



Syringeology

By Angela M. Daniels | 2/1/2009

I recently asked a farm crew to vaccinate a group of calves. After some observation, I stopped them and took a look at the syringe; it was filthy. The crew may have been able to finish the job it was asked to do, but I'm sure that the results would have been less-than-desirable.

We tend to focus on people and processes, but tools are important, too. For instance, syringes are a basic tool most dairies use daily. But even fundamental tools require basic understanding for proper use.

1. Disposable syringes

These generally come in 3cc, 12cc, 20cc, 35cc and 60cc sizes. They are inexpensive (12 cents to \$1.15 each) and accurate. These syringes are not automatically filled, so they are not well-suited to administer vaccine to 100 head of cattle in one swoop. I like to use them during herd checks when administering multiple kinds of injections so each syringe has its own purpose and does not cross-contaminate bottles. Remember, these are disposable, so toss them after use. Resist the urge to wash and re-use them!

2. Automatic multi-dose syringes

These syringes generally hold 50cc and can give injections in 1- to 5-cc increments. They are handy to inject groups of cattle quickly. These are best if you are working chute-side and the bottle of injectable material can be hung from the chute.

The disadvantage is that you need to stop every 10 to 25 head to reload. These syringes are more expensive, ranging from \$40 to \$100. Replacement parts are available. You must become proficient at cleaning and maintaining these syringes.

Plastic versions are available. Parts are less available; you can usually sacrifice one syringe to fix others. At a lower cost of about \$20 to \$30, consider them disposable and replace them every month or so.

When using any multi-dose syringe, spot-check dosage for accuracy. Before starting a job, squirt a dose into a disposable syringe to check dosage accuracy. While injecting, keep an eye on the dosage markings on the barrel to ensure that you do not bump the adjustment and dial the dose higher or lower.

3. Bottle mount or draw-off multi-dose syringes

These syringes are a lighter-weight variation of the automatic multi-dose syringes made to have a smaller barrel. Their design eliminates the need to refill syringes. These tools pull the injection directly from the bottle mounted to the syringe or from the bottle through a length of tubing connected to it.

Holsters are available that allow you to hang the bottle on your body. The largest advantage is that the bottle of injectable is not entered into multiple times, reducing contamination chances. Take care to properly clean the bottle mount or tube-mounting areas.

These syringes are available in metal or plastic and their construction dictates price (\$20 to \$90). I've broken bottles using bottle-mount syringes when giving injections in headlocks, so my preference is to use a holster with the draw-off multi-dose syringe.

4. Needle-free devices

If you have not seen or heard of these devices, you will. This technology uses compressed air, CO2 or nitrogen, and a variable pneumatic amplifier to push an injection into the body.

There are numerous advantages — no disease transmission between animals, even distribution of product into the body

enhancing cellular contact and product efficacy, near elimination of carcass blemishes, probable reduction of pain associated with needle sticks and more.

Obstacles include the need to develop a system to operate and maintain the devices (company support is available) and cost. Larger operations can justify these units. Another niche is disease-free farms or purebred operations that promote the highest levels of biosecurity.

Finally, the importance of cleaning has come up several times. An excellent and thorough reference: "[Care of Veterinary Vaccine Syringes](#)" by Dee Griffin, et al. NebGuide article G1443.

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