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# New York Agricultural Experiment Station.

GENEVA, N. Y.



## COLD-CURED CHEESE.

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F. H. HALL AND GEO. A. SMITH.

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\* Connected with Fertilizer Control.

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¶ Absent on leave.

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OF

BULLETIN NO. 184.

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COLD-CURED CHEESE.

F. H. HALL.

**Better cheese needed.** York State cheese must be restored to its position as leader in quality in the dairy markets of the world. Milk producers urge this as necessary to secure their rights, factorymen meet to discuss methods for gaining this end, legislators enact laws to protect good products, and scientists strive to prevent the faults which cause poor ones; yet without care and study at every step of the cheese-handling, from drawing the milk to taking the cheese from the curing shelves, failure is possible.

**Careless curing.** Conditions of curing have often led to defects in flavor and texture; for uniform temperature and regulated moisture supply in curing, to say nothing of cleanliness in making, are impossible to secure in factories so dilapidated as that shown on the title page.

The Station investigators believed that cheese, generally, when cured in the factories, was held at too high temperatures; so experiments were planned to test the effect of cool curing.

**Making the cheese.** Pure milk, handled with greatest care to avoid dirt and odors, and ripened, set, cooked, drained and pressed after the most approved methods was made into Cheddar cheeses. Different lots of these cheeses were made at various times through two seasons, the lots for each separate test being made from the same vat of milk if possible or made from milk of the same herd at very short intervals, in order to secure cheeses of uniform quality for comparison when cured at different temperatures. These cheeses

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\* This is a brief review of Bulletin No. 184 of this Station, on the influence of the Temperature of Curing upon the Commercial Quality of Cheese, by Geo. A. Smith. Any one specially interested in the detailed account of the investigations will be furnished, on application, with a copy of the complete bulletin. The names of those who so request will be placed on the Station mailing list to receive future bulletins, popular or complete as desired. Bulletins are issued at irregular intervals, as investigations are completed, not monthly.

were then placed in the Station curing rooms, where the heat is under automatic control and can be kept uniform at any degree between 40 and 90. The different rooms were held about 5° apart; so cheeses were cured at 55°, 60°, 65°, 70°, 75° and 80° F. The curing was continued from two to five months or more and cheeses of the same lots, cured at different temperatures, were scored at the same time by unbiased experts.

**Cold curing** Fourteen comparisons were made between cheeses cured at high and low temperatures, five comparisons including all the temperatures given and **best.** four, all except the two very high temperatures.

In every case the cheeses cured below 60° scored higher in flavor and texture than those cured at higher temperatures, the deterioration in quality at the high temperatures being very marked in some cases. The average score, home trade scale, of the cheeses cured at and below 60° in 1899 was almost 5 points higher on flavor and 2.5 points higher on texture than the score of the cheeses cured at 65° and above. In 1900, when some cheeses were cured at the high temperatures of 75° and 80°, the difference in the scores was still greater: Flavor 5.1 points; texture, 2.7 points. These are more than 10 per ct. gains, so far as scoring is concerned; but the real advantage of the cold curing is greater than this; for many persons will not touch a poor-flavored, poor-textured cheese at any price, who would consume or handle freely a perfect article. It is only by improvement in quality that a home market can be built up which will take all the cheese the dairies of the State can supply. Many of these cheeses cured at low temperatures were pronounced nearly perfect in flavor and texture by the scorers. One says "I have tested the cheese (55°) and can say that it is especially fine;" another, "The cheeses all good, the 55° F. very fine;" another, "Nos. 5 (60°) and (55°) are very nearly perfect cheeses. Considering that they were made four months ago we might say that no cheese could be made that would show better at the expiration of that time;" and of another lot the same expert says: "Nos. 1 and 2 (80° and 75°) are about the poorest we have had from you and Nos. 5 and 6 (60° and 55°) the best, particularly No. 6. This we call \* \* \* a perfect August cheese."