

# 2021 South Dakota Sheep and Goat Needs Assessment



March 2022

**Kelly Froehlich**, Assistant Professor and SDSU Extension Sheep and Goat Specialist  
**Heidi Carroll**, SDSU Extension Livestock Stewardship Field Specialist & Beef Quality Assurance Coordinator  
**Jaelyn Whaley**, SDSU Extension Sheep Field Specialist

## Introduction

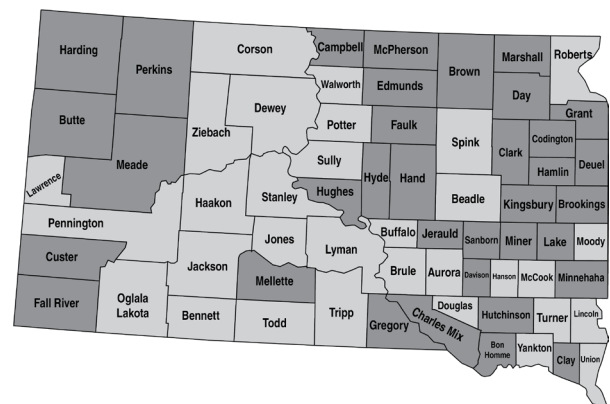
A national Sheep and Goat Needs Assessment was conducted by the South Dakota State University (SDSU) small ruminant Extension team. The peer-reviewed survey was open from January to July of 2021 and was formatted as an online QuestionPro survey. The survey was distributed to producers throughout the U.S. via direct emails from state Extension professionals and livestock associations, sheep and goat related social media platforms, news releases, and in-person producer events. Open-ended and closed-ended questions were asked around three main topic areas:

- Farm and ranch demographics
- Preferences on production and management topics of importance and challenges
- Preferences on extension programming and delivery

This publication is a summary of South Dakota responses to guide on-going Extension efforts for South Dakota sheep and goat producers.

## Farm and Ranch Demographics

Seventy-three respondents from 35 counties in South Dakota completed at least half of the Sheep and Goat Needs Assessment (Figure 1). It is important to note this survey captured approximately 4.8% of the total South Dakota sheep and goat producers (USDA NASS, 2017) and respondents are skewed towards individuals that are comfortable using online surveys.



**Figure 1.** South Dakota counties with at least one survey response are shaded in dark grey.

Most respondents were described primarily as sheep producers, with fewer goat producers, and a minority raising both sheep and goats (Table 1). Fifty-six percent of producers described their operations as supplemental household income (Table 1). Most producers had a flock/herd size of 100-499 head (42%); while an aggregated 43% of producers had a flock/herd size of less than 99 head (Table 1). These flock/herd sizes are larger than U.S. averages where 93% of sheep producers own less than 99 head (USDA, NASS 2017), and the average herd size for goats is 20 head (USDA, NAHMS, 2019). An increase in producers owning small herd/flocks is observed in both SD and the U.S. possibly indicating newer producers starting up flocks. In the U.S., the number of small sheep producers ( $\leq 99$  head) has increased by 27% between 2012 and 2017 (USDA NASS 2017, 2012).

**Table 1.** South Dakota demographics of survey respondents by region and overall

Question	Response Options	East River Frequency	West River Frequency	Unknown Frequency	Overall	
					Frequency	%
Do you raise sheep, goats, or both? (n=60)	Sheep	22	9	3	34	56.7
	Goats	13	3	2	18	30.0
	Both	6	2	0	8	13.3
Do you direct market your products (meat, fiber, dairy, etc.)? (n=66)	Yes	10	7	3	20	30.3
	No	39	7	0	46	69.7
Which of the following best describes your operation's contribution to your household income? (n=70)	Supplemental Income	33	4	2	39	55.7
	Whole Family Income	4	6	2	12	17.1
	Prefer not to respond	6	3	1	10	14.3
	Single Spouse Income	6	2	1	9	12.9
What is your average flock/herd size annually? (n=72)	≥1000	0	2	0	2	2.8
	500-999	2	2	2	6	8.3
	100-499	22	6	2	30	41.7
	50-99	11	3	0	14	19.4
	25-49	9	2	0	11	15.3
	<25	4	0	2	6	8.3
	Prefer not to respond	3	0	0	3	4.2
Which of the following best describes your operation? Select all that apply. (n=70)	Farm flock/herd	36	5	3	44	62.9
	Registered flock/herd	14	12	2	28	40.0
	Range flock/herd	11	7	3	21	30.0
	Show sheep/goats	5	2	1	8	11.4
	Feedlot (buy/finish)	2	1	0	3	4.3
	Other	1	1	1	3	4.3
How many years have you been working in the sheep and/or goat industry? (n=71)	0-5 years	19	3	2	24	33.8
	6-10 years	13	3	1	17	23.9
	11-15 years	6	2	0	8	11.3
	16-20 years	2	1	0	3	4.2
	21-25 years	0	1	0	1	1.4
	26-30 years	2	2	1	5	7.1
	30+ years	9	2	2	13	18.3
Do you raise your sheep/goats with other livestock species (diversified operation, multi-species grazing)? (n=71)	Yes	30	10	3	43	60.6
	No	20	5	3	28	39.4
Do you utilize your sheep/goats for targeted grazing/weed control? (n=63)	Yes	22	6	2	30	47.6
	No	24	7	2	33	52.4
Do you utilize livestock guardian animals? (n=71)	Yes	20	10	5	35	49.3
	No	30	5	1	36	50.7
Gender (n=72)	Female	27	8	0	35	49.3
	Male	23	6	3	32	45.1
	Prefer not to respond	2	1	2	5	5.6
Age (n=71)	Under 18 years old	2	1	0	3	4.2
	18-29 years old	9	1	0	10	14.1
	30-59 years old	32	10	4	46	64.8
	60 years or older	7	3	0	10	14.1
	Prefer not to respond	1	0	1	2	2.8

Question	Response Options	East River Frequency	West River Frequency	Unknown Frequency	Overall	
					Frequency	%
Ethnicity (n=69)	Hispanic	0	0	0	0	0
	Latino	0	0	0	0	0
	Non-Hispanic or Latino	44	11	4	59	85.5
	Prefer not to respond	6	3	1	10	14.5
Race (n=72)	White	49	13	4	66	91.7
	American Indian or Alaska Native	0	1	0	1	1.4
	Asian	0	0	0	0	0
	Black or African American	0	0	0	0	0
	Native Hawaiian/other Pacific Islander	0	0	0	0	0
	Prefer not to respond	2	2	1	5	6.9

“Beginning farmers and ranchers” are not classified on age and flock size is not a factor; the USDA definition is simply operating a farm or ranch for 10 years or less. Most (65%) respondents were in the 30-59 years old age category which is consistent with the national U.S. farmer age of 57.5 years (USDA NASS, 2017). This age group (30-59 years old) was represented across all flock/herd sizes (Figure 2) and all years of experience working in the sheep and/or goat industry (Figure 3). The SD responses are in line with national data indicating 27% of beginning agricultural producers have an average age of 46.3 years while operating smaller farms in terms of both total acres and sales (USDA NASS, 2017). Fifty-four percent of beginning SD producers (<10 years of experience) operate flock/herds of less than 100 head (Figure 4). As years of experience increase a trend of increasing flock/herd size is seen. Fifty-five percent of producers with 11-20 years of experience operate flocks/herds of more than 100 sheep and/or goats, while 70% of producers with 21 or more years of experience operate flock/herds of more than 100 sheep and/or goats (Figure 4). This trend aligns with the 2019 USDA NAHMS goat study, with producers of smaller herds (5-19 head) having an average of 14 years of experience, medium herds (20-99) having 16 years, and large herds (100+) at 25 years’ experience (USDA NAHMS, 2019).

The predominant SD operation type was a farm flock/herd (62.9%) followed by registered flock/herd (40%) and range flock/herd (30%). Table 1 shows the differences in operation type based on respondent geographical location in relation to the Missouri River;

however, responses were fewer from the western side of the state and caution should be used interpreting the data further based on geography alone. Most respondents (60.6%) also described their operation as diversified. Cattle (41) was the primary species mentioned being raised with the sheep and/or goats. Horses (7), chickens (both layers and boilers; 4), donkeys (2), and pigs (2) were also mentioned.

Figure 5 outlines perceived economic importance of products and services to an operation. Meat and live animals are the most important products from respondents followed by fiber and wool, grazing services, dairy food products, and non-food products. When asked whether they direct market, 69.7% of respondents do not direct market their products. However, those that do direct market products mentioned market/marketing (3), meat processing availability (3), social media/internet platform restrictions (2), volume/quantity of scale (2), consumer commitment (2), and time (1) being the main challenges to marketing their products.

Close to half of the respondents (47.6%) use the animals for targeted grazing. Of those who use targeted grazing (n=33), 88% of respondents utilize their own property, 9% use contract grazing, and 3% use public land.

Livestock guardian animals were utilized by 49.3% of respondents, in which dogs (19), llamas (8), and donkey/burros (8) were mentioned. This is consistent with the 2020 USDA NAHMS sheep death loss study that reported guardian dogs, donkeys, and llamas as the top non-lethal predator management methods used.

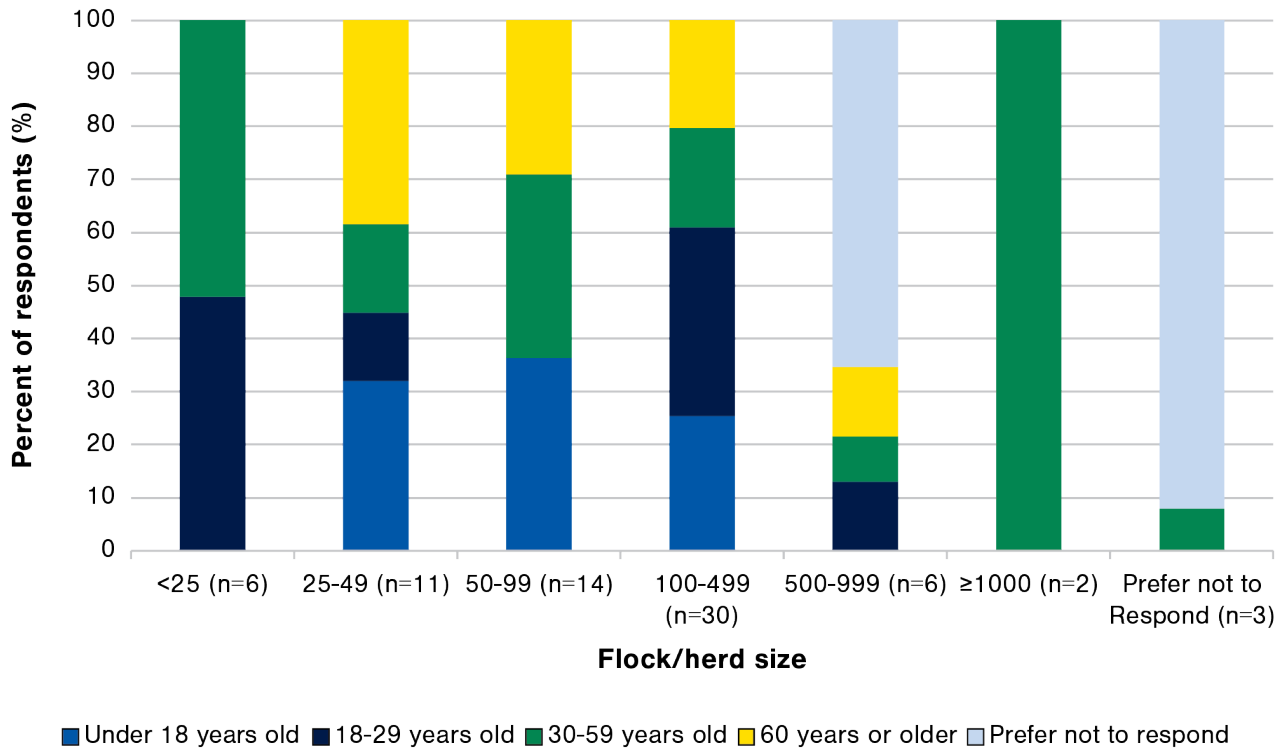


Figure 2. Flock/herd size by age of respondent.

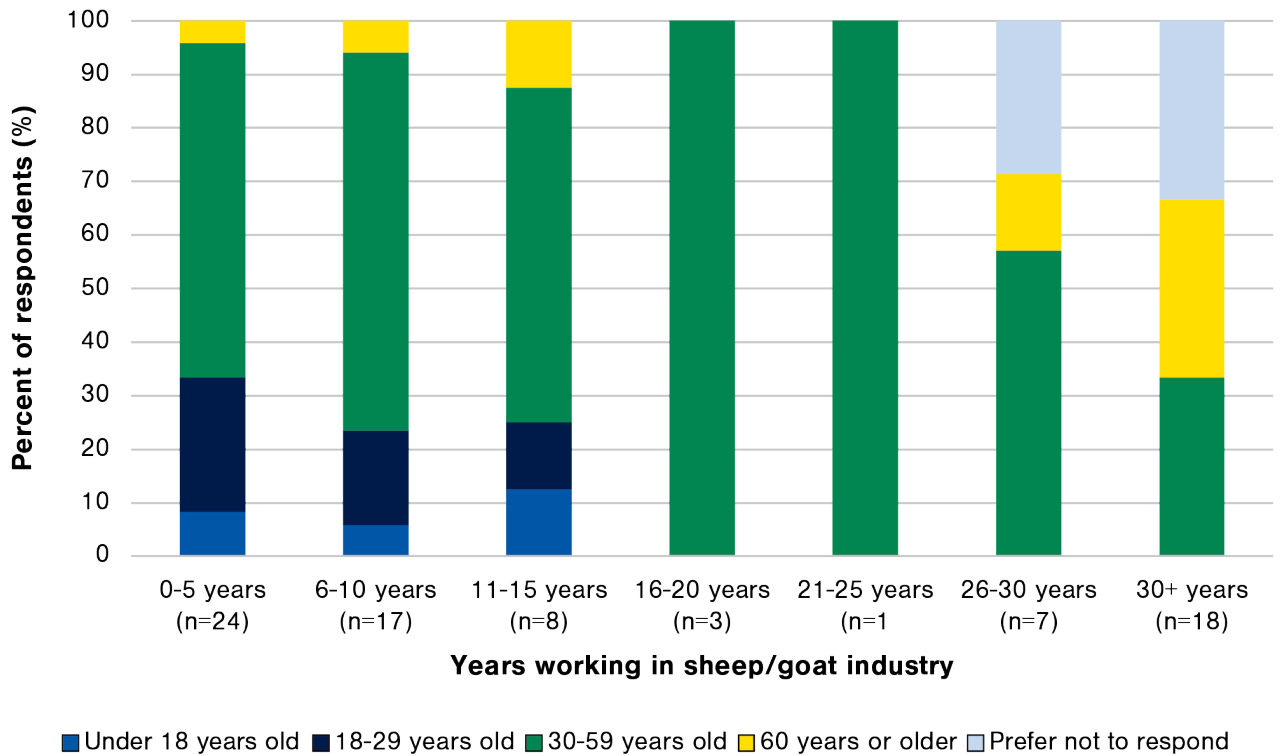
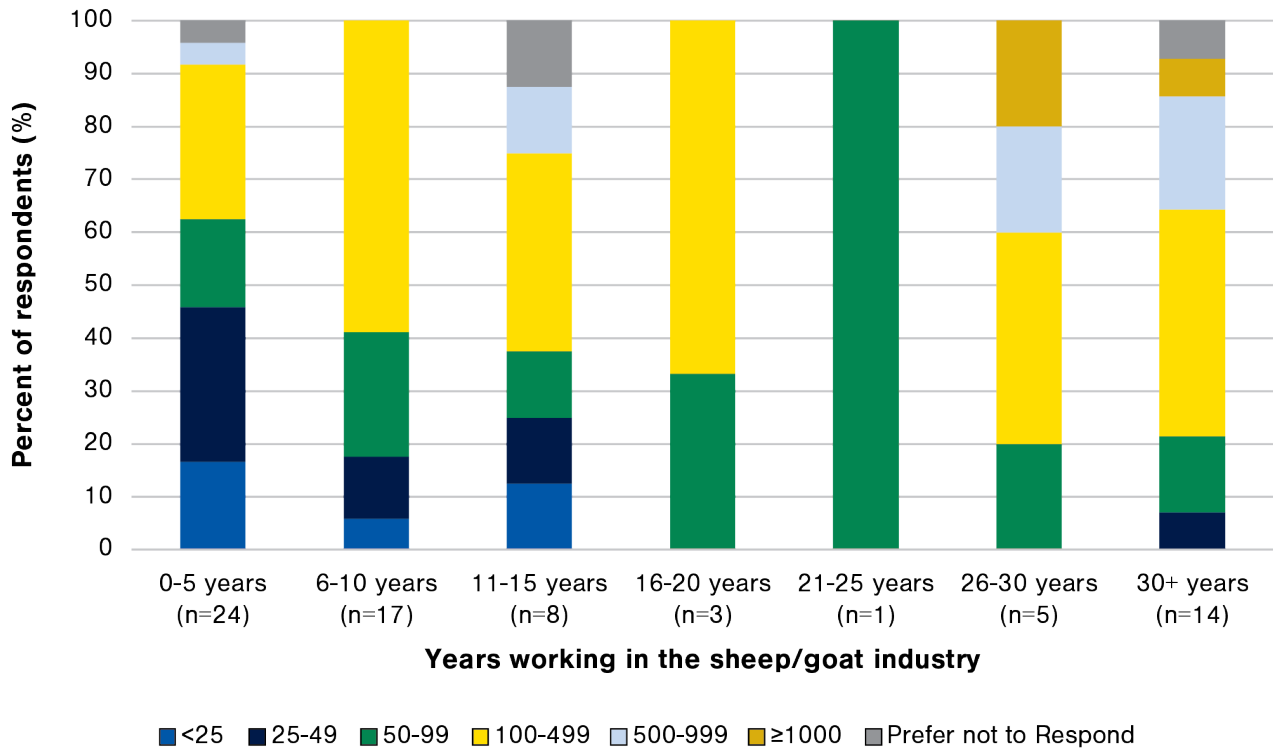
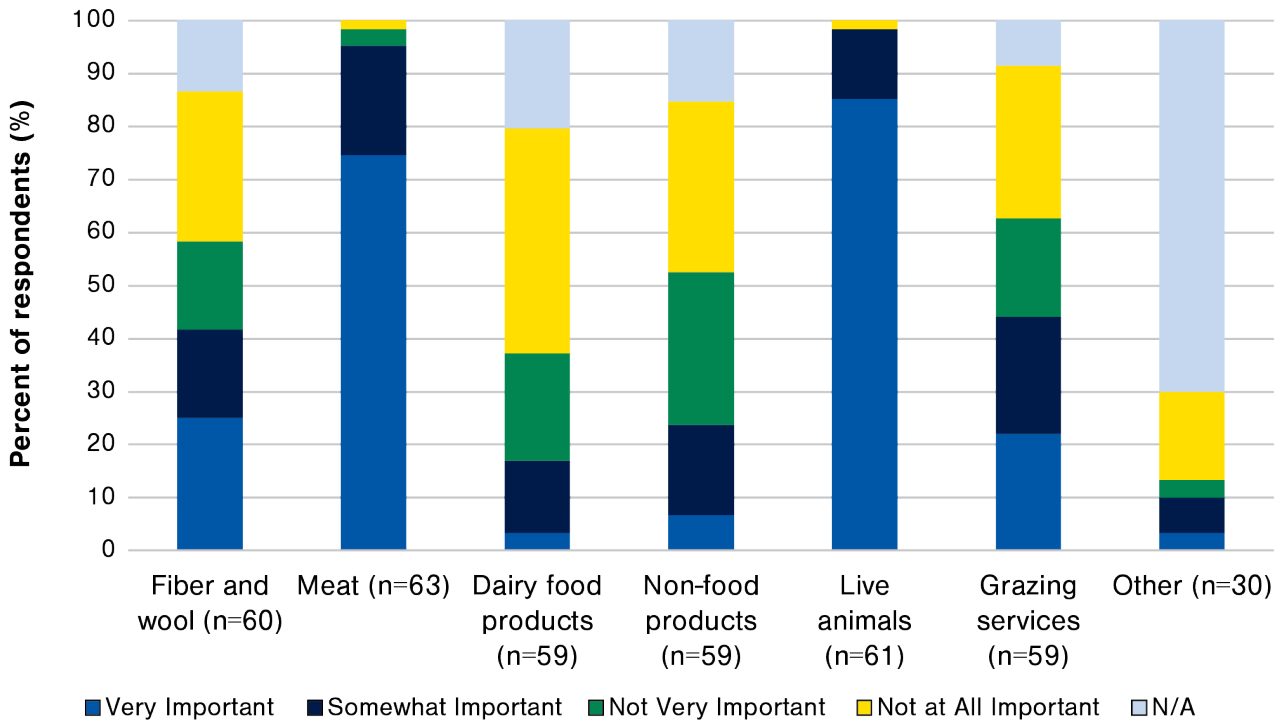


Figure 3. Years working in sheep/goat industry by age of respondent.



**Figure 4.** Respondent years working in sheep/goat industry by herd/flock size.



**Figure 5.** Summary of “How economically important are the following products or services to your operation?”

## Preferences on Production and Management Topics of Importance and Challenges

This survey asked producers to score the level of importance (1 = very important to 4 = not at all important, 5 = N/A) for each item in a list of identified topic areas. Table 2 lists producer scores for the topics. The top five topics based on average level of importance were

- 1) Lamb and kid nutrition (1.41)
- 2) Parasite management (1.41)
- 3) Breeding stock nutrition (1.45)
- 4) General animal health practices (1.53)
- 5) Reproductive management (1.54)

These topics align well with the 2021 USDA NAHMS Sheep Needs Assessment. Although question wording and type were different between this survey and the 2021 USDA NAHMS, ewe and lamb health management and internal parasites rose to the top as management, disease, disorder, or pathogen priorities.

Fifty-nine respondents answered the open-end question, “What are your top 3 challenges as a producer?” Responses were categorized into themes and frequencies and are summarized in Table 3. Health and Disease was the top theme (44 responses) with most mentioning parasites (21 of 44), diseases (7 of 44), or kidding/lambing (7 of 44). These responses reaffirm national topics of importance (USDA NAHMS, 2019; USDA NAHMS, 2021) while providing additional guidance on specific areas of producer concern. Marketing was the second theme (26 responses) with most mentioning general marketing (10 of 26), markets (5 of 26), or the proximity or distance to markets or sale barns (3 of 26). This aligns with marketing being the second national management priority on the 2021 USDA NAHMS Sheep Needs Assessment while it was fourth on NAHMS Goat Survey (USDA NAHMS, 2019). Nutrition was the third theme (23 responses) with most mentioning general nutrition (9 of 23), rations (4 of 23), or growing and finishing lambs/kids (4 of 23). Six of the eight responses for Experts and Resources refer to veterinarians or veterinary services. Three of the five responses for Weather reference winter struggles.

**Table 2.** Relative importance to the question “Looking towards the next 6 months, how important are each of the following topics to you?”

Topic area	Relative Importance (f) <sup>1</sup>					Mean Score <sup>2</sup>
	1	2	3	4	5	
Parasite management (n=71)	50	16	3	1	1	1.41
Lamb and kid nutrition (n=70)	46	20	3	1	0	1.41
Breeding stock nutrition (n=71)	45	23	1	1	1	1.45
General animal health practices (n=73)	40	29	3	0	1	1.53
Reproductive management (n=72)	41	25	5	0	1	1.54
Young stock management (postweaning) health and husbandry (n=72)	40	28	1	1	2	1.57
Newborn and maternity health and husbandry (n=73)	36	32	1	2	2	1.66
Business and financial management (n=72)	32	24	13	3	0	1.82
Forage production (n=72)	29	28	13	2	0	1.83
Grazing systems and pasture management (n=72)	31	25	13	1	2	1.86
Direct marketing (food and fiber, n= 70)	27	23	18	2	0	1.93
Risk management tools (n=72)	25	31	13	2	1	1.93
Genetics (n=72)	23	34	12	2	1	1.94
Livestock protection animals (n=72)	23	33	13	3	0	1.94
Predator control (n=72)	25	29	15	3	0	1.94
Working with local processors (n=71)	29	20	18	2	2	1.99
Animal behavior and handling (n=73)	19	34	16	3	1	2.08
Estimated breeding values (EBV) and genetic tools (NSIP, n= 71)	17	29	19	4	2	2.23
Cover crop integration (n=72)	16	28	22	4	2	2.28
Lamb and goat cuts and fabrication (n=71)	17	22	23	6	3	2.38
Fiber quality and marketing (n=72)	18	14	22	12	6	2.64
Dairy product quality (n=70)	5	6	21	26	12	3.49
Immigrant workers policy and procedures (n=71)	3	7	21	26	14	3.58

<sup>1</sup>1=very important, 2=somewhat important, 3=not very important, 4=not at all important, 5=N/A  
<sup>2</sup>A lower mean score indicates a higher relative importance

**Table 3.** Summary of open-ended responses to “What are your top 3 challenges as a producer?” (n=59)

Theme <sup>1</sup>	Frequency (f) <sup>2</sup>
Health and Disease	44
Marketing	26
Nutrition	23
Finances	16
Predators	11
Miscellaneous	9
Experts and Resources	8
Reproduction	7
Forage Management	6
Facilities	5
Weather	5
Labor	2

<sup>1</sup>Miscellaneous = expansion, trucking, producer interest in sheep, first-time owner, animal and environmental extremists, Identification, shearing. Marketing = feedyards, auctions, direct, dairy, live animals, products. Finances = bookkeeping, ROI, affordability of items, accounting, taxes, expenses and returns, prices. Health and Disease = parasites, specific diseases, prevention, treatment, flock health, lambing/kidding issues. Facilities = facilities, feeders, fencing. Nutrition = feeds, feedstuffs, nutritional requirements, nutritive values of feedstuffs, rations, weight gain and performance, weaning. Forage Management = cover crops, pastures, grazing, land management. Reproduction = artificial insemination, embryo, breeding. Predators = coyotes, predators. Experts and Resources = veterinarians, veterinary access, nutritionist, knowledge and experience level of professionals, resources. Weather = winter, weather. Labor = labor, time management.

<sup>2</sup>Responses could be categorized as multiple themes.

## Preferences on SDSU Extension Programming and Delivery

Format of programming preference was asked for both virtual and in-person programming types. Most SD respondents (43%) indicated a 45-minute virtual program as the most ideal with a combined majority (68%) preferring a single program less than 90 minutes. For in-person programs, respondents indicated an all-day with multiple sessions (32%) being most ideal, followed by a single half-day (3 hr max, 23%), or multi-day with multiple sessions (15%) format. South Dakota respondent preference for the time of day that programs are offered was predominantly morning (41%), followed by afternoon (36%), and evening (23%). Additionally, slight preference was indicated for winter (Dec-Feb, 34%) and Fall (Sep-Nov, 30%) opposed to Summer (Jun-Aug, 23%) and Spring (Mar-May, 13%) for in-person programming. Saturdays (20%), and Fridays (16%) were the most ideal day of the week for in-person programming. The preferred ways to promote SDSU Extension programming and resources were email (38%), electronic newsletter (23%), postcard/flyer (15%), and SDSU Extension website (12%).

## Implications

Results from this survey provide a snapshot of South Dakota sheep and goat producers. Identification of important and challenging production and management topics helps guide initial SDSU Extension program efforts to reach the largest audience. Additionally, these findings may provide insight into continuing education topics for veterinarians and industry experts. Some topics were ranked as ‘Somewhat Important’ to ‘Very Important’, such as immigrant workers policy and procedures and dairy product quality. Although this may mean these topics are not a primary focus of the South Dakota sheep and goat industry, connecting producers to information and experts would still be beneficial. This highlights a need for a well-rounded and collaborative Extension program that can connect producers with a variety of experts to meet both top challenges and emerging areas of interest.

SDSU Extension programming and delivery helps focus efforts to ensure producer participation and availability. As virtual programming is developed, consideration to the identified length of program preference will be given to optimize participant engagement. As in-person programming is developed, a variety of formats and

sessions should be considered with slight emphasis on fall and winter months. These findings reinforce the impact of email listservs as a promotional method, while multi-modal promotion methods are key for target audience awareness of programs and resources.

## References

USDA National Agricultural Statistics Service, 2012

Census of Agriculture. Complete data available at [www.nass.usda.gov/AgCensus](http://www.nass.usda.gov/AgCensus).

USDA National Agricultural Statistics Service, 2017

Census of Agriculture. Complete data available at [www.nass.usda.gov/AgCensus](http://www.nass.usda.gov/AgCensus).

USDA National Animal Health Monitoring System, 2019

Goat Study. Complete data available at <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/monitoring-and-surveillance/nahms>.

USDA National Animal Health Monitoring System, 2020

Sheep Death Loss in the United States. Complete data available at <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/monitoring-and-surveillance/nahms>.

USDA National Animal Health Monitoring System, 2021

NAHMS Sheep Needs Assessment: An Evaluation of Industry Concerns to Help Guide Future NAHMS. Complete data available at <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/monitoring-and-surveillance/nahms>.



**SOUTH DAKOTA STATE  
UNIVERSITY EXTENSION**

**SOUTH DAKOTA STATE UNIVERSITY®  
ANIMAL SCIENCE DEPARTMENT**

SDSU Extension is an equal opportunity provider and employer in accordance with the nondiscrimination policies of South Dakota State University, the South Dakota Board of Regents and the United States Department of Agriculture.

Learn more at [extension.sdstate.edu](http://extension.sdstate.edu).

© 2023, South Dakota Board of Regents