



Whether a cheeseburger, ham and cheese on rye, egg and muffin with melted sharp cheese, or a combination salad heaped high with strips of natural or processed cheese, we continue to grow in our love of cheese products.

Last year (1985) the annual Food Service cheese sales were over 1.6 billion pounds.

If there is this much consumption in one line of products, we need to know as much as possible about cheese and its usage in order to increase our customers sales.

In order to understand the cheese you sell, the following will summarize production from the farm, into the plants and on to distribution.

There are over 200 cheese varieties. All of these are made from cow's milk in the United States.

First and foremost in producing good cheese is the high quality of milk used. All the cheese you receive from Beatrice is produced from milk exceeding U.S.D.A. standards.

-The milk is delivered daily to the cheese factory where it is pumped into stainless steel holding tanks and held at 38° awaiting future use. The incoming milk is checked for quality and purity. Most cheese today is made from pasteurized or heat-treated milk. Raw cheese is made from unpasteurized milk and must be held for 60 days prior to sale.

The steps in cheesemaking are similar for all cheese varieties. The difference in cheese are a result of how the milk is prepared, variations in the cheese-making processing and curing. In looking at cheese production, we will first study the Cheddar varieties which account for 55% of the natural cheese produced in the United States.

-The pasteurized milk is pumped from holding tanks to temperature controlled cheese vats. Temperature is closely controlled for each type of cheese that is produced. The proper temperature for Cheddar is approximately 86°.

-Next a "starter" is added by the cheesemaker. This "starter" is a harmless bacteria culture. Each variety of cheese is developed from a specific "starter". This "starter" is the heart of the cheese for the following reasons.

- 1) It determines flavor. A small amount of ingredients could change milk into Cheddar, Swiss, Provolone or one of a hundred other styles of cheese.
- 2) It establishes the body and texture of the cheese.
- 3) It establishes the proper bacteria growth rate. All cheese does not age the same.

-If a yellow color cheese is desired, a tasteless vegetable coloring called "Annatto" is added. "Annatto" is obtained from the seed pods of a Central American tree. This coloring is mixed throughout the milk shortly after the "starter" has been added.

-At this point rennet, a milk-clotting enzyme, is added to coagulate the milk protein. After 30 minutes this enzyme changes the milk into thickened, custard-like cheese curds.

-The curd is formed and tested by the cheesemaker.

-The curd is then cut into small cubes by a set of horizontal and vertical stainless wire knives. The curd is cut into various sizes depending on the variety of cheese being made. This cutting operation allows for better separation of the curds and whey, the solid and liquid portions of the solution.

-The curds and whey are then cooked and stirred until the desired firmness in the curds is reached. This cooking also helps expel excessive moisture from the curd and helps determine the texture. During this cooking time the temperature is raised to around 100° for cheddar - other cheese vary in temperature.

-After the whey has drained off, tools are used to put a trench down the middle of the curds for further draining of the whey. Whey is used in process cheese, candy, process meat, baked goods, dry mixes and a multitude of other products.

-The curds are packed by hand against the sides of the vat. Once the cheesemaker determines the curds are firm enough to be turned without breaking, the slabs are turned, then stacked and restacked. This procedure is called "Cheddaring". This releases additional whey and mats the curds into a solid form. After "Cheddaring", the curd slabs are smooth, velvety and uniform in texture.

-The slabs are then run through a Cheddar mill which chops the curd slabs into small pieces

-A prescribed amount of salt is added which enhances the Cheddar flavor while extending the shelf-life of the cheese.

-These stainless molds are lined with cheese cloth and then filled with the curds and shaped into whatever size we desire for a finished product - blocks, horns, daisies, midget, wheels, etc.

-The last step in the cheesemaking procedure is "pressing". This helps expel more whey and produces a compact cheese mass. The time and amount of pressure varies with each type of cheese. The most important deciding factor is obtaining the correct moisture and fat percentages. There are government standards for all types of cheese produced in the United States.

-After the cheese has reached the proper conditions, the molds are removed. Samples of each lot of cheese are taken to check for moisture and fat content, texture, bacteria, purity and color.

-The only real consideration is keeping the cheese air tight. The different color waxes and packaging materials have nothing to do with the cheese's taste or age.

Let's turn our discussion to the world of process cheese.

What is process cheese? Most of us are not really sure, but we know it is great on cheeseburgers, patty melts and in omelets.

We certainly enjoy process cheese or ... American cheese, the more familiar term in the United States. Over 30% of the cheese we eat is process cheese. With such a larger percentage of sales, we need to have a working knowledge of this important group of cheese.

Process cheese is natural cheese that has been ground, blended, heated, or pasteurized and put into more convenient forms, such as loafs, blocks, slices or shredded. Cheddar is the most commonly used natural in making process cheese, although Swiss, Provolone, Brick and others are used in much smaller quantities.

The quality of cheese we select at Beatrice for processing has a direct influence on the high standards we attain throughout our complete process cheese line. The selected cheese must be of the proper age, flavor and acidity to insure a uniform product of desired flavor and one that meets government composition standards. Natural cheese manufactured for further use as process cheese is normally packed in 500 pound barrels.

These selected cheeses are first placed into a large slicer.

The sliced pieces are then fed into a large grinder which carries the ground cheese to a steam cooker. Other cheese are added for flavor enhancement.

The cooking temperature varies between 155° and 165° depending upon the cheese produced. This heating process kills the natural bacteria in the cheese which stops the aging process.

The hot, semi-liquid cheese flows from the cooker to a holding mixer which feeds loaf-filling machines and several different kinds of "Chill-rolls".

Cutting rollers across the top cut the cheese into pre-sized ribbons. These are led through plastic rollers which stack the cheese into horizontal layers. This system of rollers, which Pauly Cheese Company developed, gave the Food Service Industry their first staggered slices of cheese, which made it much easier to separate.

The sliced ribbons are then cut vertically and packaged into air tight containers. The time from grinding to packaging is only 10 minutes.

The dimension and body texture of every slice is exact. The package count is always correct, never an approximate number.

Another advantage of Beatrice Process Cheese is the large selection of flavors and slice counts we have available, from 16 slice ribbon to 200 single count. We can cover all your customers needs.

Terminology is sometimes confusing in talking to your customers about sliced cheese. Let us take a minute to define certain terms.

- 1) First is "stand pack" - This means that all the slices are stacked one on top of the other. Beatrice Cheese has stack pack loafs containing 48, 72, 108, 114, 120, and 144 slices.
- 2) "Stack pack, sided by side" - The cheese is already cut vertically and horizontally and packaged in stacks, side by side. Beatrice Cheese again has a large selection of slice counts in this packaging: 96, 120, 126, 144, 160, 184, and 200 per 5-pound package.

- 3) "Ribbon Slice", "Sandwich Slice", or "Pullman Slice". All terms denote the same - the cheese is only sliced horizontally. The 36 count "Pullman", if left uncut, would have only 36 Long slices of cheese running across the package vertically, Beatrice has placed lines on the package to indicate where to cut in order to have either 108 or 144 exact slices. Of course the operator can cut down vertically through the package to have whatever size he desires. This choice of cut sizes makes the "Pullman" style cheese package very popular.
- 4) "Loaf cheese". This is used by the end-user to slice, shred or melt into dips and with other foods. This is the most economical style of pasteurized process cheese.