Trying to diagnose the type of mastitis by its clinical signs is not accurate and often incorrect. Almost anyone can use milk cultures to make current clinical mastitis decisions when choosing the best antibiotics for the farm or choosing cows to treat. However, culturing cow’s milk to make future treatment decisions can be misleading. The next case of clinical mastitis may not be the same organism as the one you just cultured. Using a milk culture to identify the bacteria before treating requires withholding antibiotic treatment for 24 hours before starting antibiotic treatment.

In a study on a large Michigan dairy farm, waiting 24 hours before starting antibiotic treatment did not adversely affect the outcome of the infections or jeopardize the health of the animal. Mastitis episodes did not last longer and fewer days were lost to milk withholding for residue and un-salable milk. This protocol reduced treatments by 80% and saved on treatment cost.

Because of these results, many dairy farms have begun to use local veterinary laboratories or to establish “on-farm” diagnostic testing to culture milk before starting antibiotic treatment. However, before these diagnostic-treatment protocols can be used in dairy farms, someone must be assigned and trained to do diagnostic testing. This person also should be responsible for treating mastitis cases and monitoring cows with mastitis. If clinical mastitis is viewed as a catch-as-you-can by milkers, then this protocol will not be successful.

In this winter’s MSU Extension Dairy Team educational meeting (see page 12 of this MDR issue for the registration form), we explore the choices farmers have in diagnosing clinical mastitis and making treatment decisions. Knowing when not to use antibiotic treatment in some clinical mastitis cases can be just as important as using the correct antibiotic. It could be one of the best economic decisions you can make in animal health care.

The winter meeting will help you learn how to:
1) set-up an “on-farm laboratory” to culture clinical mastitis;
2) identify major groups of bacteria that cause mastitis;
3) use this information to treat clinical mastitis;
4) use antibiotic susceptibility Minimum Inhibitory Concentration (MIC) on your farm; and,
5) reduce chronic and re-occurring clinical mastitis. You can incorporate this information into your daily routine to make a difference.

Vaccinology: How Vaccines Work

Vaccines have long been considered an important part of disease control for most dairy farms. Understanding how vaccines work (or do not work) is important when developing a vaccination program for the farm. Not all vaccines are equal, and this segment of the winter program will help describe these differences.

Live vaccines are often made from modified less-active (attenuated) virus. They are useful in causing cells to change in the immune system so they can recognize the disease better and fight the infection. These vaccines are most useful when given in young cattle before the animals have had exposure to the disease. If this is the first time the animal experiences the disease it can respond at a cellular level (cell-mediated immunity) which has some great advantages in protecting the animal. Additional exposure to either live or killed vaccines can additionally boost the immune system by producing more antibodies. These live vaccines are commonly used with viral diseases such as Bovine Viral Diarrhea virus (BVDV).

Killed vaccines, viral or bacterial, are aimed at stimulating antibody production in the animal. These do not produce good cellular responses but produce antibodies that neutralize toxins and reduce damage by the disease. To get the best response, multiple inoculations must be given to achieve adequate antibodies to help the animal fight off the disease.

This presentation will discuss the use of vaccination, types of vaccines used, and how the body fights diseases.