

# G. I. Candy Bar



With President Charles E. Friley, Wendell Willkie examined the Dairy Department's product when he visited the campus

*Iowa State's nutritive candy bar is utilized by the armed forces, reports Ruth Midgorden*

IOWA State is fostering another brainchild, a milk and honey candy bar, born in 1933 when Prof. C. A. Iverson, head of the Dairy Industry Department, was looking for new uses for milk and milk products.

Originally intended for civilian consumption, intermittent testing of the bar supplied samples enough to stock the campus bookstore's candy counter and the Dairy Industry Building's salesroom for several years. But two years ago, shortly before Dr. T. I. Hedrick returned to take charge of the market milk laboratory and incidentally the research work on the new product, the eagle eye of the subsistence laboratory of the army's quartermaster division in Chicago, Ill., spotted its possibilities.

The army was looking for a food, easily transportable, nutritiously excellent with high milk content that could stand subjection to the adverse conditions of army life. In short, the army needed a candy bar designed specifically as an emergency ration.

Important to the needs of soldiers, the contents of

*The candy bar is a compact food unit containing milk solids and honey and is easily transportable for our army's use*



the bar rate high. Most confections are all carbohydrate, but the milk and honey bar contains nine times as much whole milk as honey and added carbohydrates and has 12 percent protein composition. The remaining constituents total 26 percent butterfat, 3 percent minerals, including calcium, 16 percent moisture and the rest is composed of various types of sugar.

Milk solids, with added butterfat, honey, sugar, coloring, flavoring and miscellaneous items such as moisture retainers and emulsifying agents comprise the bar. These ingredients are concentrated to solid form over roller-dryers and coated with high quality chocolate or a sugar glazing material.

Vitamins have not been overlooked in the analyses either. Naturally, the candy is high in vitamins common in milk. Riboflavin, vitamin A and small amounts of thiamin (B<sub>1</sub>) are present.

Emphasis is being placed on the calorific value of the bar at present. Surpassing the calorie content of sugar, figures indicate a count of 4.6 calories per gram.

Corn syrup was tried at one stage of the experimentation in place of honey, but the pleasing flavor created with honey and condensed milk was lost. Small amounts of chocolate were also tried. Even mint, because of its value in stimulating the flow of saliva, was attempted, but it was found too volatile to withstand the concentrating processes.

One danger to be overcome, Dr. Hedrick comments, is to keep the bar from becoming too sweet. "If it is too sweet, the men will get too thirsty, and if we improve the flavor too much, they will eat too much."

Latest tests on the keeping quality of the bar indicate it can be kept for a period of nine months. Work here has been confined largely to experimentation, though the bars are put through a few tests here. The subsistence laboratory runs keeping-quality tests and analyses.

Another advantage of the milk and honey bar is that it fits the specifications set up by the government for the manufacture of confections. These specifications state that any food confection must be manufactured from materials not especially scarce and must be made from equipment now being used.

The candy bar does not need to be concentrated over roller-dryers, but can be done in open candy kettles. When open kettles are used, a distinct caramel flavor develops. Roller-drying is so rapid, caramelization does not have much chance to occur.