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Exploring the effectiveness of dairy mela in enhancing dairy farming practices

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Abstract

This study assesses the effectiveness of the Dairy Mela organized at ICAR-NDRI, Karnal, in improving knowledge, skills, and adoption of modern dairy farming practices among 250 smallholder dairy farmers. Using structured questionnaires and a three-point Likert scale, the research measures farmers' effectiveness across relevance, accessibility, knowledge enhancement, satisfaction, and networking. Results indicate strong agreement on the provision of practical knowledge, exposure to innovations, and improved awareness of feed, nutrition, and government schemes. The well-organized event fostered participatory learning, professional networking, and market linkages, leading to increased farmer confidence and technology adoption. The Dairy Mela emerges as an effective capacity-building platform for sustainable dairy development.

Keywords: Dairy mela, effectiveness, knowledge dissemination, smallholder dairy farmers

Introduction

Dairy farming is one of the most significant components of India's agricultural economy, contributing substantially to income generation, employment, and nutritional security in rural areas. The sector supports millions of small and marginal farmers who depend on livestock-based activities for their livelihoods. India continues to lead global milk production, with output reaching approximately 239.3 million tonnes in 2023–24, accounting for about 24% of total world production (PIB, 2025). This growth has been facilitated by cooperative frameworks, technological innovations, and government initiatives that have strengthened the dairy value chain and enhanced productivity (FAO, 2024). However, smallholder dairy farmers still face several constraints, including limited access to scientific information, weak extension services, and inadequate infrastructure. These barriers often hinder the adoption of improved dairy technologies and restrict productivity gains. Bridging this gap requires innovative, participatory, and experience-based extension approaches that connect farmers directly with experts and technologies.

Among such approaches, Dairy Melas have emerged as an effective platform for technology dissemination and farmer capacity building. These events combine live demonstrations, technical sessions, and farmer scientist interactions, enabling participants to gain practical exposure to innovations in animal management, feeding, breeding, and health practices. Studies have shown that such extension activities significantly enhance farmers' awareness, adoption levels, and overall confidence in scientific dairy management (Garai *et al.*, 2017; Sharma *et al.*, 2023). The Dairy Mela organized at ICAR-National Dairy Research Institute (NDRI), Karnal, Haryana, exemplifies these participatory efforts by integrating technology displays, expert consultations, and stakeholder networking. The present study was conducted to evaluate the effectiveness of the Dairy Mela in improving farmers' knowledge, attitudes, and adoption behavior regarding dairy farming practices. It further examines participants' perceptions of the event's relevance, organization, and overall impact as a capacity-building mechanism for sustainable dairy development.

Methodology

The present study was carried out at the National Dairy Research Institute (NDRI), Karnal, coinciding with the three-day Dairy Mela event held from February 26 to March 1, 2025. A representative sample of 250 dairy farmers was chosen via stratified random sampling to ensure coverage across diverse farmer categories. Data collection was performed using a carefully designed structured questionnaire that included information on evaluations dairy mela effectiveness in addressing challenges faced in dairy farming. Effectiveness can be defined as the degree to which the Dairy Mela achieved its intended objectives of improving

knowledge, skills, and practices among dairy farmers, thereby leading to enhanced productivity and sustainable development. In this study, farmers' responses to statements about the Dairy Mela were quantified using a three-point Likert scale, where 3,2,1 scores were assigned for agree, undecided and disagree. Mean scores were then calculated to measure the overall effectiveness in various dimensions, reflecting the practical impact and value of the event. Descriptive statistics such as frequencies and percentages were utilized to analyze the collected data.

Results and Discussion

Table 1: Effectiveness of dairy mela regarding dairy farming practices n=250

S. No	Statement	Agree (%)	Undecided (%)	Disagree (%)	Mean Score
Relevance and Usefulness of Content					
1	The topics covered in the Dairy mela were relevant to dairy farming needs.	74	20	6	2.68
2	The demonstrations and discussions provided practical knowledge.	86	8	6	2.80
3	The information shared at the Dairy mela can be applied to dairy farming.	62	22	12	2.42
4	The mela addressed important challenges faced by dairy farmers.	83	10	7	2.76
5	The event introduced modern dairy farming tools and techniques.	85	9	6	2.79
Accessibility and Organization					
6	The location of the Dairy mela was convenient for participation.	80	12	8	2.72
7	The event was well-organized, ensuring smooth participation.	84	10	6	2.78
8	The schedule and activities of the mela were clearly communicated.	69	24	7	2.34
9	The mela provided opportunities for active engagement.	86	9	5	2.81
10	The time allocated for sessions was sufficient.	73	17	10	2.63
Knowledge and Skill Enhancement					
11	The Dairy mela enhanced awareness of improved dairy practices.	87	5	8	2.82
12	The mela provided useful information on government schemes.	82	12	6	2.80
13	The event contributed to better knowledge of feed and nutrition.	88	7	5	2.83
14	The mela increased confidence in adopting new technologies.	71	19	10	2.61
15	Participation in the mela influenced the adoption of at least one new practice.	76	15	9	2.67
Participant Satisfaction and Perceived Benefits					
16	The overall experience of attending the Dairy mela was satisfactory.	89	7	4	2.85
17	The sessions and demonstrations met expectations.	82	8	6	2.84
18	The mela balanced theoretical and practical knowledge.	68	22	10	2.58
19	The event was beneficial for dairy farming activities.	90	6	4	2.86
Networking and Market Linkages					
20	Attending the mela is recommended for other dairy farmers.	91	6	3	2.88
21	The Dairy mela facilitated experience sharing among farmers.	85	9	6	2.79
22	The event connected farmers with experts and extension officers.	87	8	5	2.82
23	The mela helped establish contacts with suppliers.	80	11	9	2.71
24	Market opportunities for dairy products were explored.	86	9	5	2.81
25	The mela contributed to long-term business relationships.	70	17	13	2.57

The results from the table-1 indicate that, majority of farmers had reported positive regarding the effectiveness of dairy mela, that in relevance and usefulness, the highest agreement was observed for the provision of practical knowledge through demonstrations and discussions (86%) and the introduction of modern dairy farming tools and techniques (85%), suggesting that farmers value applied learning experiences and exposure to innovations, aligning with evidence that demonstrations and hands-on engagement significantly enhance technology adoption and confidence among participants (Chiswell, 2021; Hancock, 2016). Regarding accessibility and Organization, active engagement opportunities (86%) and effective organization (84%) were rated highest, reflecting that the event structure supported meaningful involvement. This participatory environment is reinforced by prior studies demonstrating that interactive, well-organized extension events foster greater motivation and

higher rates of adoption among farmers (Sutherland *et al.*, 2021).

For knowledge and skill enhancement, enhanced understanding of feed and nutrition (88%) and improved awareness of modern dairy practices (87%) were most notable, indicating the importance of targeted technical information. Rao *et al.* (2014), who found that targeted training and demonstrations directly translate scientific knowledge into practical on-farm improvements. In the satisfaction dimension, the perception that the event was beneficial for dairy farming activities (90%) and the recommendation to other farmers (91%) demonstrate strong acceptance and perceived utility (World Bank, 2020). Finally, in networking and market linkages, connections established with experts and extension officers (87%) and exploration of market opportunities (86%) highlight the Mela's role in building professional relationships and supporting market

access.

Overall, the high level of consensus among farmers regarding the usefulness of the Dairy Mela demonstrates its effectiveness in knowledge dissemination and professional development. The combination of practical solutions, scientific technology showcases, and hands-on demonstrations facilitated in-depth learning and constructive networking. These multidimensional impacts affirm the Dairy Mela's status as an essential platform within the Indian extension system one that not only raises awareness but also drives meaningful behavior change and sustainable adoption of modern dairy practices

Conclusion

The study demonstrates that the Dairy Mela was highly effective in enhancing farmers' knowledge, practical skills, and capacity to adopt improved dairy practices. Participants valued the hands-on demonstrations, expert interactions, and exposure to modern tools, which facilitated both learning and actionable application. The event's well-organized structure, participatory approach, and networking opportunities strengthened farmers' confidence, fostered professional relationships, and provided access to market and technical resources. Overall, the Dairy Mela functioned as a comprehensive extension and capacity-building platform, contributing significantly to productivity improvement, technology adoption, and sustainable development in the dairy sector.

Conflict of Interest

Not available.

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Not available.

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