



Western Dairy News

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For the West, About the West, From the West

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Health Issues to Consider

When Selecting a Calf Ranch

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The focus of this article is on the health issues associated with sending your calves off to be raised on a calf ranch and not on the economic issues of how much does it cost per day or per pound of body weight gained. This also assumes that any dairy producer will talk to the neighbors about the ranch where they send their calves. The health issues revolve around what potential pathogens, antibiotic residues and immune status your calves might bring home when they come back to the dairy.

Pickup vehicle: Calf pickup trailers or trucks should be routinely cleaned and disinfected to prevent buildup of manure and harmful bacteria. A quick look into the vehicle can give a good idea if and how often this is being done. Otherwise, ask about it. Beyond sanitation, it is also important that the baby calf be carried in vehicles used only for calves. Vehicles used for adult cows could be contaminated with manure containing Johne's disease or salmonella that could infect the calves for life. Calves are commonly picked up on the day they are born, at which time they are more susceptible to infections than any other day in their life.

Pre-weaning Feeds: It would be important to know what steps are taken to ensure that these future replacements get appropriate amounts of high quality colostrum to assure adequate colostral protection against disease. In addition, it would be wise to find out what if any colostrum supplements are being given to aid in disease prevention. Many calf ranches collect and feed waste or hospital milk. If that is the case, this milk should be pasteurized. The often-suggested temperature and time for batch pasteurization is 145° F for 30 minutes. Other studies have suggested that 155° to 160° F is necessary to reduce transmission of Johne's disease bacteria. When flash pasteurization is used the necessary temperature is 162° F for 15 seconds.

Many calf ranches also pickup surplus colostrum. This pooled colostrum has a high likelihood of being contaminated with Johne's bacteria. To prevent Johne's disease in your herd, avoid ranches that feed pooled colostrum.

It would be equally prudent to know about use of waste milk from the standpoint of bacterial antibiotic resistance. Waste or hospital milk will contain antibiotics in amounts much less than that needed for treatment. These small amounts of antibiotics may induce bacteria to develop resistance making future treatments much more difficult.

Housing and Bedding: Ideally, the housing units should not permit calves to touch each other as some bacteria can be transmitted by saliva and calves like to suckle on each other. Bedding

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Western Water's Rippling Effect

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Washington's 2000-2001 winter was the driest in 25 years and one of the five driest in the past century. The drought was not just a phenomenon of one year, but was an accumulation of several below-normal precipitation years. With the heavy rains and snowfall through most of November and into December, precipitation amounts are running 2-4 times more than a year ago, with accumulation totals from 108-141% of average. However, ground water reserves were so depleted that the effects of the drought will continue into the summer of 2002. Similar results are being reported in most other western states.

Agriculture has dealt successfully with droughts before, however, this time the "Domino Effect" rippled all the way to California and back again in the form of substantially higher electrical power rates, water use and volume restrictions. Suddenly the priorities of differing segments of the population were at an impasse. Power-hungry population centers were suddenly without continuous dependable power to run overloaded air conditioners and computer systems. Fish were dying from lack of water that now was in higher demand for power generation. Endangered Species Act regulations and Tribal treaty agreements demanded certain flow rates in the streams. Suddenly, agricultural waters were severely limited or cut off completely. Their shortages triggered conflicts not seen since the days of the early pioneers of the "Old West".

Although the drought conditions have improved substantially, the debates continue to echo through the halls of legislatures as the West comes to grips with water issues across state lines and under conflicting regulations. The farming community just hates getting rural issues noticed by the government because often the perception is, "the medicine is worse than the disease and once the disease is gone the bad tasting medicine lingers on." By December 2002, all water withdrawals or diversions over 5,000 gallons per day must be metered, inspected, and reported. Any decision related to applications for water-rights change or transfer must now be posted on the web for 30 days for public comment. Although water policy varies from state to state, the principle issues are the same, thus requiring farmers to be vigilant against any attempt to pull the plug on agricultural waters.

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Risk of Purchasing Johne's Disease in Replacement Animals

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The United States Animal Health Association's National Johne's Working Group has been suggesting strategies for preventing the entry of Johne's disease (JD) into dairy herds that are not already infected or that have begun programs to eliminate JD from their herds. Beyond the mandatory efforts to prevent newborn calf infections in the calving pens, one of the strategies suggested is to reduce the risk of bringing in infected replacements by purchasing replacements from herds with known low JD-status.

In a recent *Journal of Dairy Science* article by Dr. Scott Wells concerning biosecurity of dairy operations, calculations were made to estimate the probability of purchasing JD infected animals depending on the level of infection in the herd from which the animals were purchased. Information from that article is the basis for Figure 1, illustrated on page 4.

The risk of purchasing at least one JD-infected animal can be seen to vary significantly as the herd of origin changes. In Figure 1, a JD-infected herd is assumed to have 10% of the cows infected. The general population of dairies with unknown JD-status is thought to have about 2.5% of the cows infected. When the general population from which you purchase cattle includes only those herds that have been testing for JD with the ELISA test and removing JD-test-positive cows, about 1.9% are assumed to be JD-infected. Herds that have tested negative and achieved Farm Status Level 1 under the US Voluntary JD Herd Status Program are assumed to have a prevalence of about 1.25%. At Farm Level 2, 0.1% prevalence is assumed.

So what does all this mean? If you are expanding your herd by purchase of replacements and you are buying replacements from dairy herds that are known to be JD-infected, that you can expect to get JD-infected animals. Buying more than 20 replacements from a JD-infected herd has an associated 90% probability of getting at least one JD-infected animal. If your purchased replacements come from several herds, as is usually the case, and these herds include some JD-infected herds and some non-JD-infected herds your risk is reduced. Buying the same 20 replacements under these circumstances has an associated 40% probability of getting at least one JD-infected animal.

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should be other than recycled manure from adult cows to prevent Johne's infections. Enough hutches should be available to allow them to be cleaned, disinfected and remain vacant between calves.

Vaccinations: It will be important to know what vaccines are given to the calves, whether they are modified-live virus or killed as well as when and how often they are given. This information will allow follow-up booster to be given at the appropriate times once the calves return to the home dairy. Request a written record of the vaccinations from the ranch you choose and match up your vaccination program to insure maximum protection.

Treatments and Mortality: Some antibiotics used to treat sick calves such as gentamycin will result in very long-term antibiotic residues in the calves. It will be very important to know what antibiotics have been given to your calves in order to avoid a meat residue if calves are shipped off your dairy. Ask to see written treatment protocols for antibiotic treatment use or get a treatment report with each load of returning calves. Also check for the mortality history of the calf ranch.

Pest and Parasite Control: Control of pests like flies is important. Large fly buildups may result in eye scars on calves due to pinkeye. Flies may also transmit mastitis pathogens to the calves and cause teat-end damage due to their bites. External and internal parasites should also be routinely treated. Often the milk or milk replacer may contain compounds to control coccidian and related parasites.

This health information can help you evaluate the true economics of your calf rearing program, which involves the cost of rearing plus the value of the heifers that return to enter your milking herd. The goal should be to get back all the heifer calves you sent to the calf ranch without any additional pathogens like JD or salmonella, free from any antibiotic residues, and with good immune status ready for booster to complete their vaccinations. Doing business with a well managed calf ranch can make this goal a reality.

After you have thought through all these items, it would be worthwhile thinking about what might be done on your dairy to improve the calf-raising program so that the calves could stay at home under your complete control. If a dairy producer is really serious about the answer to this question, a thorough review of the calf-raising program by the herd veterinarian is in order.

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In order for a more equitable resolution, out-numbered and out-leveraged farmers are and must continue speaking boldly about water rights as well as other issues, including land-use. Their professional involvement has opened the eyes of the policy makers by demanding, "Show me the best available science before making final decisions." Agriculture has a wealth of information, used to arrive at best management decisions, and now that data can be used to authenticate agriculture's responsible stewardship.

Washington State's 2001 Legislature found ways to: 1) purchase and/or transfer temporary water rights for use in areas most impacted by the drought; 2) by way of the "Family Farm Act", convert water rights in urban-growth areas or within city limits to residential, municipal, or business uses; 3) provide substantial tax incentives for public water utilities to conserve and re-use water; 4) simplify the process of donating water rights to trust water right programs, while being protected from giving up any water they do not use; 5) allow food-processing plants authority to use reclaimed water rather than discharge it back into the ground; and 6) modify the water-relinquishment ("use it or lose it") statutes to allow for some exceptions.

2002 Legislation is poised to build more flexibility into how water is managed in order to meet changing needs in uncertain times. Since water cannot be manufactured, there is a desire for inclusion of incentives to store, conserve, and re-use water. There are three key objectives: 1) meet the needs of fish by determining minimum stream flow rates and specifying how and when those flows will be achieved; 2) address water needs of growing communities to enable water resource flexibility in planning for growth and maintaining a healthy economy, while meeting their environmental obligations for water conservation and fish protection; and 3) establish a more permanent fix of the outdated "use it or lose it" policies in order to provide more flexibility in meeting current and future water needs. However, hanging like a dark cloud over the process, are some major issues. First, restricting water rights in favor of maintaining stream flows for fish habitat and will those stream flow standards be based on biology or hydrology. Secondly, riparian buffer widths and whether these zones constitute a "take" of private lands thus requiring compensation. The CREP program has been modified to resolve farmer concerns in this area, however, most farmers feel that it is only a short-term fix disguising a long-term headache.

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Figure 1. The Probability of Purchasing at least one JD Infected Animal

Source of Cattle	Number of Cattle Purchased			
	10	20	30	40
Johne's Infected Herd	70%	90%	96%	99%
General Population	22%	40%	52%	65%
Testing from Gen Pop	19%	30%	42%	53%
Farm Level 1 Herd	12%	22%	30%	40%
Farm Level 2 Herd	1%	2%	3%	5%

Adapted from Wells, SJ. Biosecurity on dairy operations. JDS 83:2380-86. 2000

The risk can be greatly minimized by purchasing replacements from only dairies that are participating in the US Voluntary JD Herd Status Program and have achieved at least Farm Level 1. At this level, the associated probability of getting at least one JD-infected animals in a purchase of 20 replacements is about 22%. Review of Figure 1 shows that the lowest risk comes from purchase of replacements from dairies at Farm Level 2 (2% for purchase of 20 replacements).

The central issue is that purchasing animals exposes your herd to the risk of bringing in new diseases and increasing those diseases your herd already has. Since our current tests for JD are not very sensitive for detecting disease in individual cows, it is important to test the herd of origin for JD. If the source herd does not already test for JD, then it is well worthwhile to test the herd to help determine whether it is a high or low risk source of animals.

In summary, selection of the origin can be a powerful JD biosecurity tool for those dairy producers who are attempting to control the prevalence of JD in their dairies as they expand their cow numbers beyond their ability to produce replacements from within their own herd. Will they have to pay more for these selected replacements? Yes. However, the reduced risk of JD entry into their herds and long term economic gain from reduced JD influence on production and clinical disease will offset any one time increased cost to assure the JD-status of purchased replacements.

(Water, continued from page 3)

The bottom line is that farmers themselves must maintain a strong presence on policy boards and during legislative hearings. The influence of their hands-on approach is made much stronger and more credible when backed up with the science of their operations. Success may depend on building coalitions with different industries in order to carry greater clout. Demanding science-based decisions by policy makers is a two-edged sword and may require adjustments in agricultural operations...business is not going to be "as usual" as in the past.

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