surplus (qt)	4.29	10.21	28.06	14.18
7.	Marketed surplus (qt)	4.00	8.21	20.50	10.90

Marketing surplus and marketed surplus of wheat

The marketable surplus is the surplus over total produce after making a deduction towards quantity retained for seed purposes, utilized for family consumption, quantity paid as

wages and other uses and marketed surplus I that quantity of the produce which the producer farmer actually sells in the market, irrespective of his requirements for family consumption, farm needs and other payments. The marketed surplus may be more, less or equal to the marketable surplus. As such marketable or marketable surplus for different categories of different farms have been worked out. The indicates that, quantum of marketable surplus of wheat showed an increasing trend with the increase in the size of farms being 4.29, 10.29 and 28.06 quintals on marginal, small and medium farms, respectively.

The average marketable surplus came to 14.18 quintals and quantum of marketed surplus of wheat also slowed an increasing trend with the increase in the size of terms being 4.00, 8.71 and 20.50 quintals on marginal, small and medium farms, respectively the average market surplus to 11.07 quintals.

Marketable and marketed surplus as percentage to production

Marketable surplus and marketed surplus as percentage to production for different categories of different farm have been worked out.

Table 2: Total production, marketable surplus, marketed surplus and as percentage to production

S. No.	Particulars	Size groups of farms (m ha)			Overall Average
		Marginal (0-1)	Small (1-2)	Medium (2 & above)	
1.	Total production of wheat (qt)	12.24	25.86	55.49	31.19
2.	Marketable surplus	4.29	10.21	28.06	14.18
3.	Marketed surplus (qt)	4.00	8.71	20.50	11.07
4.	Marketable surplus as percentage to production	35.04	39.48	50.56	41.69
5.	Marketed surplus as percentage to production	32.67	33.68	36.94	34.43

Indicates that, the marketable and marketed surplus with highest medium sized holdings being 50.56 percent and 36.91 percent respectively followed by small sized 39.48 percent and 33.68 percent respectively followed by marginal sized 15.44 percent and 32.67 percent marketable and marketed surplus of wheat. The average marketable and ked surplus of wheat worked out 14.18 quintals 11.07 quintals and its stage to total production of wheat was calculated as 41.69 percent and 34.43 percent per farm, respectively.

Marketing Cost and Marketing Margin

The producer's share in consumer's price largely depends upon the method of sale and the channels through which the produce reaches the ultimate consumer's. Other things remaining the same, the larger the chain of intermediaries between producers and seller, the lesser was the share of the producer, because a major part of the profit was shared by the intermediaries. Due to forced sale and having poor storage facilities, the producers generally as a small share as profit for their produce.

In this chapter an attempt has been made to study the different channels through which producers share in consumers price, marketing cost of wheat ad the marketing margins of middlemen like wholesalers and retailers have been worked out. In the study area, the following marketing channels of what were found under operation.

Channel I: Producer-Consumer
Cannel II: Producer-Village Trader-Wholesaler retailer-Consumer
Channel III: Producer-Wholesaler-Retailer-Consumer
Channel IV: Producer-Govt. agency-Fair price shop-Consumer

Channel I: Producer-Consumer

This channel is better than all the marketing channels because in this channel cultivar directly sells his produce to the consumers at district level by transporting and get the maximum share of his produce. But this may be done on a very limited scale due to absence of transport facilities. In a village market almost all are farmers/producer and only a few are labours who needs to purchase wheat for family consumption.

Channel II: Producers-Villages Trader-Wholesaler-Retailer-consumer

In this channel village trader goes from village to village collecting the produce from the farmer at comparatively low price or price which is close to the primary market. These merchants then bring the produce in a wholesale market and sell to the wholesaler after taking their profit margin, which in term reached to consumer through retailers.

Channel III: Producer-Wholesaler-Retailers-Consumer

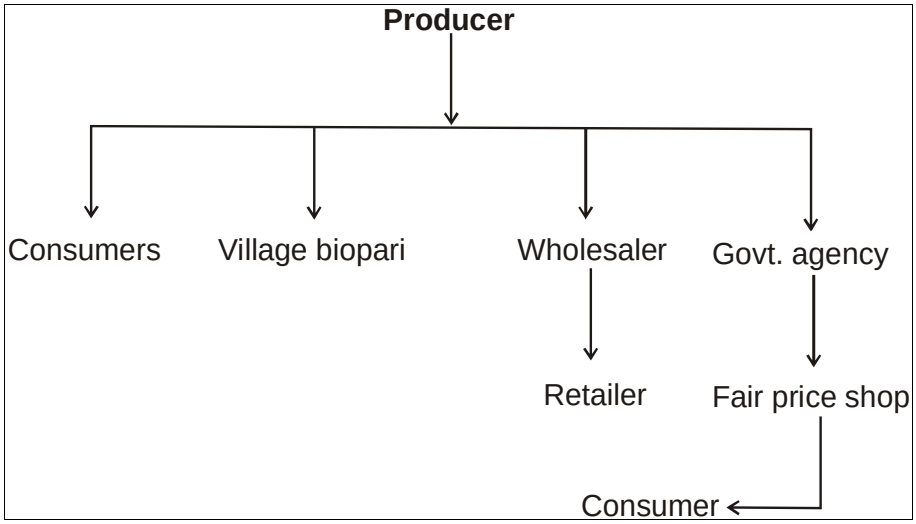
In this channel some big farmers directly sell their produce to wholesaler, who sells to retailers in town and cities and in last to consumes.

Channel IV: Producer-Govt. agency-fair price shop-Consumer

The channel IV, where wheat was purchased by overnment through its own agency i.e. FCI and co-operatives. All the marketing expenses incurred in process of marketing were made by government. This wheat was made available to consumers at the same price which is paid by the Government to the producers and some time it was supplied even at lower rate for the welfare of men. Hence in this channel we do not make attempt to work out the share of producer's in consumer's price.

Marketing cost

shows that marketing cost paid by producer intermediaries different channel and margins of intermediaries in per quintal.



Marketing channels of wheat

Table 3: Details of marketing charges of wheat under different marketing channels

S. No.	Particulars	Marketing cost under different channel		
		Channel-I	Channel-II	Channel-III
A.	**Charges paid by producer**			
1	Transportation			13.50
2	Weighing			2.00
3	Loading and unloading			4.00
4	Other			1.00
	Sub total	0.00	0.00	20.50
B.	**Charge paid by village trades**			
1	Transportation		13.00	
2	Weighing		2.00	
3	Loading and unloading		4.00	
4	Other		3.00	
	Sub total		22.00	
C.	**Charge paid by wholesaler**			
1	Transportation		10	10.50
2	Mandi fees		1% of value (12.70)	1% of value (13.10)
3	Weighing		2.00	2.00
4	Loading and unloading		4.00	4.00
5	Warehouse charge		4.50	4.50
6	Bardana		30	30
	Sub total	0.00	63.70	64.10
D.	**Charges paid by retailer**			
1	Transportation		8.00	8.00
2	Loading and unloading		4.00	4.00
3	Other		1.00	1.00
	Sub total		13	13
	Gross total marketing charges (A+B+C+D)		98.70	97.60

The shows that total marketing cost was the highest in channel II (Rs. 98.70) because of its length and it was followed by channel III (Rs. 97.60) and channel I (Rs. 0.00) respectively. There was no margin in channel I because producer sell the produce directly to consumer. For margins retailers margin was the highest.

Producers share in consumer's price

Producer's share in consumers price and percentage distribution of different costs and margins in wheat marketing .

Table 4: Price spread in wheat under different channels (Rs. per quintal and percentage)

S. No.	Particular	Channel-I		Channel-II		Channel-III	
		Value Rs.	%	Value Rs.	%	Value Rs.	%
A.	**Producer**						
1.	Sale price	1995		1970		2010	
2.	Marketing cost					1310	
3.	Net price received by producer	1995	100	1970	89.21	2010	91.35
B.	**Village trader**						
1.	Purchase price of village trader			1970			
2.	Marketing charges			22.00	1.02	20.50	1.00
3.	Margin			47.00	2.19		
4.	Sale price			2039		2030.50	
C.	**Wholesaler**						
1.	Purchase price of wholesaler			2039		2030.50	
2.	Marketing charges			63.70	2.97	64.10	3.00
3.	Margin			41.00	1.91	41.00	1.91
4.	Sale price			2143.70		2135.60	
D.	**Retailer**						
1.	Retailer price of retailer			2143.70		2135.60	
2.	Marketing charges			13.00	0.59	13.00	0.59
3.	Margin			51.50	2.33	51.50	2.34
4.	Sale price of retailer or purchase of consumer	1995	100	2208.20	100	2200.10	100
	Total margin			139.50		92.50	
	Producer share in consumer price (in per cent)	100		89.21		91.35	

The shows that producers share in consumers price was highest in channel-I followed by channel-III (91.35) and channel-II (89.21), respectively.

It was, because of existence of more middlemen in channel-II leading to more marketing cost being Rs. 98.70 in channel-II and Rs. 97.60 in channel-III.

From the above finding it may be concluded that produces share in consumers price goes on decreasing with the increase in number of middlemen a marketing channel. It was mainly due to lower sale price received by the farmer and higher margins of profit charged by market middlemen.

Marketing

Some important constraints in the marketing of wheat are listed below:

i) **Low marketable surplus**– Most of the small farmers have a very low marketable surplus.

ii) **Payment by Cheque** – The Govt. agency do not make payment in cash instead they pay it in the farm of cheque. Cheque takes as long length of time to encash.

iii) **Location:** The main problem with majority of the farmers was the location of mandi yards at a long distance from their village. The construction of mandi yards in confined to tehsil or district headquarters which was not accessible to majority of the farmers living in for flung Village of the districts. So the farmers did not prefer to come at the mandi yards for selling their produce from a long distance.

iv) **Publicity:** Through the farmers were of the regulated markets but they were ignorant about the benefits and functions of Regulated Mandies and its committees. The farmers were also not aware of the information's regarding prices and arrivals in mandies.

v) **Supervisions and vigilance:** The farmers who went to market yard felt that the officials in the market yard were not keen on the transactions in the yard; as a result their faith in regulated mandies was not so firm.

vi) **Transaction:** the business is confirmed only to a few fixed hours on working days. So the farmers coming from for of places find difficulty in reaching the market yard in time. As most of the farmers are ignorant and illiterate, it was difficult for them to find out the exact and days and hours of transactions. This created problems and discouraged the farmers to hours of transaction. This created problems and discouraged the farmers to bring the produce in the mandies.

vii) **Lack of grading the standardization:** Regulated markets also lack grading and standardization facilities. It the absence of proper grades and standards, farmers were faced by the middleman to sell their produce at lower price. The middleman also used to take sample from the farmers bags without certain limit, which was not considered just in views of producers, resulting in the reduction of producer's share.

viii) **Lack of storage facilities:** The regulated mandies under study lacked storage facilities. The farmers who failed to sell their produce during the day of their arrival felt insecure of their produce in market yard. They also did not have confidence in keeping the produce in were- houses of the mandies, which was seldom available for all the farmers. These facts kept the farmers away from the regulated mandies and farmers did not prefer to sell their produce through regulated mandies.

ix) **Higher marketing cost:** Small and marginal farmers were of the opinion that marketing of the produce through regulated mandies was uneconomical to them because of high transportation cost. On one hand and very low marketable surplus with them on the other. So they preferred to sell their produce in the village markets rather than bringing it to the regulated mandies.

x) **Lack of input centers:** Provision of input centers for farmers benefit was considered as one of the main task in the mandi area under mandi Act. But it was noted that none of the regulated markets could provide these facilities at mandi yards.

xi) **Forced sale:** The village money landers, village merchants and traders use to make advances to the producers/farmers for meeting out their financial needs in respect marriages, purchase of inputs and other

necessities, under some definite terms. Under these conditions the producers were bond to sell their produce just after harvest to these agencies from whom they have taken money in advance. The farmers also sell their produce just after harvest in local markets to meet out their day to day requirements. The forced sale regulated in low prices and low arrivals in regulated mandies.

xii) **Lack of infrastructural facilities:** Regulated mandies under study also lacked infrastructural facilities like-mandi yard, road link with hinter land village, poor transport facilities and communication. It was also observed that the farmers did not enjoy processing facilities like Rice hullers, Oil machines etc. In rural areas. So they were bound to sell their produce as such.

xiii) The pricing policy play a major role on the extent of area put to wheat sand their production. Non fixation support price in time compels the farmers to switch over to a more remunerative crop.

Review of Literature

Alam *et al.* (2014) [1] obtained that the different tillage practices from 2009 to2010 were significantly affected (P0.05) to the wheat yield. In deep tillage, the highest grain yield was found (4.50 and 4.46 tha^{-1} for 2009 and 2010, respectively) followed by (4.22 and 4.00 tha^{-1} for 2009 and 2010, respectively) in conventional tillage. In zero tillage the lowest grain yield (2.76 and 3.00 tha^{-1} for 2009 and 2010, respectively) was recorded. The highest straw yield (6.00 and 5.92 tha^{-1} for 2009and 2010, respectively) was obtained in deep tillage followed by (5.50 and 5.80tha^{-1} for 2009 and 2010, respectively) in conventional tillage and (5.10 and 4.60tha^{-1} for 2009 and 2010, respectively) in minimum tillage. In zero tillage minimum straw was also obtained. The wheat grain yield was not significantly varied (P0.05) among the tillage practices during the years 2011 and 2012. The wheat grain yield was recorded from 3.53 to 4.13 tha^{-1} during 2011 and from 3.69 to 4.11 tha^{-1} during 2012. Among different tillage, practices deep tillage showed the highest yield and the yield gap was very minimal (negligible) after four years. A similar trend was found for straw yields.

Usman *et al.* (2014) [2] explored the effect of conventional tillage straw burnt with five nitrogen rates, i.e., 0, 100, 150, 200, and 250 kg ha^{-1} and six tillage methods i.e. zero tillage straw retained, zero tillage straw burnt, reduced tillage straw incorporated including tiller and rotavator, reduced tillage straw burnt, conventional tillage straw incorporated including disc plow, tiller, rotavator, and leveling operations on wheat yield during a field experiment. Among different tillage methods, average values for tillage showed that zero tillage straw retained produced the highest number of spikes m^{-2}. Though, higher grains/spike, test weight, and grain yield were recorded in tillage methods with either straw retained/incorporated as compared to tillage methods with straw burnt. There was accountant yield response observed on tillage in all years and also in mean over years.

Bhatt and Kukal (2016) [3] obtained that in zero tilled wheat plots the wheat biomass during 2012–13 was marginally lower than that in conventional-tilled wheat plots till 110 DAS then after the biomass was recorded higher in zero tilled wheat plots than in the conventional-tilled wheat plots. After 131 DAS it was 11%higher and the difference decreased up to 6% at 156 DAS. The wheat biomass shows the similar result in zero tilled wheat and in conventional-tilled wheat plots through out the crop season during 2013–14. During both the years the tiller density of wheat was initially higher in conventional-tilled wheat plots than in zero tilled wheat plots, but during the later growth stages it was similar with respect to tillage in wheat and rice and rice establishment method. During both the years of study the leaf area index of wheat was higher in conventional-tilled wheat than in zero tilled wheat plots at all the crop stages. In case of wheat the yield attributes *viz*. grains per panicle, average grain weight and harvest index were not affected significantly by tillage. During both the years of study the grain yield of wheat was similar in conventional-tilled wheat and in zero tilled wheat plots.

Gupta *et al.* (2016) [4] observed that there were significant in teractions between wheat tillage and rice residue treatments on tiller density and biomass on several sampling dates during the first two years, and on tiller density in the third year. But there were no significant 3-factor interactions or significant rice tillage effects on wheat tiller density and biomass at any stage in any year. Although there was no significant effect of tillage or interaction with rice residue mulching on wheat grain yields in the initial two years, in the third year, the yield of conventionally tilled wheat (6.0 t ha^{-1}) was significantly higher than the yield of zero tilled wheat (5.5 t ha^{-1}). The yield of wheat shows a consistently-decreasing trend over the three years, from 7.7 to 6.3 to 5.8 t ha^{-1} under the conventional tillage for both crops with no rice straw mulch (in the control system) due to seasonal weather differences. Although, growth of non-mulched zero tilled wheat was inferior to that of mulched zero tilled wheat, and that of conventionally tilled wheat with and without mulch, regardless of tillage for rice, but there was no significant effect on wheat grain yield. Wheat crop development and the time of irrigation to varying degrees were delayed by mulch and the amount of irrigation was reduced by 50–100 mm in two of the three years.

Punia *et al.* (2016) [5] observed that among the treatments grain yield of wheat varied significantly every year except Rabi 2003-04 when at transplanting time rains were very good. Under minimum tilled rice maximum grain yield (4.98, 4.87and 5.45 t/ha) of wheat was obtained in 2004-05, 2005-06, and 2007-08, during these cond and third years followed by the zero-tilled wheat treatment which was significantly higher over the conventional tilled rice-wheat system.

Alam *et al.* (2014) [1] found that tillage practices were significantly (P< 0.05) influenced the grain and straw yields of wheat except 2012. Maximum grain yields were recorded in deep tillage using a chisel plough during 2009 i.e. 4.7 tha^{-1} during2010 i.e. 4.7 tha^{-1}, during 2011 i.e. 4.5 tha^{-1} and during 2012 i.e. 4.5 tha^{-1}. Cropping systems with deep tillage using a chisel plough produced the highest yield, while ,zero tillage always produced the lowest wheat yield, and conventional tillage usinga rotary tiller always remained in between.

Samal *et al.* (2017) [6] estimated the sustainability of the systems with long term field experiment during 2009–2016 with four cropping system *viz*. conservation agriculture, crop intensification and diversified cropping as prevailing technology aiming to assess i.e. conventional till puddled transplanted rice, conventional till wheat, conventional till puddled transplanted rice/machine transplanted non puddle rice with residue- zero till wheat with residue conventional

till mung bean with residue, zero till direct seeded rice with residue zero till wheat with residue-zero till cowpea/zero till mung bean with residue and non-puddle transplanted rice/zero till direct seeded rice with residue-conventional till potato and maize intercrop/zero till mustard with residue-zero till cowpea/zero till maize with residue. In a single year and mean of years under zero till direct seeded rice with residue-zero till wheat with residue-zero till cowpea/zero till mung bean with residue wheat grain yield was significantly enhanced. Conventional till puddled transplanted rice-conventional till wheat (4.3±0.31 Mg ha^{-1}) and non puddle transplanted rice/zero till direct seeded rice with residue-conventional till potato and maize intercrop/zero till mustard with residue-zero till cowpea/zero tillmaize with residue (4.5±0.23 Mg ha^{-1}), which were statistically at par. Besides these, conventional till puddled transplanted rice/machine transplanted non puddlerice with residue- zero till wheat with residue- conventional till mung bean wither sidue (4.8±0.18 Mg ha^{-1}) showed significant higher mean wheat grain yield.

Kumar *et al.* (2019) [7] noticed that there was a significant effect of the tillage and crop establishment methods on the yield attribute components resulting in an increase in wheat grain yield. The yield attributes like effective tillers, number of grains earhead, spike length, and test weight of wheat, were significantly higher under zero-till direct seeded rice with residue followed by zero till wheat with residue treatment in comparison with the practice of conventional tillage though, yield attributes were at par under zero-till direct seeded rice with residue followed by zero till wheat with residue and zero-till wheat with residue with partial residues etention treatments, except the number of effective tillers, was also at par with the transplanted rice after rotavator puddling followed by rotary till wheat treatment.

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