

Panel Discussion

Question: The first question here is for Doctor Thomson, he said in his talk that *pasteurella hemolytica* is not found in exhaled air from cattle with the organism in the nasal cavity. Does droplet infection then not occur as a means of spread of this disease? What role does it play in the spread of disease?

Answer: That refers to droplet infection? That is difficult to say. Many of those animals snort and then a lot comes out and you notice in sick animals that they do that. The question is a good one and I think in the situation where we had those animals, they were very quiet and held the tube up. Maybe that was a little different if they are running around and doing things in the feedlot. So, I am not sure, I would really have to look at whether oral infection in licking and that sort of thing is important in getting that floral change established and probably then droplet infection is important from there down into the respiratory tract. I take it the question refers to between from animal to animal and that is still a question mark.

Question: Question for Doctor Church. Could you elaborate how you would get improvement of the relapse rate? And also, is there a point in an outbreak that you would mass medicate? What about water medication?

Answer: I think that the first question is how to improve the relapse rate. Usually, it would be my opinion that you can improve any relapse rates by improving the first treatment response rate and I mean by first treatment, the drug that you start with. I think that the second part of that question about the point in an outbreak, the pull rate, and so on, when to mass medicate was pretty well covered by Doctor Janzen. I will agree with his philosophy, it is a question of making an assessment of how fast you think the pull rate is rising and where you decide to abort the whole thing is between you and the owner. Water medication is entirely satisfactory, it is a matter of physical delivery, you may do a small group of animals and deliver it to them by individual injection just as easily. The other component of the relapse rate is to improve the response rate in the first treatment and secondly, to insure that the animals were treated a sufficient length of time. This generally, a sufficient length of time could be summed up by saying to make sure that you treat them for at least long enough so that they have two days of normal temperature before you take them off treatment. If their temperature is down to normal for two days then they can come off treatment. That won't eliminate them all but it will often improve a bad situation.

Question: Not audible.

Answer: I don't know whether there are any comments on cattle that come off cars this week. I certainly agree with you that if they get here quickly enough there are few problems. But, if you get the situation when you open these boxcars that carry these calves and you have to pull several out, you are in trouble. I think that under those circumstances you really don't know what really happened, you don't know where the problem was but if they are arriving down here with dead calves, you are in trouble.

Question: Question for Doctor Wilkie. Doctor Clyde Smith in Ohio has developed a live intradermal vaccine of *pasteurella hemolytica*. Where does this vaccine fit in the scheme of immune response?

Answer: This question has come up a number of times at different meetings and I have spoken with Dr. Smith about this and as far as I know, he is using this material in field trials and has not used it in the laboratory trials. However, I agree with his sentiment. I think he is using a live bacterium which I believe in theory would be an improvement. I don't agree with the idea of using such a thing intradermally. I think that that is all right to gain information, but I don't believe it is practical in the long run. He says it works. I know he is doing field trials. I agree with his sentiments in using the live rather than a killed form but I doubt if this is going to be a long haul solution to the problem.

Question: Are hemophilus bacterins useful in preventing bovine respiratory disease or in any disease?

Answer: Well, I think that we saw some data from Dr. Martin this afternoon. At least there was not a negative respect there as I recall. You cannot correlate the use of hemophilus bacterins with enhanced mortality or increased mortality. So, there was no difference, so there is no detrimental effect. Whether there is a positive protective effect, these bacterins do hold up in laboratory trials, both in trials conducted by the company that manufactures them and more recently at Guelph, they held up pretty well against live challenge. How do they do in the field? I really don't know.

Moderator: I think Bruce that was against the nervous form of the disease they were involved with.

Dr. Wilkie: Yes, that is right. Against the respiratory form, I just don't know. There have been no effective respiratory challenges yet with *hemophilus somnus*, it is difficult or impossible in the laboratory to produce pneumonia as a challenge system to test whether or not the bacterins work. This should be done.

Answer: I think that in the Bruce County project, of all the cases of fibrinous pneumonias, very few of them were due to hemophilus. They were practically all *pasteurella hemolytica* and not that we could not get hemophilus from them.

Question: I wanted to ask either Dr. Church or Dr. Janzen to tell us how you do a pre-treatment sensitivity. Do you use nasal swabs or lung from dead animals? How long does it take and if you wanted to do it today, what would you actually do?

Answer: There are probably a variety of ways, I certainly don't do tracheal washes. When we make a feedlot visit, we take the day's "pulls" that the day before have been treated and take Teglan swabs and do deep nasal swabs. Teglan swabs are basically canulated swabs and we put those about six or seven inches into the nares and simply take a sample. Any other animals that are fresh at the time of necropsy and that have not died of respiratory disease, we usually have their lungs cultures as well.

Dr. Martin: Just to go back to that, did you assume then that, let's suppose that you have a group of really sick animals, do you do a pre-treatment sensitivity in the face of an acute outbreak or do you just do it for convenience to keep yourself informed?

Answer: I'm not sure that I understand. I think that we just do it routinely, rather than just use the information that we get from necropsies of animals that have died with respiratory disease. I find that I don't know how to interpret that because invariably they are resistance to every antibiotic I have used. Therefore, it has been my humble understanding, the only alternative I have is to do sensitivities on animals before they die or before they have been treated and so how much that swab we are taking out of the nose represents what those animals are sick with. I suppose this is another matter. I guess that I consider that to be the second best alternative that we have. I am not sure that I know the answer to that.

Dr. Wilkie: I will try to answer a few questions very briefly. Comments on transportation. We do not see a significant difference in morbidity or mortality rates between truck-shipped and train-shipped western cattle, although there is a tendency nonetheless for train-shipped cattle to do somewhat better. I completely agree that when you open the car door and two dead ones fall out, you can predict no matter how they got there, truck or train, that you are in trouble. But, there does not seem to be a good correlation between the two. We see as many "wrecks" in one as we do in the other. We do think we see more cases of urolithiasis in train-shipped cattle than in truck-shipped cattle. Whether that is a water deprivation type thing or not, I don't know.

In the Bruce Country project, who decided if the cattle were vaccinated? The cattle owners and their own veterinarian.

What reason do producers give for wanting to vaccinate? We have chin wagged a lot about this with both the owners and veterinarians. We really have not done a study on it. My guess is that it is a whole variety of reasons, not the last of which are the pretty pictures you see in all the cattlemen's magazines and so on, showing the dramatic response after vaccination!

What is the correlation between the size of groups and the size of feedlots? Really there is not a good correlation between them. There is the odd, bigger feedlot that we cannot do anything else except call a group of 1200 animals because of the way they mix and sort and so on. We cannot get away from that but there are other people who feed a thousand cattle who keep their cattle in nice groups of 90 to 100. So, in general, there really is not a very good correlation between the two.

Are the larger feedlots more likely to vaccinate than smaller feedlots? In general, yes. The larger feedlots are based on the corn silage situation, they want to implant their cattle, process their cattle, get them on feed, get some weight on them and they also tend to vaccinate them at the same time.

Any correlation between the type of housing and whether the cattle were vaccinated? No, surprising enough, we did very detailed studies on housing, we measured barns, we counted water tanks, we measured surface area, we measured feedbunks, and so on. We do not see much of a relationship, but again I think that stress is a factor. The more times cattle were moved from one barn to another, those cattle tended to do worse than cattle that were put in one barn irrespective of type and left alone.

Question: How much is fed per head per day?

Answer: We don't really have very good data on that.

Question: You didn't check to see if they were eating hay better than corn silage?

Answer: No, visually they appear to be but that is all that I can say.

Second Answer: I don't think that there is any doubt though that we have been trying to follow up some of the work that he has done in respect to corn silage and we are putting cows on corn silage free choice. In one group, just hay, and there is no question that these cows in the first week will eat a lot more hay than corn silage. They will just back off from it. So that may be

part of the problem.

Dr. Wilkie: I just might make a comment, in the other situation where we tend to visually see these calves really dive into the corn silage you get into real problems there because they get digestive upsets and they are all scouring, etc. But I don't have adequate data on this.

Question: I get the impression that pasteurellosis does not play a significant role in respiratory disease . . . is that so?

Answer: Dr. Thomson: I think that you can get it out of the lungs very often in the same way that you would with an enzootic pneumonia and you can culture it without any trouble at all. But it does not appear to be significant in these acute cases. But it will certainly keep a subsequent kind of a bronchial pneumonia smouldering. It may require therapy alright. It probably does not set off the acute fires that are the major problem.

Question: Not audible.

Answer: That is probably true. In the same way with enzootic pneumonia, you have the virus first and then you end up dealing with multocida.

Question: I was wondering if Dr. Martin had some recommendations made in the County Study that vaccinations be held off until approximately a month or later after the animal has been introduced to the feedlot. What do you suggest in cases where we have a continuous introduction in the feedlot, where there is always endemic IBR. Would you vaccinate them on arrival or would you just let them take their chances?

Answer: I would repeat the assumption that, because of the negative findings of vaccination on arrival, we are looking at prevaccinations, but I have to agree with Dr. Janzen, that if you look at the literature, despite what we might think about it, the literature is not all that positive. The other thing that while we are recommending delaying vaccination and we have evidence in corn silage fed cattle that will improve the results by reducing negative effects by not making them positive, we are only guessing that that is a lot better. We really don't have data on it. To answer your specific question, if you have endemic IBR I would not vaccinate the animals, that is exactly the situation that Dr. Curtis did his study on with intranasal vaccine and I think the results speak for themselves.

