Producer Perceptions of Food-Borne and Zoonotic Diseases Associated with Sheep and Goat Farms and Products

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Objectives:
1. To determine how goat producers perceive zoonotic and food-borne diseases in their animal production;
2. To determine directions for new research; and
3. To determine effective ways to communicate that research to producers.

Background: We conducted six focus groups with sheep and goat producers in Southern Ontario during November 2009. The results provided us with insight as to producers' perceptions of food-borne and zoonotic diseases in the sheep and goat industries, as well as producers' preferred means to receive the results of research projects. The focus groups were also used to inform the content and vocabulary of a questionnaire that was used in a postal survey to explore these perceptions on a larger scale.

The postal survey was conducted from March 1 to April 16, 2010, and questionnaires were sent to dairy goat, dairy sheep, meat goat, and meat sheep producers across Ontario. We worked with our industry partners to mail the questionnaires to their members, in order to maintain the confidentiality of membership lists. We mailed questionnaires to all known 255 dairy goat producers, 40 dairy sheep producers, and 109 meat goat producers in the province. We mailed questionnaires to a random sample of 450 producers from the estimated 3500 meat sheep producers in the province. Overall, we obtained very good response rates in both the dairy goat and meat goat groups (53.8% and 60.6%, respectively), and average survey response rates in the dairy sheep and meat sheep groups (32.4% and 29.3%, respectively).

Results:

Perceptions of food-borne and zoonotic disease risks

We asked producers to indicate their level of concern with 13 different sheep/goat zoonotic diseases with respect to human health. The responses indicated that for many diseases, there was concern among producers with respect to human health. Diseases where concern for human health was particularly expressed included: Johne's Disease, Listeriosis, E. coli 0157:H7, Orf, and in the goat groups, Q-fever and Chlamydophila. However, it should be noted that there was also a high level of uncertainty expressed by producers for several zoonotic diseases, including: Campylobacter, Giardia, Salmonella, Q-fever (sheep groups), Chlamydophila (sheep groups), and Listeriosis (dairy sheep group).

Producers' support for more food-borne & zoonotic disease research

We asked producers to what extent they support more research on food-borne and zoonotic diseases being done in the sheep/goat industries. The majority of producers (69.0% to 90.0%) in all industry groups indicated being supportive or very supportive of such research; only a very small proportion of producers in all groups (0 to 1.8%) reported that they were unsupportive/very unsupportive.

We also asked producers to indicate the extent to which they wanted more research on each of 13 specific food-borne or zoonotic diseases. The "top 3" most wanted research topics based on the highest proportions of "really want" and "want" responses combined are presented in Table 1.

Table 1: The "top 3" research topics reported to be most wanted among Ontario small ruminant producers, March-April, 2010

	Topic by Ranking (% of producers "want" or "really want" research on the topic)		
Industry Group	**#1**	**#2**	**#3**
Dairy Goat	Listeriosis (68.2%)	Johne's Disease (66.4%)	Chlamydophila (64.9%)
Dairy Sheep	Johne's Disease (72.8%)	Listeriosis (63.7%)	*4-way tie:* Chlamydophila, Cryptosporidiosis, Orf, Salmonella (54.6%)
Meat Goat	Johne's Disease (81.9%)	E. coli O157:H7 (78.6%)	Chlamydophila (77.1%)
Meat Sheep	Johne's Disease (64.0%)	Cryptosporidiosis (63.8%)	Listeriosis (63.2%)

Johne's Disease, Listeriosis, and abortions due to Chlamydophila were highly-rated in almost all of the industry groups. Q-fever was also highly desired among dairy goat and meat goat producers, being ranked 4th (60.6% and 75.4% of producers, respectively).

Identification of producers' preferred Knowledge Translation & Transfer (KTT) activities
Producers participating in this project were asked which KTT methods would be most useful in disseminating to them the results of research. Participants suggested a variety of possible methods in the focus groups; these were further explored in the postal survey. The KTT methods considered most useful by producers were: summaries delivered via regular mail, summaries delivered via milk truck drivers (dairy producers only), articles in industry publications (including magazines and newsletters), a paper copy of a producer handbook outlining results, and for the dairy sheep and dairy goat producers, face-to-face meetings between researchers and producers (e.g. at industry groups' annual general meetings).

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