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THE EFFECT OF FEEDING SOME SUCCULENT FEEDS ON THE
QUALITY OF MILK AND BUTTER PRODUCED

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A dairy cow gives the maximum returns when succulent feed stuffs form a part of the ration. Pasture is, of course, the most widely used succulent feed. When good pasture is not available, other succulent feeds must be relied upon. In the Willamette Valley of Oregon kale, corn silage, and root crops are the most common succulent feeds substituted for pasture. Experiments have shown that the addition of succulent feed stuffs to a ration not containing succulence stimulates milk production and keeps the cows in better physiological condition.

Succulent feeds being highly flavored may have an effect on the flavor and odor of milk from cows consuming them. This flavor is designated as a feed flavor and is objected to by milk plant operators, creamerymen, and consumers. It is, therefore, important that the dairyman be informed as to how to feed the various succulent feed stuffs in order to prevent the imparting of the feed flavor to the milk produced. The flavor is apparently absorbed by the fat in the milk, consequently cream and butter show the feed flavor even more distinctly than does whole milk.

Experiments that have been conducted at the U. S. Department of Agriculture and at various agricultural experiment stations throughout the country indicate that feed flavors can be controlled under proper systems of feeding. The first consideration in feeding succulent feed stuffs that do impart feed flavors to milk is that they be fed after milking and not before. Experiments have shown that the feeding of corn silage, kale, turnips, green alfalfa, or practically any highly flavored feed stuff before milking imparts an objectionable feed flavor to the milk and other dairy products produced from it.

The effect of the various succulent feeds varies with the feed stuff. Thus, recent experiments at the Oregon Agricultural Experiment Station prove that the feeding of kale previous to milking imparts a much more noticeable and characteristic feed flavor than does the feeding of corn silage. Most dairymen are acquainted with the highly flavored milk produced when cows graze

on pastures containing weeds such as bitterweed. In case there are such weeds in the pasture, it is necessary to remove the cows from the pasture three or four hours before milking so as to allow time for the objectionable flavors and odors to be eliminated from the cow's body.

When fed to dairy cows one hour before milking, silage made from corn, alfalfa, soy beans; and green alfalfa, cabbage, turnips, rape and kale seriously affect the flavor and odor of milk. Green rye, green cow peas, potatoes, dried beet pulp, and carrots affect milk only to a slight degree. Green corn, green oats and peas, green soy beans, pumpkins and sugar beets have practically no effect on the flavor and odor of milk.

The method of control then, is to give the dairy cows highly flavored feeds only after milking--never just before. When exceptionally large quantities of very highly flavored feeds are given after milking, these may affect the milk even 12 hours after feeding. However, in this case, the intensity of the flavor has usually decreased so that it will not be objected to by the creamerymen and consumers.

Milk produced in a feed tainted barn may absorb some of the flavors and odors of the stable air. Thus it is important to keep all highly flavored feeds out of the milking barn in so far as storage is concerned, and if the succulent feeds are fed in the barn, to remove any uneaten portions several hours before the period of milking. The milking barn should be well ventilated. The aeration and cooling of milk will reduce strong feed flavors and odors and sometimes eliminates slight flavors and odors.

Recent investigations at the University of British Columbia and elsewhere have shown that a definite feed flavor or stable odor is caused by specific bacteria. The organism causing the trouble was isolated from corn silage being fed to the University of British Columbia dairy herd. It is not known whether all corn silage contains the organism or whether it is present in other feedstuffs. In order to prevent the contamination of milk it is necessary to use the most sanitary methods in producing the milk, especially the washing of the hands of the milker and the udders of the cow, removing uneaten feeds from the manger and manure from the barn.