

KNOWLEDGE OF AGRI INPUT DEALERS REGARDING IMPROVED TOMATO PRODUCTION TECHNOLOGY

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ABSTRACT

The study evaluated cooperative and private agri-input dealers' understanding of improved tomato production technology. The information was imperturbable from 240 agri-input dealers in the Jaipur and Tonk districts of Rajasthan. It was observed that the maximum number of cooperative agri-input dealers (43.33%) belong to the medium knowledge level. In contrast, 55.83 percent of private agri-input dealers had a high knowledge level regarding improved Tomato production technology. Also, it was described that there was a meaningful variation in the knowledge level of cooperative & private agri-input dealers except fertilizer management.

Keywords: cooperative, private, agri-input dealers, Tomato production technology

INTRODUCTION

Agri-input dealers are companies that supply farmers with agricultural farm products, including but not limited to seeds, fertilizers, pesticides, and other supplies. These dealers frequently collaborate with manufacturers or distributors to acquire their products, and they may run their businesses independently or as a part of a bigger network (Jadav et al., 2024; Saikia et al., 2024). In order to maximize yields and reduce their negative effects on the environment, they usually assist farmers in choosing the right inputs for their particular crops and environmental circumstances (Patel et al., 2023; Singh et al., 2023; Panke et al., 2023). In the agricultural supply chain, agri-input dealers are crucial because they make sure farmers have access to the tools they need to succeed (Yeragorla et al., 2023).

Studies on technological advancements have shown that input sellers are more likely to contact farmers than people from other sources. It is the farming community's second-most important source of agricultural messages, behind progressive farmers. It has a vast network of over 282000 agri input dealers in rural areas across the nation. Consequently, among input merchants, agricultural development holds a prominent role in the field. (Chandra Shekhar, 2007). An essential conduit between manufacturers and farmers is input dealers. Therefore, it is his or her duty to spread the newest agricultural technology all the way up to the ground level, particularly in the free market and WTO eras. (Khose, 2004)

OBJECTIVES

(1) To assess the knowledge of cooperative and private agri

input dealers regarding improved Tomato Production Technology.

(2) To compare the knowledge level regarding improved Tomato Production Technology between cooperative and private agri input dealers.

METHODOLOGY

The present investigation was organized in the Jaipur region of Rajasthan. Jaipur region comprises four districts: Jaipur, Ajmer, Dausa, and Tonk. Out of these, Jaipur and Tonk districts were selected purposely based on a maximum number of input dealers in equivalence to other districts of the Jaipur region. Jaipur and Tonk districts comprised of 21 and 7 tehsils, respectively. Out of these, six tehsils were selected proportionately with random allocation using simple random sampling. In this way, five tehsils from Jaipur district viz Chomu, Sahpura, Kotputli, Amber and Kishangarh Renwal and one tehsil from Tonk district viz Malpura were selected for the investigation. 20 Gram Panchayats from each tehsil were chosen randomly for the study by using a simple random sampling method. Each gram panchayat selected one private and one cooperative agri input dealer. In this way, 120 cooperatives and 120 privates were selected. Thus, the total sample was comprised of 240 agri-input dealers. A knowledge test was developed to investigate the knowledge of the agri input dealers regarding improved tomato production technology. Statistical analyses, including frequency, percentages, and z-tests, were employed to compare the knowledge levels of agri-input dealers regarding improved Tomato production technology. This rigorous methodology ensures a scientifically robust and insightful evaluation of the knowledge levels of agri-input dealers.

RESULTS AND DISCUSSION

Knowledge of cooperative and private agri input dealers regarding improved Tomato production technology

Table 1 : Distribution of Cooperative and Private Agri Input dealers according to their knowledge level (n=240)

Sr. No.	Category	Cooperative Agri Input Dealers (n ₁ =120)		Private Agri Input Dealers (n ₂ =120)	
		F	%	F	%
1	Low (up to 49.67 scores)	39	32.50	15	12.50
2	Medium (from 49.68 to 62.33 scores)	52	43.33	38	31.67
3	High (above 61.33 scores)	29	24.17	67	55.83

F =Frequency % =Percentage

The data displayed in Table 1 revealed that 43.33 percent of cooperative agri-input dealers had medium knowledge, whereas 32.50 percent and 24.17 percent had low and high knowledge levels regarding improved Tomato production technology, respectively.

The observations demonstrated in Table 1 showed that 55.83 percent of private agri-input dealers had high knowledge, whereas 31.67 percent and 12.50 percent of private agri-input dealers had medium and low knowledge levels regarding improved Tomato production technology, respectively.

The present conclusions are similar to the Khatri

et al. (2018), Banerjee *et al.* (2022), Meena *et al.* (2023), Mrosso *et al.* (2023), Kumar *et al.* (2022), Meena and Badhala^a (2024) and Meena and Badhala^b (2024)

Knowledge level of cooperative and private agri input dealers regarding improved production technology of Tomato crop in terms of MPS

The knowledge of cooperative and private agri input dealers with regard to a recommended package of practices regarding improved Tomato production technology was measured in terms of MPS. seven parameters were included to assess the knowledge of agri-input dealers, as given in Table 2

Table 2 : Knowledge of Cooperative and Private Agri Input dealers regarding improved Tomato production technology in terms of MPS (n=240)

Sr. No.	Package of practices	Cooperative Agri Input Dealers (n ₁ =120)		Private Agri Input Dealers (n ₂ =120)	
		MPS	Rank	MPS	Rank
1	Improved Varieties	84.75	2	91.00	2
2	Seed Treatment	74.33	6	80.33	5
3	Time of Sowing	89.75	1	93.00	1
4	Seed Rate and Recommended Spacing	74.64	5	80.95	4
5	Fertilizer Management	74.92	4	76.29	6
6	Weed Management	78.89	3	89.44	3
7	Plant Protection Measures	63.67	7	73.06	7
Overall		77.28		83.44	

MPS= Mean Percent Score * *= Significant at 1% level $\rho = 0.89^{**}$ $t = 4.4$

The information in Table 2 shows that most cooperative agri input dealers commanded high knowledge about "Time of sowing" with 89.75 MPS; hence, it was 1st ranked. The second highest knowledge of the cooperative

agri input dealers was towards "Improved Varieties" with 84.75 MPS, respectively. This was followed by "Weed Management" and "Fertilizer Management," ranked third and fourth with MPS 78.89 and 74.92, respectively.

The table further shows that practices like “Seed Rate & Recommended spacing” and “Seed Treatment” were slightly known by the cooperative agri input dealers to the extent of MPS 74.64 and 74.33. Thus, they ranked fifth and sixth, respectively. In the use of “Plant Protection Measure”, was possessed the slightest Knowledge, with 63.67 MPS and was ranked seventh in positions.

Further, it was noticeably found that private agri input dealers possessed high knowledge about “Time of Sowing” with 93.00 MPS; hence, it was 1st ranked. The second highest knowledge of the private agri input dealers was towards “Improved Varieties”, with 91.00 MPS ranked second. This was followed by “Weed Management” and “Seed Rate & Recommended spacing”, ranked third and fourth with 89.44 and 80.95 MPS, respectively.

The table beyond shows that parameters like “Seed Treatment” and “Fertilizer Management” were moderately known by the private agri input dealers to the extent of MPS 80.33 and 76.29. Thus, they ranked fifth and sixth, respectively. They had the slightest knowledge of practices of great concern, “Plant Protection Measure,” with 73.06 MPS and stood seventh-ranked in position.

An effort was also made to find the rank order correlation between private and cooperative agri input dealers regarding improving Tomato crops. The rank order correlation (ρ) value was 0.89, which shows a positive correlation between cooperative agri-input dealers’ knowledge level and private agri-input dealers’ knowledge level. The ‘t’ test tested the significance of ρ , and it was discovered that the ‘t’ calculated value (4.4) was greater than

the table value. This accompanies the inference that there is a correlation between the ranking of knowledge possessed by cooperative and private agri input dealers and improved production technology of tomato crops. There is a significant correlation between the ranking of cooperative and private agri input dealers because of similar knowledge level trends between cooperative and private agri input dealers.

It was concluded from findings that mostly private agri input dealers had high knowledge about the time of sowing, improved varieties, seed rate and recommended spacing, and fertilizer management due to their experience of the dealership; regular mass media exposure & extension contact helped them to change their knowledge regarding improved Tomato production technology cultivation practices. Some practices like Plant protection measures and Weed management have less knowledge due to the complexity of understanding and using those practices.

The present conclusions are similar to the Jat *et al.* (2011), Khatri *et al.* (2018) Gemeda *et al.* (2023) and Meena & Badhala (2024)

Comparison of knowledge level between cooperative and private agri input dealers regarding improved Tomato production technology of crop

To discover the difference in the knowledge level of cooperative and private agri input dealers regarding improved Tomato production technology, the null and alternative hypotheses were formed and tested by employing the ‘Z’ test to discover the significance of the variation in the knowledge level of both cooperative and private agri input dealers’ outcomes are exhibited in Table 3

Table 3: Comparison of knowledge level between Cooperative and Private Agri Input dealers regarding improved Tomato production technology (n=240)

Sr. No	Package of practices	Cooperative Agri Input Dealers (n ₁ =120)		Private Agri Input Dealers (n ₂ =120)		‘Z’ value
		Mean	SD	Mean	SD	
1	Improved Varieties	8.48	1.23	9.10	0.93	4.43**
2	Seed Treatment	3.72	0.87	4.02	0.81	2.76**
3	Time of Sowing	8.98	1.06	9.30	0.75	2.75**
4	Seed Rate and Recommended Spacing	5.23	1.70	5.67	1.53	2.11*
5	Fertilizer Management	8.24	1.63	8.39	1.67	0.70 ^{NS}
6	Weed Management	2.37	0.63	2.68	0.47	4.40**
7	Plant Protection Measures	19.10	4.70	21.92	3.53	5.25**
Overall		56.10	9.92	61.08	8.68	4.13**

*= Significant at 5 per cent, **= Significant at per cent, ^{NS}= non-significant

The data relating to the knowledge level of both cooperative and private agri input dealers incorporated in Table 3 shows that the calculated ‘Z’ value was superior than

the examined value at 5 per cent level of significance in “Seed Rate and Recommended Spacing” While the estimated ‘Z’ value was superior than the tabulated value at 1 per cent level

of significance in rest of five packages regarding improved Tomato production technology viz “Improved Varieties”, “Seed Treatment”, “Time of Sowing”, “Weed Management” and “Plant Protection Measure”. Thus, rejection of the null hypothesis and acceptance of the alternative hypothesis led to the inference that there is a significant variation in the knowledge level of cooperative and private agri input dealers with regard to 6 packages of practices of improved Tomato production technology except “Fertilizer Management”. In other words, there is a significant variation between the knowledge level of cooperative and private agri-input dealers regarding improved Tomato production technology.

The overall parameters of the ‘z’ value were also more significant than its tabulated value at the 1 percent significance level. This indicates that there was a significant variation in the overall knowledge regarding improved Tomato production technology between cooperative and private agri-input dealers.

It was concluded that private agri-input dealers might have more knowledge regarding improved Tomato production technology than cooperative agri input dealers because they often specialize in specific crops or product lines. They invest in research, training, and partnerships to gain expertise in their chosen areas. Cooperative agri-input dealers, on the other hand, may have a broader focus and cater to a wider range of crops and inputs. It’s a difference in specialization and the resources dedicated to acquiring crop-specific knowledge.

The current observations are corresponding to Yadav *et al.* (2014), Khatri *et al.* (2018), Latha *et al.* (2021), Banerjee *et al.* (2022) and Meena & Badhala (2024), Biriithia & Kuria (2023), Jaiswal *et al.* (2023); Patel *et al.*, (2023); Singh *et al.*, (2023); Panke *et al.*, (2023); Yeragorla *et al.*, (2023); Jadav *et al.*, (2024); Saikia *et al.*, (2024)

CONCLUSION

The investigation revealed that out of 43.33 percent of cooperative agri-input dealers had medium knowledge, whereas 32.50 percent and 24.17 percent had low and high knowledge levels, while in the case of private agri-input dealers (55.83%) belonged to high level knowledge, whereas 31.67 percent and 12.50 percent of private agri-input dealers had medium and low knowledge levels regarding improved Tomato production technology, The Findings concluded that mostly private agri input dealers had high knowledge about time sowing, improved varieties, seed rate and recommended spacing, fertilizer management, etc. There was a positive rank correlation between the knowledge levels of cooperative agri-input dealers and private agri input dealers regarding improved Tomato production technology. it was described

that there is a considerable variation in the knowledge level of cooperative & private agri-input dealers except fertilizer management.

RECOMMENDATION

The study facilitates the knowledge of agri input dealers regarding improved tomato production technology in the Jaipur region of Rajasthan, focusing on enhancing training and education programs for these dealers. This can be achieved by developing comprehensive training modules that cover the latest tomato production techniques, pest management, and sustainable practices. Additionally, fostering collaboration between agricultural universities and input dealers can ensure that the information shared is current and practical. Implementing regular workshops and seminars can also facilitate knowledge exchange and updates on innovations in tomato production. Furthermore, creating a platform for input dealers to access research findings and best practices will empower them to provide better guidance to farmers, ultimately leading to improved tomato yields in the region.

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CONFLICT OF INTEREST

All authors declare that they have no conflict of interest

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