Udderly Protected: The Lowdown on Dairy Vaccines

As we kick off the new year, ensuring the health and productivity of our cattle is more important than ever. One key component of maintaining herd health is proper vaccination. This month, we've prepared a quiz to help you assess your knowledge about vaccinations for dairy cattle.

Vaccination Quiz: Test Your Knowledge!

1. **What is the primary purpose of vaccinating dairy cattle?**
   A) Improve milk production
   B) Prevent disease outbreaks
   C) Enhance growth rates
   D) All of the above

2. **Which of the following diseases can be prevented through vaccination?**
   A) Bovine Respiratory Disease
   B) Ketosis
   C) Lameness
   D) All of the above

3. **At what age should heifer calves typically receive their first vaccinations?**
   A) At birth
   B) 2-3 months
   C) 6 months
   D) At breeding age
   E) Depends on disease pressures/herd factors

4. **True or False:** Vaccines should only be administered during specific times of the year.

5. **What is the benefit of using combination vaccines?***
   *A combination vaccine is a shot that protects against multiple diseases at once, combined in a single injection
   A) Fewer injections needed
   B) Lower cost
   C) Enhanced immune response
   D) All of the above

6. **True or False**: It is safe to mix different types of vaccines in a single syringe.

7. **When should a heifer first be vaccinated for Leptospirosis to ensure optimal protection?**
   A) At birth
   B) Before breeding
   C) During calving
   D) After weaning

8. **How often should adult cattle typically be revaccinated with core vaccines?**
   A) Annually
   B) Every 2-3 years

C) Every 6 months
D) Only once in their lifetime

9. **True or False:** Stress can negatively impact the effectiveness of vaccines in cattle.

10. **What factors should you consider when developing a vaccination protocol?**
    A) Herd size
    B) Disease history
    C) Entry of new animals
    D) Farm management practices
    E) All of the above

11. **True or False:** Vaccinations can help reduce antibiotic use in dairy herds.

Answer Key

1.B – Prevent disease outbreaks, 2. A – Bovine Respiratory Disease, 3. E-Depends on the disease pressures, 4. False – Vaccination schedules can vary based on individual herd needs, 5. D – All of the above, 6. False – Never mix vaccines, 7. B – Before breeding, 8.A – Annually, 9. True – Stress can negatively impact the effectiveness of vaccines in cattle, 10. E – All of the above, 11. True- properly used vaccination programs can reduce antibiotic use in dairy herds.

Importance of Vaccination

Vaccination is vital not only for the health of your cattle but also for the sustainability of your dairy operation. Regular vaccination programs can significantly reduce the risk of disease outbreaks, improve milk production, and enhance overall herd longevity.

To understand vaccinations, a couple of definitions are important. An “antigen” is a substance that induces an immune response in the body, through the production of antibodies. An “antibody” is a blood protein that is produced in response to antigens, and act against antigens as part of an immune response.

Vaccines introduce an antigen to the animal’s body. This antigen will not cause a disease, but helps the body to mount an immune response through the creation of antibodies. This allows the body to respond more quickly when it is exposed to the real pathogen later, because it remembers how to fight it off.

Below are 3 common types of vaccines:

Modified Live Vaccines (MLV) – vaccine containing a weakened strain of living viruses or bacteria. These weakened pathogens are still alive and able to replicate, which mimics a real infection – this results in a quicker and stronger immune response. Potential disadvantages of this type of vaccine are the risk of abortion or temporary decrease in fertility in immune animals, and the need to use the vaccine within hours of mixing it.

Killed Vaccines – vaccines that contain viruses or bacteria that are dead or in pieces. These viruses do not replicate in the body, and so there is a lower immune response. Due to this lower response, killed

vaccines are safe to give to all animals – it also means that animals will need more frequent booster doses in order to remain effective.

Mucosal Vaccines – vaccines that are administered directly onto the mucus membranes (oral or intranasal). The viruses or bacteria used in these vaccines are modified-live and provoke a local immune system reaction, which reduces the risk of infection later via these mucosal sites. These vaccines are commonly used in newborns, as they do not interfere with maternal antibodies, and do not require a fully mature immune system in order to be effective. These vaccines provide a quicker immune response than modified live or killed vaccines, but the immunity they provide is short lived.

Best Practices for Vaccine Administration

- **Consult Your Veterinarian**: Always work with a qualified veterinarian to determine the best vaccination schedule for your herd, there is no “one size fits all” approach.
- **Follow Manufacturer Guidelines**: Ensure proper storage and handling of vaccines (e.g. storing in the fridge). Adhere to the recommended dosing schedules.
- **Maintain Records**: Keep detailed records of vaccinations to track herd health and make informed management decisions.

Final Thoughts

Having a solid vaccination plan is key to maintaining herd health and productivity. If you have any questions about vaccine schedules, protocols, or the best vaccines for your herd, it's important to consult with your herd veterinarian. They can provide expert advice tailored to your specific needs and help you make informed decisions that support the long-term well-being of your animals.

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