susceptible to impairment at much lower levels of passively acquired antibody than cattle with acquired immunity. Even this latter group can have a depressed immune response to an antigen when sufficient levels of antibody are present. The level of antibody that will impair the immune response will vary depending on the specific antigen e.g. BHV-1 has a lower antibody threshold as compared to BVDV. The composition of a vaccine also has a direct impact on its vulnerability to antibody. Vaccines containing a small antigenic mass require replication in the host to produce a satisfactory immune response. These vaccines are highly vulnerable to the presence of antibody since the live vaccine viruses will be neutralized before they can replicate. In contrast, vaccines containing certain adjuvants, e.g., Freund's Incomplete, can form a barrier between the vaccine antigen and antibody that retards the formation of antibody antigen complexes.

This information is fundamental for evaluating a herd vaccination program and can be applied in two important ways:

1) **Evaluating the effectiveness of an existing vaccination program.**

   This involves a comparison of paired serum samples from the herd collected on the day of vaccination and on selected day(s) following vaccination. The subsequent data would indicate both the efficacy and cost-efficiency of a given vaccination program.

2) **Assessing antibody titers within a herd at different stages.**

   A single sampling of herd serum from cows at various stages of reproduction (as well as calves) will indicate which types of vaccines should be used at selected stages.

"Standardized" assessment of antibody titers is becoming a reality at most diagnostic laboratories. These tests are highly reliable and relatively inexpensive. These assessments of antibody levels can be indicative of the scope of the immune response. For example, a minor rise in antibody titer following vaccination implies that the vaccine poorly stimulated other components of the immune system, e.g. cell-mediated immunity. Recent studies point to this conclusion *despite hopes to the contrary.*

Poster supported by Grand Laboratories, Inc., Larchwood, Iowa.

Autogenous Vaccines in the Prevention and Control of Mastitis (Herd Specific and Antibiotic Free Solutions)

Harold Jody Wade *DVM*
5462 Hwy. 11-E
Piney Flats, TN 37686

Even though vaccine manufacturers are making great advances in vaccines every year, many long-known mastitis-causing enemies of the dairy industry still cause great problems for veterinarians and producers alike. Mastitis is probably one of the most frustrating diseases to treat especially with new strain variations emerging year to year. The other issue that is compounding this situation is the curbing of antibiotics use because of stricter milk quality assurance programs. A lot of practices are doing well with the use of herd-specific and disease-specific autogenous vaccines which are economical, easy to use, and effective. We as veterinarians are the 1st step in prophylaxis with these vaccines, by sending an isolate or milk sample to the diagnostic lab for identification. Working with a federally approved laboratory, the isolates are used to produce vaccines, employing methods that preserve antigenic integrity. Then in order to maximize its immunogenic potential, they are adjuvanted plus safety and sterility tested before we get it back to use on the farms of origin. More of the smaller dairies in our region are looking for ways to stay competitive with the larger integrated dairies, especially in the face of situations such as high somatic cell counts caused by mastitis, quality assurance and the restrictive use of antibiotics are going to demand the industry looks somewhere for answers. Autogenous vaccines may be one of those answers.