

Information Brief

September 2022

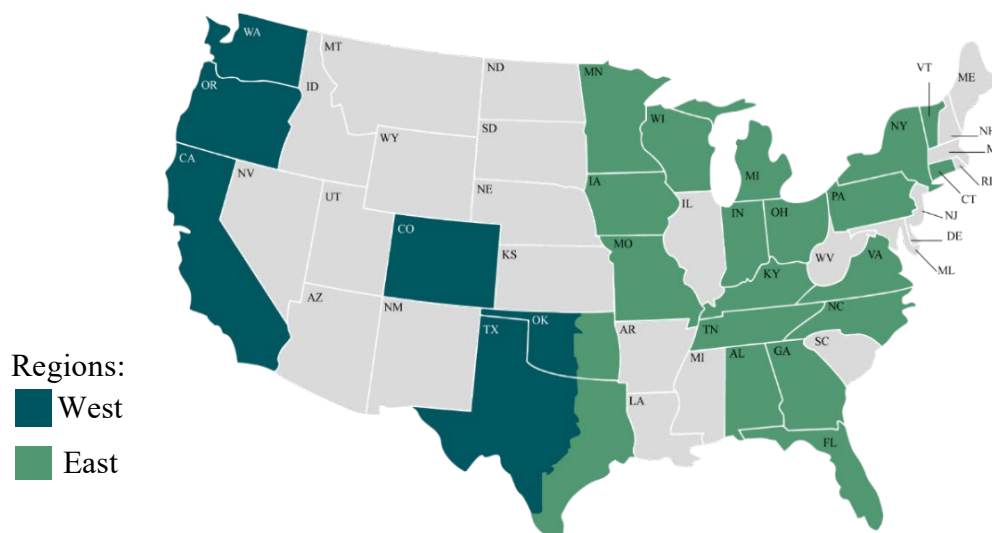
Agritourism is an important and growing sector of the livestock industry, where farms invite the public onto their operations for mutually beneficial purposes. Agritourism provides valuable educational opportunities for the public and serves as an important source of revenue for many producers through consumer direct promotion and sales of products. Goat agritourism activities often include feeding and playing with goats, goat yoga classes, and sales of goat products such as milk, cheeses, soaps, and lotions. Goat agritourism is a fun and generally safe way to introduce both adults and children to livestock and agricultural production systems.

At the same time, interactions between people and animals provide opportunities for zoonotic disease transmission and unsafe physical interactions for either people or animals. Good biosecurity and safe food handling practices can help minimize public and animal health risks. This document provides a summary of data collected as part of the NAHMS Goat 2019 Study focused on goat agritourism operations' management practices and highlights possible areas of improvement to help ensure operations and visitors benefit from agritourism.

U.S. Department of Agriculture's National Animal Health Monitoring System (NAHMS), in collaboration with the National Agricultural Statistics Service (NASS), conducted its second national study of the U.S. goat industry in 2019. The NAHMS Goat 2019 study gathered information on goat health and management practices on U.S. goat operations through two data collection phases as well as on farm biologic sampling. The study was conducted in 24 of the nation's major goat-producing States, on selected operations with 5 or more adult goats (figure 1).

Goat operations that completed both data collection phases and were identified as an agritourism operation were eligible to complete the On-site Agritourism Questionnaire. An agritourism operation was defined as one that allowed the general public onto the operation and the general public had access to areas or facilities on the farm that housed or contained animals, feed, manure, or farm equipment. In total, 86 operations completed the questionnaire.

Figure 1. States/Regions that participated in the 2019 NAHMS Goat 2019 Study



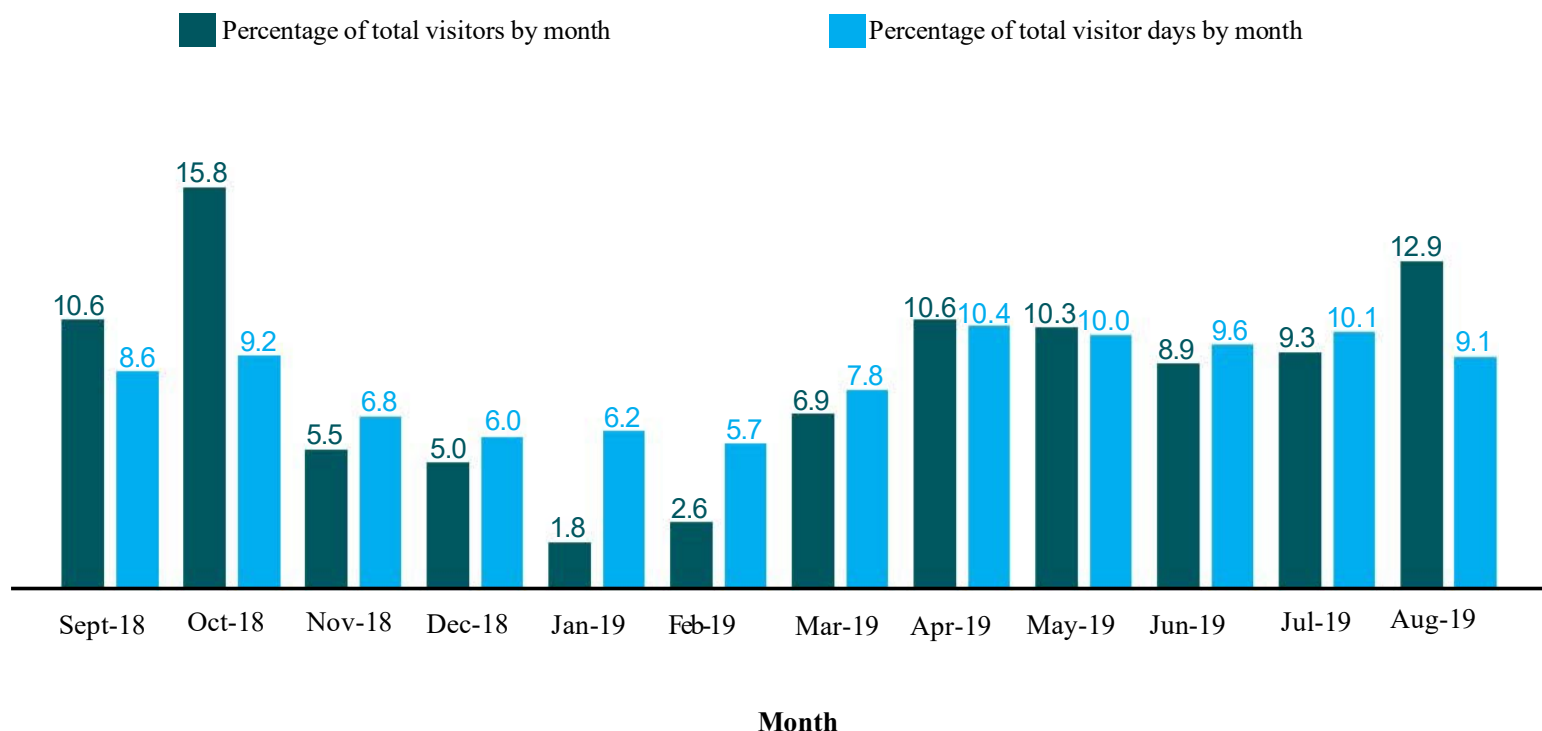
**Texas and Oklahoma were divided on a line corresponding to north-south Interstate 35. The western halves of the States were included in the West region, and the eastern halves were included in the East region.*

VISITOR DAYS

The total number of people who visit an operation can impact the economic revenue and can change the potential risk of a disease outbreak and risk for injuries and accidents at the facility. Overall, about half of all agritourism operations (51.8 percent) had less than 100 visitors per year, and 4.7 percent had more than 5,000 visitors per year. Additionally, the number of days an operation is open during a year and the months the operation is open can change the overall disease and safety risks to visitors. About 10 percent of agritourism operations had visitors every day throughout the year and about two-thirds (68.2 percent) had visitors less than 50 days annually.

Additionally, the month that an agritourism operation has visitors may impact the activities available on the farm and the risk to the visitors. For example, figure 2 shows the highest percentage of annual visitors occurred in October of 2018 (15.8 percent), which likely overlaps with other fall farm activities, such as hayrides and pumpkin or apple picking. These activities can increase visitor safety concerns, such as falling off of wagons during the hayride, visitors climbing trees, or sustaining an injury in the field. The highest percentage of days with visitors occurred in April 2019 (10.4 percent). This likely corresponds with kidding on many operations and increases the potential risk of disease spread to visitors. The total percentage of visitors and visitor days were lowest during the winter months. However, given the low percentage of visitor days, it is likely that on the days when agritourism operations were open, they had a higher concentration of visitors. A higher percentage of visitors per day can stress livestock and potentially cause increased pathogen shedding. Additionally, increased visitor concentration can be more difficult to oversee and lead to reduced biosecurity policy adherence and increased risk to both animals and visitors.

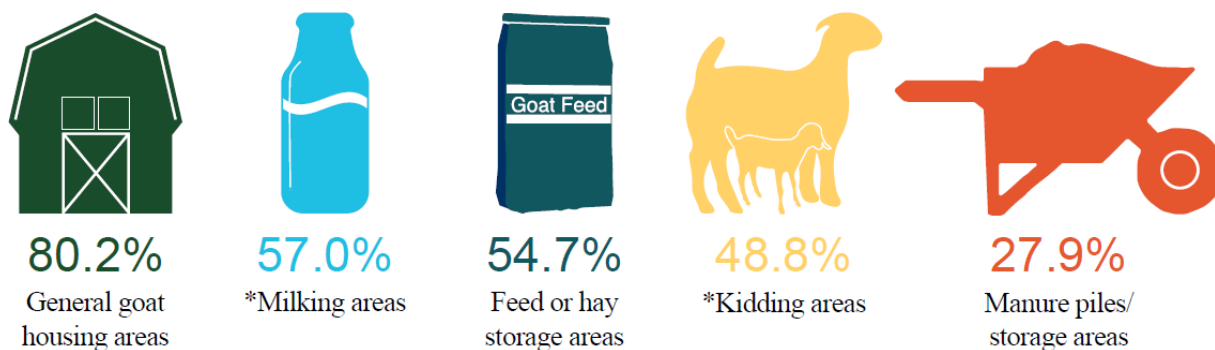
Figure 2. Percentage of total visitors by month and percentage of total visitor days by month



ACCESS AREAS AND ANIMAL CONTACT

The risk of exposure to disease-causing agents can vary across different farm areas accessible to visitors. Kidding areas, manure piles, and feed or manure storage areas may have a relatively higher risk of zoonotic disease transmission for pathogens such as *E. coli* and *Salmonella*. Overall, fewer operations allowed visitors access to these areas compared to lower risk locations on the farm, such as general goat housing areas and milking areas (figure 3).

Figure 3. Percent of operations that allowed visitor access to certain farm areas

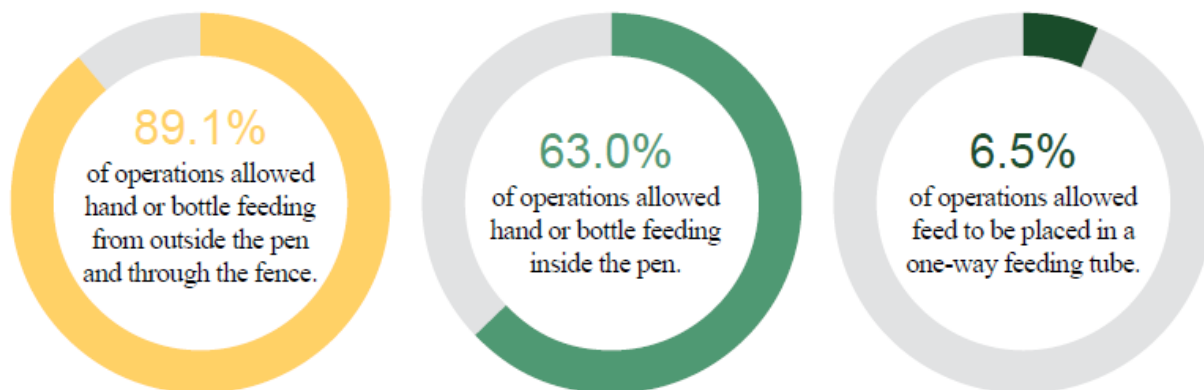


*For operations with milking and kidding areas only. Overall, 25.6% and 10.5% of operations did not have milking or kidding areas, respectively.

The nature, duration, and type of goat that visitors contact can influence zoonotic disease transmission risk. Most operations allowed visitors to interact with adult goats that were not kidding (94.2 percent of operations), weaned kids (91.9 percent of operations), and preweaned kids (87.2 percent of operations). Fewer operations allowed visitors to interact with newborn kids and does that were kidding (38.4 and 26.7 percent of operations, respectively). Restricting access to newborn kids can help mitigate the exposure to enteric pathogens and minimizing access to kidding areas may help reduce exposure to Q fever if it is present on the operation.

Overall, 53.5 percent of operations allowed visitors to feed goats. Minimizing pen access and using a one-way feeding tube are two ways to prevent the unintentional spread of enteric pathogens. Overall, 89.1 percent of operations allowed hand or bottle feeding from outside the pen and through a fence, while 6.5 percent of operations provided a one-way feeding tube (figure 4).

Figure 4. Percent of operations by goat feeding method used



TRANSITION AREAS AND VISITOR FLOW

Transition areas facilitate how and where safe animal interactions occur to reduce the risks of zoonotic disease transmission, and use tools such as signage, movement control, and hand washing stations. These can involve a one direction flow of visitor traffic with transition areas at the entrance and exit or controlled movement in more than one direction with one transition area; this allows for both minimizing high risk items from entering animal contact areas and for proper procedures like handwashing on the way out of animal contact areas. Overall, 53.5 percent of operations had a clearly defined transition area (physical or conceptual) between animal and non-animal areas and 39.1 percent of these operations had the transition areas marked by visible and easily understood signage that includes animal area expectations.



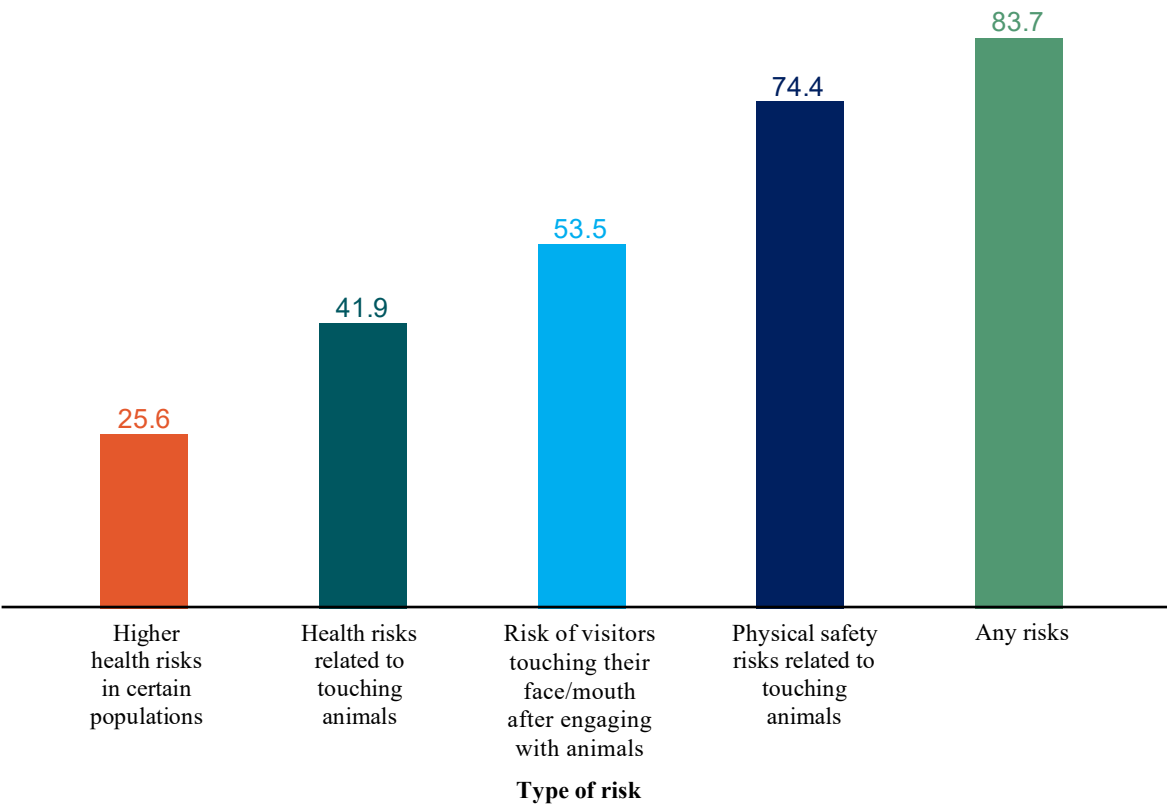
A transition area is a physical or conceptual space that separates animal areas, where animals are available to visitors, from non-animal areas, where animals are no longer available to visitors.

A majority of operations (83.7 percent) used a guide to escort visitor groups through the goat visitor areas. For operations that did not escort visitor groups, 64.3 percent had employees available throughout the goat visitor areas to answer questions and help direct visitors.

COMMUNICATION OF RISKS AND POLICIES

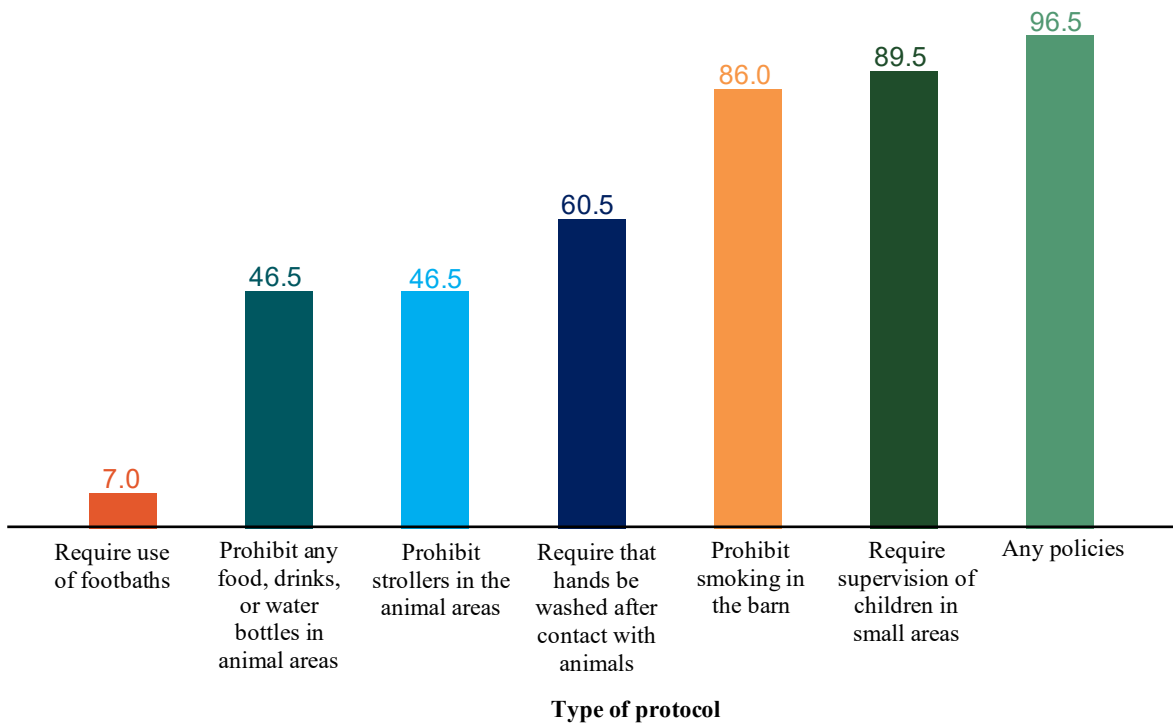
Visitors should be aware of the risks associated with participating in goat agritourism. Communicating these risks and policies to protect visitors, either verbally or with signs, is important to mitigate the potential for illness or injury. Overall, 83.7 percent of operations warned visitors about potential risks, with 9.7 percent of those operations having signage present to communicate those risks. Health-related risks were communicated, either verbally or with signs, less frequently than physical safety risks (figure 5).

Figure 5. Percentage of operations that warn visitors regarding risks, by type of risk



In addition to communication of risks, farms can establish visitor policies to ensure that visitors, personnel, and animals involved in agritourism remain safe. Policies were communicated by the presence of signs and/or verbal communication on 96.5 percent of operations (figure 6). Of those operations that communicated any policies, 20.5 percent had signs to communicate policies and 97.6 percent communicated policies verbally.

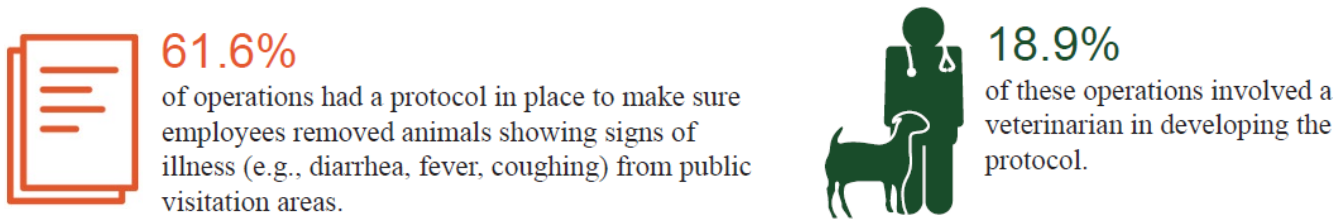
Figure 6. Percentage of operations with required policies, by type of policy



ANIMAL CARE AND CLEANING PROTOCOLS

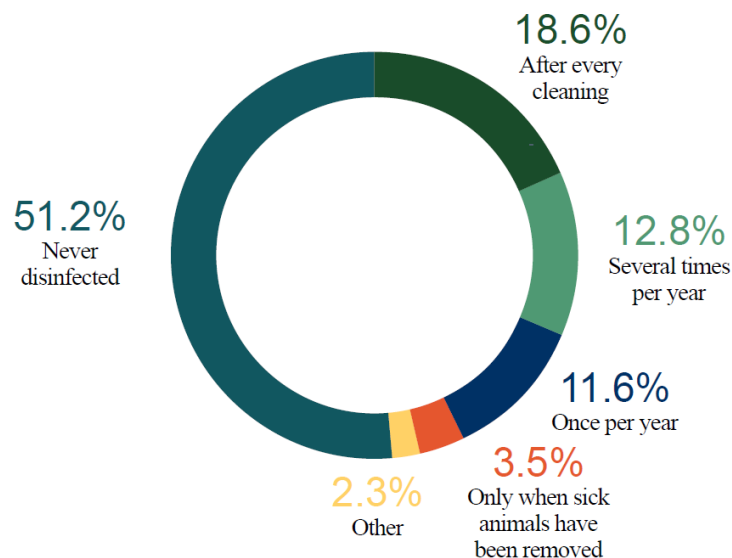
Animal care and cleaning protocols on operations have important public health implications. Veterinarians are integral to developing safe agritourism health protocols, yet they are not commonly involved in operations’ protocol development (figure 7).

Figure 7. Protocol development for the public visitation area regarding removal of animals showing signs of illness



Cleaning and disinfecting areas that are accessible to visitors minimizes the number of pathogens visitors may encounter. For the purpose of this study, disinfectant was defined as using a 1:10 bleach dilution, phenolic product, (1-Stroke Environ® or SynPhenol- 3™), accelerated hydrogen peroxide product (Intervention™), or lime. Goat visitor areas were cleaned of manure and debris, on average 3.5 times per week. The frequency of disinfection was variable across operations with about half never disinfecting the visitor areas (figure 8).

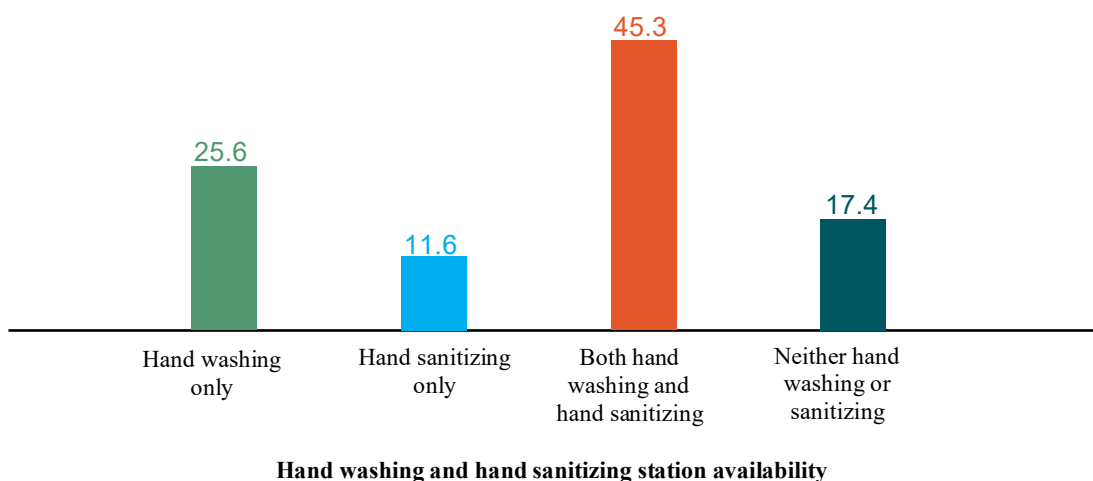
Figure 8. Percentage of operations by frequency in which operations disinfected goat visitor areas



HAND-WASHING STATIONS

Hand-washing stations can be simple, but should provide water, soap, and a method to dry hands. Hand-washing stations should be present in areas where visitors have access to animals, near restrooms, and in any location where food or drink consumption is allowed. Hand sanitizer is not a substitute for hand-washing stations, but it can be provided in addition to hand-washing. Overall, 70.9 percent of operations had hand-washing stations with soap and water available to visitors when they exited the goat visitor areas, with 25.6 percent having hand-washing stations only and 45.3 percent having hand-washing stations and hand sanitizer available (figure 9). Of those operations that had hand-washing stations, 73.8 percent had both hot and cold water available.

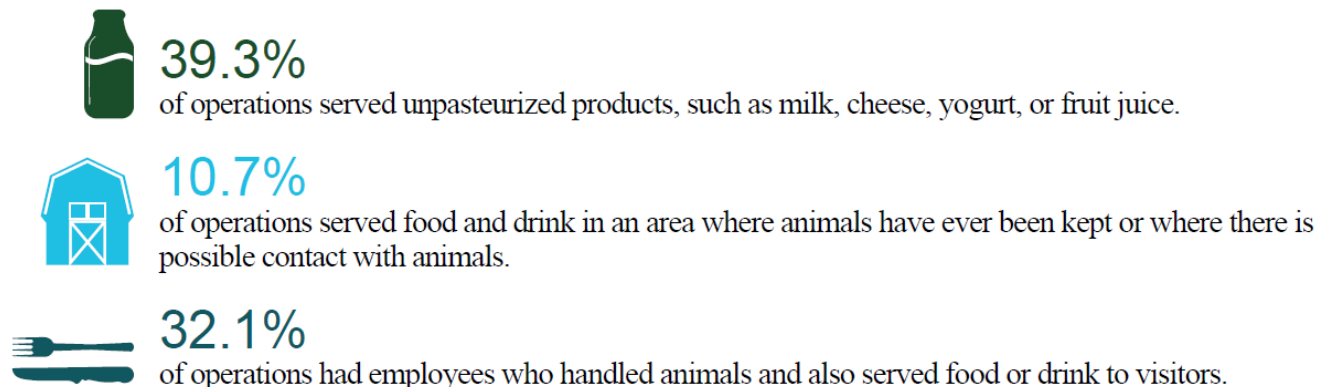
Figure 9. Percentage of operations by hand washing and hand sanitizing stations available to visitors when they exit the goat visiting area



FOOD AND DRINK AVAILABILITY

Food and drink access on an agritourism operation may create a risk of pathogen exposure either in the food products themselves or through oral ingestion by contaminated hands or environment. Overall, 32.6 percent of operations had food or drink available for visitors as samples or to purchase, but operations' food and drink protocols varied (figure 10).

Figure 10. Food and drink practices on operations that had food or drink available to visitors



INSURANCE POLICIES

Insurance policies specific to the agritourism nature of the operation can help protect the farm from potential lawsuits and issues that may arise due to illness or injury. Overall, 57.0 percent of operations had met with an insurance agent about protecting their farm through policies specific to agritourism activities, and 83.7 percent of those operations added policies specific to public visitation on their farm.

CONCLUSION

As the goat agritourism industry grows in popularity, the importance of ensuring goat producers have access to information about ways to protect human and animal health also increases. In this study, the implementation of biosecurity practices and protocols varied across operations, suggesting a need for more information about risk management for producers who invite visitors onto their operations. Hand-washing stations, signage informing of safety and public health risks, visitor policies, and flow of visitor traffic are options for increasing visitor safety on goat operations. Partnering with a veterinarian on the development of protocols for an agritourism operation can mitigate the risk of transmission of pathogens between animals and visitors, while also safeguarding animal health and promoting animal productivity.

Agritourism serves as an important role in helping the general public learn about agriculture and animal production. There are many online resources available for agritourism operations, including checklists, informational materials, risk and policy signs, and virtual walk-through assessments to help operations understand and self-assess risks and to identify mitigations. Additionally, agritourism operations may consider working with their local veterinarians, university extension, or goat-specific producer organizations to attend workshops or informational meetings to learn more and share best practices in agritourism biosecurity and risk management.

To see new publications regarding this study, please visit www.aphis.usda.gov/nahms or scan the QR code. Materials will be updated regularly as they become available.



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