

Table 1. Range Between Average Flavor Intensities of Individual Cows

Group	Range	
	Taste	Smell
I	1.5-1.7	1.3-1.6
II	1.6-2.3	1.9-2.5
III	1.6-2.6	2.5-3.1

individual cow of both groups produced milk with a definite wheat flavor. Cow No. 296 never produced milk that was free from wheat flavor. This was true for Trial 7 when the wheat plants were covered with ice. The average flavor evaluations on her milk by the four judges on this date were 2.6 for taste and 3.0 for smell.

The analyses by mass spectrophotometry has definitely identified a single compound, trimethylamine, as being responsible for wheat flavor in milk. This development will be extremely valuable in further research on Oklahoma's No. 1 milk flavor problem.

## Dairy Foods

### Emulsifiers in Foods for the Elderly

J. B. Mickle, Wanda Smith, Sue Knight and Olive Pryor

During the last 12 years, research concerning emulsifiers in foods at O.S.U. has resulted in several new products including low calorie spreads, new cake shortenings, and candy bases. These studies with emulsifiers are continuing, and the objective of this research is to develop ideas which can be used to manufacture foods for the elderly of our population.

Present studies are aimed toward the development of high protein puddings which will be acceptable to the elderly. As a first step in this work, pudding and custard recipes were obtained from cookbooks that were from 40-80 years old. Dishes prepared from these recipes have a

taste, texture, and aroma which are familiar to the elderly people. Analyses indicated that a high proportion of the calories came from carbohydrates. Analyses of the canned puddings currently available on the market for elderly people showed that these also had a high proportion of carbohydrate calories and a low proportion of protein calories.

In addition, this survey also revealed that present-day puddings had a rather mild taste and that the textures were sometimes undesirable, in some cases being too watery to stay on the spoon. The recipes from the old cookbooks were then changed to lower the percentage of calories obtained from carbohydrates and to increase the percentage from protein. It is now possible to make a pudding with more than twice the protein content of available commercial puddings but which still seems to have an acceptable texture and taste.

For any food to have wide acceptance among the elderly, it must be appetizing as well as moderate in price. Thus, any protein additives must be relatively inexpensive. This first work has been accomplished using non-fat dry milk solids. Future work will involve whey solids and other inexpensive sources of high quality protein.

Taste panel trials have been arranged so that these puddings can be tasted by a variety of elderly groups: a group of retired but still active people, a group of older people who are relatively inactive, and a group confined to rest homes. The taste panel work will be divided into two parts. First we will determine what types of flavors these people seem to prefer. Then the knowledge of stabilizers and emulsifiers acquired in this laboratory will be used to modify the product so that it has a texture that is appealing to these people. After determining the proper texture and flavor, modifications will be made so that the product will retain this texture and flavor during heat processing and prolonged storage.

---