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Bruce F. Richards
Utah State University, bruce.richards@usu.edu

Lendel Narine
Utah State University, lendel.narine@usu.edu

Justin Clawson
Utah State University, justin.clawson@usu.edu

Kalen Taylor
Utah State University, kalen.taylor@usu.edu

Jacob Hadfield
Utah State University, jacob.hadfield@usu.edu

See next page for additional authors.
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Authors

Bruce F. Richards, Lendel Narine, Justin Clawson, Kalen Taylor, Jacob Hadfield, and Jody Gale

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Abstract

A needs assessment was conducted by the Utah State University Dairy Extension Team to identify the most urgent issues faced by Utah dairy farmers. The assessment found that the top five priority needs were implementing new technology, improving public perception of water use, managing risk, succession planning, and reducing feed costs. The results will guide dairy Extension programming in Utah. Several workshops and events have already been planned to address these needs. Overall, the assessment will help USU Extension provide research-based educational programs to meet the needs of the dairy industry in Utah.

Introduction

In the fall of 2022, the Utah State University (USU) Dairy Extension team was created by state Extension specialists and county faculty. The goal of the team is to provide research-based, educational programs to Utah dairy farmers to meet their industry needs; a goal consistent with the land grant mission of improving the lives of individuals, families, and communities (USU Extension, 2023). To guide dairy Extension programming in Utah, a dairy needs assessment (see Appendix 1) was developed in the fall of 2022. The dairy team sought to understand the highest priority needs or gaps in dairy issue areas (Altschuld, 2004). The assessment will facilitate effective and efficient resource allocation to educational programs that target the high-priority needs of dairy farmers (Narine et al., 2021).

Response and Participants

A questionnaire was developed by the team to gather survey data from dairy farmers in Utah. The survey was developed based on informational interviews (see Appendix 2) with key Utah dairy informants and input from specialists and county Extension faculty. Secondary data (USDA, 2022; UDAF, 2022), informational interviews, and discussions with Extension specialists and county faculty on the USU Dairy Extension Team identified six major themes. These included labor, water, health and nutrition, replacements, management, and public relations. Twenty-six topics were identified and categorized into one of these six major themes. Survey data were gathered using Qualtrics, and participants were invited via email using listservs from Dairy West and the Utah Farm Bureau. Data were collected from November 2022 to January 2023.

Twenty-seven individuals completed the survey ($n = 27$). Respondents included dairy farm owners, managers, herdsman, and family members. With 142 dairies licensed to sell milk in Utah, the response rate was 19%. Of those that completed the survey, 18 identified as white, 1 as Hispanic, and 8 did not respond to the question. When asked about their age, eight (8) were 55-64 years old, six (6) were 35-44, five (5) were 45-54, two (2) were 25-34, one (1) was 75+, and five (5) did not respond. Farm size ranged from 1-10,000 lactating cows, with the most individuals (10 farms) having 101-500 lactating cows. The Ranked Discrepancy Model (RDM)

was used to analyze the data (Narine & Harder, 2021). Using a repeated-measures design, respondents were asked to rate the importance of 26 topics and their level of access to educational resources on those topics. “Importance” was rated on a scale of 1 (“Not important”) to 5 (“Extremely important”), and “Access” was rated on a scale of 1 (“Terrible”) to 5 (“Excellent”). Needs were ranked based on the discrepancy between importance and access by calculating the Ranked Discrepancy Score (RDS) following the RDM.

Results

Results show all dairy topics were ranked *at least* as slightly important, and access to all educational resources was ranked *at least* as average. Twenty-one (21) of the 26 topics had a negative RDS and were categorized as *needs* (Table 1). In Table 1, the top 5 priority needs were (1) Implementing new technology (RDS = -68), (2) Improving public perception of water use (RDS = -67), (2 – tied) Managing risk (RDS = -67), (4) Succession planning (RDS = -55), and (5) Reducing feed costs (RDS = -50). In addition, farmers indicated that email was their preferred medium for receiving information, and face-to-face workshops as their preferred method for attending workshops.

Table 1
Ranked Discrepancy Scores identifying Utah Dairy Needs.

Rank	Topic	RDS
1	Implementing new technology	-68
2	Improving public perception of water use	-67
2	Managing risk	-67
4	Succession planning	-55
5	Reducing feed costs	-50
6	Managing mastitis/milk quality	-41
7	Labor recruiting	-40
8	Breeding	-39
9	Dairy records training	-38
10	Managing transition cows	-36
10	Raising replacement heifers	-36
12	Educating the public	-35
13	Managing metabolic disorders	-33
14	Wastewater use and management	-29
15	Managing manure nutrients	-24
16	Improving farm safety	-21
17	Selecting genetics	-20
18	Labor communication	-19
19	Improving neighbor relations	-14
20	Labor training	-11
21	On-farm milk processing	-9
22	Reducing farm water use	0
23	Improving mental health	7

24	Engaging the public on social media	18
25	Purchasing replacement heifers	59
26	Producing organic milk	73

Public Value and Next Steps

The needs assessment will guide dairy Extension programming in Utah. For example, a dairy Extension workshop was held on March 8-9 in 2023, which included workshop topics identified in the needs assessment. Agriculture water optimization was included in the workshop to address improving public perception of water use. The USU Extension Dairy team is planning a field day to address the adoption of new technology (which was ranked as the highest priority need). Managing risk will be addressed in upcoming dairy workshops.

Dairy farmers were encouraged at the Dairy West convention and at the Dairy Extension workshops to take advantage of succession planning opportunities offered by USU extension faculty. Intermountain Farmers Association (IFA) provided speakers at the Dairy Extension workshops on the topic of reducing feed costs. Other needs will be addressed through future dairy Extension programming and activities such as workshops, field days, conferences, and fact sheets. The results of the needs assessment will continue to guide the USU Extension Dairy team to develop and conduct relevant educational programs to support Utah dairy farmers.



The USU Extension Team conducted a needs assessment to identify the top priority needs and gaps in dairy issue areas faced by Utah dairy farmers. The survey found that the adoption of new technology, improving public perception of water use, managing risk, succession planning, and reducing feed costs were the most urgent needs. The survey results will guide future dairy Extension programming in Utah, with workshops and events already planned to address these needs. By providing research-based educational programs, the Utah State University Dairy Extension Team will increase the strength and sustainability of the dairy industry in Utah.

Figure 3: Participants learning about a robotic milker in a workshop held in March 2023.

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Appendix 1: Utah Dairy Needs Assessment Survey

Utah Dairy Needs Assessment (Section 1 Only)

Utah State University (USU) Extension provides research-based programs and resources with the goal of improving the lives of individuals, families and communities throughout Utah. The Dairy Extension Team seeks to know which topics are most important to the dairy farmers of Utah. The following questions ask about your access to educational resources and programs. To maximize response rate, paper and email surveys are being delivered. Please only complete the survey once (check if it is the “Utah Dairy Needs Assessment”). However, more than one person on the farm may complete the survey. For additional copies of the survey, contact Bruce Richards (bruce.richards@usu.edu). Please complete and return by January 20, 2023.

Question 1: For each item below, please indicate:

1. How important is the topic area to your farm business?
 - a. Select a number from 1 (*Not Important*) to 5 (*Very Important*)

2. How would you rate your **level of access** to educational resources or programs on the topic?
 - a. Select a number from 1 (*Terrible Access*) to 5 (*Excellent Access*)

Topic	Importance of topic: Not important (1) – Extremely Important (5)					Access to information: Terrible (1) – Excellent (5)				
	①	②	③	④	⑤	①	②	③	④	⑤
Labor	①	②	③	④	⑤	①	②	③	④	⑤
Labor training	①	②	③	④	⑤	①	②	③	④	⑤
Labor communication	①	②	③	④	⑤	①	②	③	④	⑤
Labor recruiting	①	②	③	④	⑤	①	②	③	④	⑤
Implementing new technology	①	②	③	④	⑤	①	②	③	④	⑤
Improving farm safety	①	②	③	④	⑤	①	②	③	④	⑤
Improving mental health	①	②	③	④	⑤	①	②	③	④	⑤
Water	①	②	③	④	⑤	①	②	③	④	⑤
Reducing farm water use	①	②	③	④	⑤	①	②	③	④	⑤
Improving public perception of water use	①	②	③	④	⑤	①	②	③	④	⑤
Wastewater use and management	①	②	③	④	⑤	①	②	③	④	⑤
Health and Nutrition	①	②	③	④	⑤	①	②	③	④	⑤
Reducing feed costs	①	②	③	④	⑤	①	②	③	④	⑤

Managing transition cows	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Managing mastitis/milk quality	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Managing metabolic disorders	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Managing manure nutrients	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Replacements	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Raising replacement heifers	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Purchasing replacement heifers	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Breeding	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Selecting genetics	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Management	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Managing risk	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Dairy records training	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Succession planning	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Public Relations	① ② ③ ④ ⑤	① ② ③ ④ ⑤
On-farm milk processing	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Producing organic milk	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Engaging the public on social media	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Improving neighbor relations	① ② ③ ④ ⑤	① ② ③ ④ ⑤
Educating the public	① ② ③ ④ ⑤	① ② ③ ④ ⑤

Appendix 2: Questions for Key Informant Interviews

1. What is going well in the dairy industry in Utah?
2. Based on your experience, what are some major issues or problems facing the dairy farmers of Utah?
3. What are some of the direct consequences if these issues are not addressed soon?
4. Are you aware of any organizations who are actively working to address the issues you mentioned?
5. Do you think any additional or new programs are needed to address any of these issues? What type of program(s) might be most suitable to solving these issues?
6. Are you satisfied with the level of progress made toward solving these issues? Why?
7. What is your position in the Utah dairy industry?
8. How long have you been in that position?