vapor and minimize or eliminate objectionable odors. To minimize air borne contamination in processing and packaging rooms a filtered air supply meeting the requirements of § 58.510(c) shall be provided. The incoming air shall exert an outward pressure so that the movement of air will be outward and prevent the movement of unfiltered air inward.

(c) *Starter facility.* A separate starter room or properly designed starter tanks and satisfactory air movement techniques shall be provided for the propagation and handling of starter cultures. All necessary precautions shall be taken to prevent contamination of the room, equipment and the air therein. A filtered air supply with a minimum average efficiency of 90% when tested in accordance with the ASHRAE Synthetic Dust Arrestance Test should be provided so as to obtain an outward movement of air from the room to minimize contamination.

(d) *Coolers.* Coolers shall be equipped with facilities for maintaining proper temperature and humidity conditions, consistent with good commercial practices for the applicable product, to protect the quality and condition of the products. Coolers shall be kept clean, orderly and free from mold, and maintained in good repair. They shall be adequately lighted and proper circulation of air shall be maintained at all times. The floors, walls, and ceilings shall be of such construction as to permit thorough cleaning.

EQUIPMENT AND UTENSILS

§ 58.511 General construction, repair and installation.

The equipment and utensils used for the manufacture and handling of cottage cheese shall be as specified in § 58.128. In addition for certain other equipment the following requirements shall be met.

§ 58.512 Cheese vats or tanks.

(a) Cheese vats or tanks shall meet the requirements of § 58.416. When direct steam injection is used for heating the milk, the vat or tank may be of single shell construction. The steam shall be culinary steam.

(b) Vats shall be equipped with valves to control the heating and cooling medium and a suitable sanitary outlet valve. Vats used for creaming curd should be equipped with a refrigerated cooling medium. A circulating pump for the heating and cooling medium is recommended.

§ 58.513 Agitators.

Mechanical agitators shall meet the requirements of § 58.417.

§ 58.514 Container fillers.

Shall comply with the 3–A Sanitary Standards for Equipment for Packaging Frozen Desserts and Cottage Cheese.

§ 58.515 Mixers.

Only mixers shall be used which will mix the cheese carefully and keep shattering of the curd particles to a minimum. They shall be constructed in such a manner as to be readily cleanable. If shafts extend through the wall of the tank below the level of the product, they shall be equipped with proper seals which are readily removable for cleaning and sanitizing. The mixer shall be enclosed or equipped with tight fitting covers.

§ 58.516 Starter vats.

Bulk starter vats shall meet the requirements of § 58.415.

QUALITY SPECIFICATIONS FOR RAW MATERIAL

§ 58.517 General.

Raw materials used for manufacturing cottage cheese shall meet the following quality specifications.

§ 58.518 Milk.

The selection of raw milk for cottage cheese shall be in accordance with §§ 58.132 through 58.138.

§ 58.519 Dairy products.

(a) *Raw skim milk.* All raw skim milk obtained from a secondary source shall be separated from milk meeting the same quality requirements for milk as outlined in § 58.518 above. Skim milk after being pasteurized and separated shall be cooled to 45 °F. or lower unless the skim milk is to be set for cheese

within two hours after pasteurizing. The skim milk should not be more than 48 hours old from the time the milk was received at the plant and the skim milk is set for cheese.

(b) *Nonfat dry milk.* Nonfat dry milk, when used, shall be obtained from milk meeting the same quality requirements as outlined in § 58.518 above. It shall be processed according to the requirements of this Subpart, and should meet the requirements of § 58.236(b)(3).

(c) *Condensed skim milk.* Condensed skim milk, if used, shall be prepared from raw milk or skim milk that meets the same quality requirements outlined above for raw milk or skim milk. It shall be cooled promptly after drawing from the vacuum pan or evaporator and shall have been pasteurized before concentrating or during the manufacture. The standard plate count of the concentrated milk shall not exceed 30,000 per ml. at time of use.

(d) *Cream.* Any cream used for preparing the dressing for creamed cottage cheese shall be separated from milk meeting at least the same quality requirements as the skim milk used for making the curd. The flavor of the cream shall be fresh and sweet. Cream obtained from a secondary source shall meet the same requirements. The creaming mixture prepared from this cream, after pasteurization, shall have a standard plate count of no more than 30,000 per ml.

§ 58.520 Nondairy ingredients.

(a) *Calcium chloride.* Calcium chloride, when used, shall be of food grade quality and free from extraneous material.

(b) *Salt.* Salt shall be free flowing, white refined sodium chloride and shall meet the requirements of The Food Chemical Codex.

(c) *Other ingredients.* Other ingredients such as fruits, nuts, chives or other vegetables used or blended with cottage cheese shall be reasonably free of bacteria so as not to appreciably increase the bacterial count of the finished product. The various ingredients in kind shall be consistent in size and color so as to produce the desired appearance and appeal of the finished product. The flavor of the ingredients used shall be natural and represent the intended flavor and intensity desired in the finished product. Such ingredients shall be clean, wholesome, of uniformly good quality, free from mold, rancid or decomposed particles. Vegetables used in cottage cheese may first be soaked for 15 to 20 minutes in a cold 25 to 50 ppm chlorine solution to appreciably reduce the bacterial population. After soaking, the vegetables shall be drained and used soon thereafter.

Operations and Operating Procedures

§ 58.521 Pasteurization and product flow.

(a) The skim milk used for the manufacture of cottage cheese shall be pasteurized not more than 24 hours prior to the time of setting by heating every particle of skim milk to a temperature of 161 °F. for not less than 15 seconds or by any other combination of temperature and time giving equivalent results. All skim milk must be cooled promptly to setting temperature. If held more than two hours between pasteurization and time of setting, the skim milk shall be cooled and held at 45 °F. or lower until set.

(b) Cream or cheese dressing shall be pasteurized at not less than 150 °F. for not less than 30 minutes or at not less than 166 °F. for not less than 15 seconds or by any other combination of temperature and time treatment giving equivalent results. Cream and cheese dressing shall be cooled promptly to 40 °F. or lower after pasteurization to aid in further cooling of cottage cheese curd for improved keeping quality.

(c) Reconstituted nonfat dry milk for cottage cheese manufacture need not be re-pasteurized provided it is reconstituted within two hours prior to the time of setting using water which is free from viable pathogenic or otherwise harmful microorganisms as well as microorganisms which may cause spoilage of cottage cheese. Skim milk separated from pasteurized whole milk need not be re-pasteurized provided it is separated in equipment from which all traces of raw milk from previous operations have been removed by proper cleaning and sanitizing.