

Colostrum: To Pool or Not To Pool?

- **Pooling combines colostrum from two or more fresh animals.**
- **How? When?**
- **Advantages**
 1. **Less time in parlor**
 2. **Less space needed to store colostrum.**
 3. **Less time cleaning equipment**
- **Disadvantages**
 1. **Increased risk of spreading diseases carried in colostrum.**
 2. **Increased risk of coliform contamination from the parlor.**
 3. **Increased risk of passive transfer failure.**
 4. **Increased risk of coliform contamination in stored colostrum**

Is the term, “pooling” unfamiliar? Perhaps you use a different word to refer to combining the colostrum (first milking) from two or more fresh animals. But, that’s what this resource is about.

How and When

How and when does pooling take place on dairy farms? Some farms milk each fresh cow into an empty milker bucket. Then the colostrum from all these cows is poured into a common pail or pails.

Other farms use large plastic milker buckets that hold up to eighty pounds of milk to collect colostrum. More than one fresh animal at a milking is often milked into these large buckets without emptying them. Since the average amount of colostrum for Holstein cows is about twenty-five pounds (three gallons) this is a practical procedure.

Some farms hold colostrum separately by individual cow for fresh feeding and then combine whatever remains into a common pool. Others mix fresh colostrum with that from a previous milking for storage. In any case the colostrum from one fresh animal is commingled with that from at least one other cow.

Advantages

Less time in the parlor. When using a large eighty-pound capacity bucket it saves time to just slide the bucket over to the next fresh cow rather than having to empty it between cows. In addition, when cows are milked into separate buckets pooling into a common pail requires no time devoted to record keeping.

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Less space needed to store colostrum. Keeping colostrum segregated by dam often means extra containers. These containers add up to more space in a refrigerator or freezer.

Less time cleaning. Keeping each fresh cow's colostrum separate requires at least one pail per cow at milking time. In addition, on some farms colostrum is stored separately requiring additional containers. All of these have to be rinsed, washed and put upside down somewhere to drain and dry.

Disadvantages

Increased risk of spreading diseases carried in colostrum. On one hand, if there is no pathogenic colostrum contamination then there is no risk.

On the other hand, if one of these pathogens (Johnes, salmonella, and mycoplasma are three of the most common at present) is in one cow's colostrum then after pooling the pathogen is in all of that pooled lot. Diluting the pathogen concentration by one-half or one-third through pooling is an ineffective means of reducing calf infections.

The increase in risk from pooling is directly related to the number of infected adult animals shedding pathogens in their colostrum.

Increased risk of coliform contamination from the parlor. On one hand, if parlor protocols are followed for each fresh cow and all milking equipment is bacteria free then all the colostrum is equally bacteria free and there is no risk.

On the other hand, if one or more cows is not prepped adequately or one or more milker buckets has a heavy regrowth of coliform bacteria then after pooling all the colostrum is equally contaminated with coliforms.

The increase in risk from pooling is directly related to the level of fresh cow and equipment sanitation protocol compliance

Increased risk of passive transfer failure. One of the causes of calves not having a high enough antibody concentration in their blood to stay healthy (passive transfer failure) is an excessively low number of antibodies in the colostrum they receive.

On one hand, if all the fresh animals have about the same antibody concentration in their colostrum then combining it will not change anything.

On the other hand, if wide there are large variations among the lots of colostrum then the antibody level in the resulting commingled product may be too low to avoid passive transfer failure.

Keep in mind that one-third of second lactation and higher cows may have low antibody colostrum. And, fully two-thirds of first lactation heifers also may have low antibody colostrum. If there is no

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sorting of colostrum by lactation status then pooled colostrum when one or more heifers freshen is quite likely to be excessively low in antibodies (assuming that heifers account for around one-third of all calvings).

Increased risk of coliform contamination in stored colostrum. Stored colostrum, regardless of whether it is refrigerated or frozen, will always have a higher coliform bacteria count than the same colostrum before it was stored.

When fresh colostrum is commingled with stored colostrum the situation favors raising the bacteria level of the fresh colostrum. While not always the case, frequently the one to three day-old colostrum will have a substantially higher concentration of coliforms than fresh simply because the bacteria have had lots of time to multiply. If by adding the fresh colostrum the commingled batch temperature is warmed above 60° the coliform bacteria growth rate will go up a lot.

To Pool or Not To Pool

Unlike many other decisions that involve large amounts of capital expenditures, this decision can be more responsive to changes in the farm's situation. If a disease outbreak occurs either among cows or calves, that's a clear signal to stop pooling. As changes in parlor procedures or sanitation protocols change risk levels, the decision may have to be revisited and a new policy adopted.

My personal opinion is that the disadvantages of pooling almost always outweigh the advantages. It is a best management procedure NOT to pool colostrum.