Biosecurity is a system of practices designed to reduce the risk of disease introduction into a herd and prevent the spread of disease within a herd\textsuperscript{1}. Because disease transmission to even one animal can affect the health of the entire herd, biosecurity practices are an important part of the health management plan of all operations. Good biosecurity practices include proper handling of new animals and visitors; regular veterinary consultations; limiting contact with other animals; use of animal identification; and management of kidding areas and kidding products to minimize environmental contamination. Ideally, goat producers should work with a veterinarian experienced in livestock production to develop practical and cost effective biosecurity practices that reduce disease risk\textsuperscript{4}.

**Herd Additions and Quarantine**

Adding new animals to a herd can introduce disease. One way an operation can prevent disease introduction is to keep a closed herd (adding animals only through kidding on the operation), although adding new animals from outside the herd is a great way to improve stock and bring in new bloodlines. When added, new animals should be quarantined and monitored for signs of disease. The duration of isolation must be sufficient for diseased animals to show clinical signs; however, it is important to be aware that infected animals may shed viruses without showing clinical signs.

Another good practice is to require health management measures prior to introducing new animals. These measures can include veterinary examination, disease testing, deworming, and vaccinations.

**Physical Contact with Other Animals**

Aside from new additions, there are other ways that an operation’s goats can come into contact with goats from another operation (show/breeding, fence line, visiting goats/sheep or any other). Domestic and wild animals often serve as reservoirs (sources) of disease and minimizing contact with these animals is another important biosecurity measure.

**Visitors and Vehicle Restrictions**

Some infectious agents can be spread via footwear and vehicles; therefore, limiting visitor access to goat raising areas and disinfecting trucks that visit other operations are important biosecurity measures.

**Manure Handling Practices**

Using the same equipment for handling both feed and manure can lead to the spread of disease.

**Access to Stored Feed and Goat Facilities by Other Animals**

Rodents, cats, and other wildlife may serve as a reservoir for various diseases.

**Kidding Management**

Does that become infected with certain pathogens for the first time while pregnant may abort, kid early, or have small or abnormal kids. Therefore, keeping first kidding does away from others until after they have kidded may reduce the risk of infection\textsuperscript{1}. Cleaning the manure and waste bedding and prompt removal of placentas and aborted fetuses are good biosecurity practices. Dogs or cats can move placentas to areas that might contaminate feed, promoting transmission of infectious organisms.

**Animal Identification**

The use of individual animal identification (ID) [a unique number assigned to each goat] and/or herd ID (farm name, or a number unique to the farm) can be important tools in disease management and control. ID helps producers monitor important production parameters and makes it possible to trace an animal to its herd of origin if disease is diagnosed after an animal has been moved. Free official USDA tags and applicators are available by calling toll-free 1-866-873-2824 (1-866-USDA-TAG).

Risk assessment helps to determine the areas or factors are most likely to lead to the spread of infectious agents. Risk management is the second step. At this point a preventive plan is developed and implemented. The final step is the risk communication. In this step, all members of the farm management team, and visitors are informed of the plan to ensure cooperation and buy-in. To make this concept easier to understand risk areas are being color coded and classified as low risk (green), moderate risk (yellow), and high risk (red). A veterinarian can help identify and manage biosecurity problems, recommend preventive measures and develop a biosecurity plan designed to reduce biosecurity risks\textsuperscript{5}.
Biosecurity Risk Assessment Chart for Visitors

Upon arriving at the farm or business enterprise, each visitor should check in at the house or office upon arrival and be classified as a low risk visitor (low risk farm, low animal contact), medium risk visitor (moderate risk farm, low animal contact) or high risk visitor (high risk farm, high animal contact). No visitor should be allowed to bring along a dog or other pet and all visitors should be required to wear clean clothing and boots or have disposables or guest clothing and boots available for them onsite. The degree of biosecurity risk depends on the person-family friend, neighbor, fellow producer, veterinarian, employee, feed delivery person, extension agent, foreign guest, etc. - and his or her habits, travels and business. Good biosecurity practices should be part of the preventive health management plan of all operations\textsuperscript{2, 4}.

<table>
<thead>
<tr>
<th>Activity\textsuperscript{3}</th>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other farm visits per day</td>
<td>One farm, little to no animal contact</td>
<td>Occasionally visits more than one farm/day, minimal animal contact</td>
<td>Visits many farms or livestock facilities. Much animal contact</td>
</tr>
<tr>
<td>Ownership of similar animals</td>
<td>Does not own similar species at home</td>
<td>Similar species at home but different production type</td>
<td>Owns and/or cares for similar species and production type at home</td>
</tr>
<tr>
<td>Contact with potentially ill or infectious animals</td>
<td>Minimal or no contact with potentially ill or infectious animals</td>
<td>Contact with healthy animals but avoids contact with potential infectious animals</td>
<td>May own or be exposed to many animals of unknown or poor health status</td>
</tr>
<tr>
<td>Use of protective clothing</td>
<td>Wears sanitized shoes or boots. One pair of coveralls per site</td>
<td>Wears sanitized boots and clean coveralls. If clean, may not change coveralls</td>
<td>Does not wear boots or protective clothing or wears same clothing between farms</td>
</tr>
<tr>
<td>Leaves or borrows supplies, equipment</td>
<td>Supplies and equipment kept away from animals or feed areas</td>
<td>Supplies and equipment in areas of minimal or feed contact</td>
<td>Supplies and equipment may be left in animals or feed areas</td>
</tr>
<tr>
<td>Work in animal contact areas</td>
<td>Does not work in areas with highly susceptible animals</td>
<td>Minimal exposure to high-risk animal and only with protective equipment</td>
<td>Works with highly susceptible animals. Few precautions taken</td>
</tr>
<tr>
<td>Biosecurity knowledge</td>
<td>Understands and promotes biosecurity practices</td>
<td>Exposed to biosecurity principles but is not an advocate</td>
<td>Little appreciation for biosecurity principles and does not view it as important to the industry</td>
</tr>
<tr>
<td>Foreign travel</td>
<td>Does not travel outside of the U.S. or Canada</td>
<td>Limited travel outside the U.S. or Canada, with minimal or no animal contact</td>
<td>Travel to foreign countries with animal contact in those countries</td>
</tr>
<tr>
<td>Foreign visitors</td>
<td>Prohibits foreign visitors contact with feed or animals</td>
<td>Foreign visitors allowed in animal or feed areas following adequate quarantine</td>
<td>Visitors are permitted in animal or feed contact areas without screening or quarantine</td>
</tr>
</tbody>
</table>

References

Animal Health and Food Safety Services
Animal Health Branch
Headquarters - (916) 900-5002
Redding District - (530) 225-2140
Modesto District - (209) 491-9350
Tulare District - (559) 685-3500
Ontario District - (909) 947-4462
USDA-APHIS-VS (916) 854-3450 or (877) 741-3690

Free official USDA tags and applicators are available by calling toll-free: 1 (866) 873-2824 or 1 (866) USDA-TAG

For more information, please visit: www.cdfa.ca.gov/ah