

## *How to do Everything Wrong and get it Right*

### **Mr. Mark Seibert**

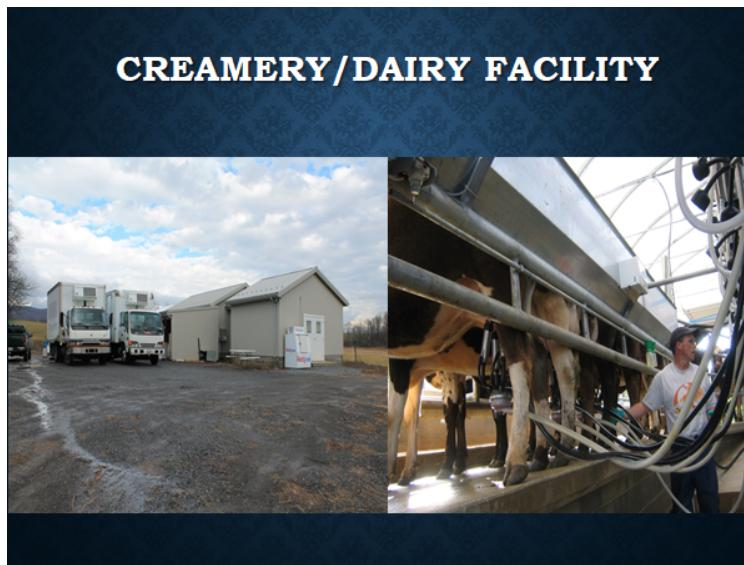
Co-Owner and Operator, Clear Spring Creamery, Clear Spring, MD

Clear Spring Creamery, located in Washington County, has been the family farm for over one hundred years. My wife, Clare, and I took over the operation of the farm in 2007 to begin a dairy. The creamery was launched in the Spring of 2008. Our goal is to manage our farm with a system that protects the soil and water and is an asset to the community where we live, while providing us a livable income. Since 2009, the creamery is our sole source of income.



Farm operations consist of 40 milk cows, 10 breeding heifers, 10 heifer calves, 100 acres of pasture/hayland on the farm, 30 acres of off-farm hayland, and formerly was certified organic farmland, animals, and creamery.

Dairy management practices are a departure from more conventional dairy farms. We do grazing-based feeding rather than confinement feeding. No genetically modified feeds are fed to the dairy livestock. (Editor's note: Nearly all field corn and soybeans produced in the US today are genetically modified.) Seasonal milk production is done so that all the cows freshen in a narrow time frame in March/April and are dried off by Christmas. The herd produces no milk during January and February. Most dairy farms milk cows year around. Once a day milking is done on our farm whereas with most other dairy farms, the milk cows are milked twice a day and a few farms three times daily. Dairy cows are outwintered and summered on pasture. Most dairy farms, unless they organic dairies, house their dairy cows year around. Our herd has low milk production but is of very high quality. Most conventional dairies strive to produce the most milk possible and are not as concerned about components such as milk fat and protein levels.



*Figure 1: Creamery buildings, Refrigerated Trucks, & Milking Parlor*

Creamery operations process all the milk produced on the farm. While our dairy herd is dry in January and February, we buy milk from a neighboring farm to keep the creamery running and making product to sell. It is all retailed as Grade A dairy products. Farmers Markets are the primary sales vehicle. Products produced and sold are: Creamline milk, chocolate milk, skim milk, drinkable yogurts, cream, butter, custom-made cheese, and eggs. The creamery vats where the milk is pasteurized are filled by two means:

- Direct fill - During milking
- From bulk tank - If skimming or using stored milk.

The vat pasteurizers used are two sizes, 35 gallons and 50 gallons. A small automated packager bottles all the milk and yogurt once they are processed. We use plastic containers because glass is too cumbersome and requires mechanical washing.

There are many regulatory requirements to adhere to in operating a Grade A creamery. They are:

- Grade A Pasteurized Milk Ordinance (PMO) compliance
- Milk quality- Somatic cell count (SCC) limit, bacteria limits
- Labeling
- Storage of raw milk
- Identity testing of skim and cream, and
- Antibiotic testing for every batch.

Retail sales are done by the following means:

- Farmers markets
- 5 per week
- Washington DC beltway locations
- Use premium pricing
- Produce a quality product
- Production system that meets customer expectations.



*Figure 2: Sales Booth at Farmers Market*

There are several marketing challenges in selling your own branded dairy products. They are:

- Balancing production with demand
- Refrigeration
- Finding markets to support product
- Equipment volume limitation
- Differentiation of your product/education of customers of its merits over the competition
- Labor for sales crew/truck driving to sales destinations.



*Figure 3: Solar Panels & Grazing Cows*

Another unique thing about Clear Spring Creamery compared to most farms is that we have a solar electricity system. The solar panels were installed in 2011. It is a twenty-one kilowatt system that serves the dairy farm and the creamery. It generates 75% of our electricity needs. This enterprise produces income and input savings. It reduced our electric bill. It is depreciable property reducing taxable income. It also is a hedge against future energy cost increases. For every 1000 kilowatt-hours produced by a certified solar system, one solar renewable energy certificate or solar renewable energy credit (SRECs) is awarded, these credits can be sold to public utilities. Cost of solar systems is beginning to decrease making them more affordable for small operations.



*Figure 4: Seasonal Calving - Cow nursing calf in March*

A little more detail about seasonal dairying/calving, we Spring calve in March and April producing 40 calves in 8 weeks. In our calf management system, all pairs nurse colostrum. Our heifer calves are nursed by their mothers for 5 to 6 months. Nearly all conventional dairies take the heifer calves off their mothers shortly after birth. Their calves are fed milk replacer until they are old enough to eat forages and other feedstuffs. Early bull calves are sold at one week as is usual for most dairy farms, but later bull calves nurse on their mothers until they weigh 300-400 pounds. Weaning rings are used to wean calves off their mothers. No supplemental feed is fed to the calves, just mother's milk and grass. At milking time, the calves after 1 or 2 days after birth wait outside the milk parlor while the cows are milked. They sometimes wander during this time away from the mothers. Bedding or hay is placed on the ground in the waiting area when the ground is damp or snowy from a late winter storm. Is nursing good for all dairies? There are some drawbacks. Most prominent are:

- Milk consumption of up to 30 pounds/calf/day,
- Calf distracts cows, and
- Increases movement difficulty between milk parlor and pasture paddocks.

However, nursing calves at the mother's side works for us. These are the benefits:

- Milk production balancer for creamery,
- Calves grow well and are very healthy, and



- No labor for calves.

To seasonal calve requires seasonal breeding. Three bulls are placed with the cows on May 25<sup>th</sup>. After ten days, one bull is placed with the yearling heifers. We get 90-95% successful breeding in 8 weeks. We use milk pregnancy testing. The test works by detecting Pregnancy Associated Glycoproteins (PAGs), present only in a pregnant animal. The test is 98% accurate. Each sample costs between \$6.00 and \$8.00.



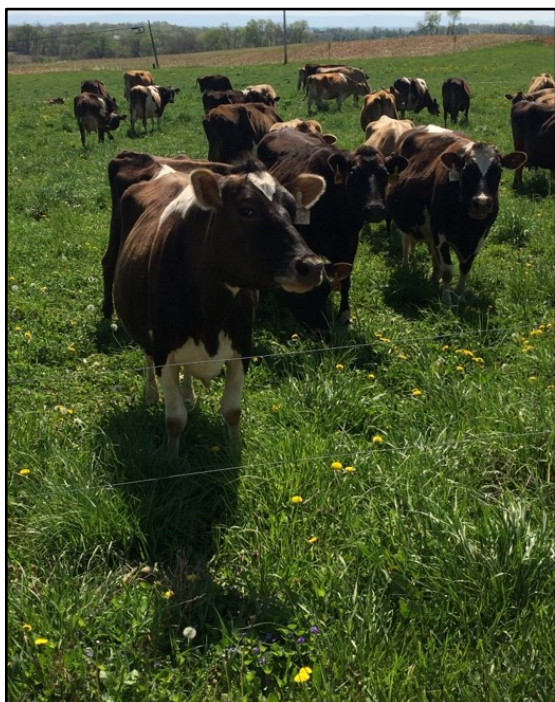
*Figure 5: Clare doing the morning milking.*

To follow-up on once a day milking, we milk them in the morning. With 40 head and 8 milking units, it takes just an hour to milk the cows post-calving season. It is a one-person job. The milk flows directly to the pasteurizer. Is once a day milking for everyone? Here are the pros and cons and a depends:

- Reduces milk yield 20-40%
- Milk quality?
- Less walking for cows
- Less labor
- Less electricity
- Higher fat and protein components.

Dairy cow movement between milking parlor and pasture paddocks is done by using permanent and temporary cattle lanes. Water is in every pasture paddock to cut down on trips to a water trough back at the farmstead or other more remote locations.

Pasture management at our farm began with the seeding of the cropland in 2007 to an orchardgrass/clover mixture. Some tall fescue is invading the pastures as it existed on the farm when we took over the operation. Palatability of forage species is a concern as orchardgrass tends to head out early and becomes less desirable at that stage. Tall fescue is usually shunned by dairy cows due to its alkaloid content and tough leaf tissue. Riparian areas along streams are buffered from cattle activity. Summer heat management requires providing portable shade.



**Figure 6: Paddock of lush grass surrounded by two-strand electric fence**

We allocate approximately 1.5 ac of pasture to our herd of 40 cows per 24 hours. We subdivide our pastures using poly- or aluminum wire fencing placed on fiberglass or plastic posts. We use both permanent and temporary waterers in our pastures. We allow a 30-day+ regrowth period post-grazing to ensure good forage availability when they return to graze a paddock again. Five to 6 grazings/paddock occur on average during a grazing season.

We have observed forage species density and composition change as the orchardgrass stand thins out and tall fescue gains ground.

There are several options to address this problem. They are:

- Overseeding with turbo-tilling (rolling spike harrow following tandem disk coulters implement that provides shallow tillage and retains residue cover)
- No-till interseeding
- Annual planting and total renovation
- Fallow summer seeding
- Seeding sod species to replace bunch grasses, orchardgrass and tall fescue.



**Figure 7: Dairy cows grazing sudangrass**

Sudangrass is used as a summer annual forage to provide grazing forage during the summer when cool season grass growth is slow to minimal. It is also useful to prepare the field for seeding to a perennial forage crop next year and eradicating tall fescue from the field. It is planted in June and provides grazable forage through the months of July, August, and September. Ordinarily, it requires 31 days from planting to be ready for grazing the first time. If sufficient stubble height is left for re-

growth to initiate, 3 grazings can be achieved on average.

Winter annuals can then be planted after last grazing of the sudangrass. We use triticale and cereal rye. We may try crimson clover, a winter annual legume, as a companion forage. The winter annuals are planted in September or October and grow and overwinter before they are grazed in early spring. They can be grazed twice during April and May before reseeding to a summer annual or a perennial grass mixture.

Hay is harvested from sudangrass and orchardgrass hayfields. Sudangrass is cut twice. Orchardgrass is harvested two to three times depending on rainfall patterns during the growing season in ungrazed hayfields. It is made into round bale balage that is plastic wrapped and stored outside. The hay is fed on the ground in winter or in bunks.

We started winter grazing off the farm in 2016 on a fescue farm. Tall fescue can be stockpiled for winter grazing as it retains its nutritive value better than most other forage grasses into winter. This is much cheaper than feeding a lot of hay. The cows are also not lactating now so the fescue is adequate nutritionally. It also reduces damage on our pastures from winter cattle traffic on wet soils. We winter graze by dividing up the pasture into paddocks with polywire fencing that are grazed for 2 to 3 days before moving the herd to another paddock. We figure it takes one acre of winter pasture for the 40-cow dairy herd. In the winter of 2017, no hay was fed from 12/25/16 thru 2/25/17.



*Figure 8: Dry dairy cows on stockpiled tall fescue*

Our egg business is handled by our son, Paul. Our 200-hen egg laying flock is on pasture. Egg-laying rate is good at 70-75%. Electric netting is used to keep the hens from straying off and keeping ground predators away from the hens. Free range eggs are easy to sell.

In closing, the keys to a successful small farming system are:

- Harmony between production system and target consumer,
- Resiliency in times of stress (drought, low sales, poor economy),
- Forget about commodity production (milk, grain, eggs etc.) income too volatile,
- Ignore wholesale requests for value-added products,
- Price product based on production costs plus profit, and
- Know labor needs and work smart.