Three Home Economists at Work

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HOW often the tedious routine of some school problem seems like a waste of time. Yet many times, in our later experiences, we are grateful for the techniques and the appreciation of standards of quality that come from those drills and repetitions.

Little did I think when I was baking hundreds of cakes for my thesis problem at Iowa State in 1933, that the trials and troubles I went through would one day be the stepping stones to help me reach a better understanding of an important practical problem. A bit of philosophizing might be done here, but we'll let it pass. This important problem is really one of great concern not only to my company, but also to all farmers in the North Central states.

This is a story about one of the greatest improvements in lard in the last 20 years—actually much longer, a half century, perhaps. To the men in the laboratory goes the credit for development and production, but I want to sketch briefly how three graduates of the Home Economics Division of Iowa State College have done their bit to help in the market analysis, the kitchen testing, and the promotion of this new lard.

This story should begin with the days of our grandmothers, when lard was the main cooking fat and all those fine pies, cookies, doughnuts and cakes emerged from the home kitchens. Then came the competitive hydrogenated vegetable oil shortenings in about 1900.
and their rise to such an important place on the marketing lists of the women of today. Even though 12 to 14 per cent of every hog brought to market goes into making lard we have seen an increasing number of vegetable shortenings appear on the market.

More than 10 years ago, intensive work was begun in the research laboratories of Swift & Company to develop a process which would protect the natural fine qualities of lard and add several new qualities to meet the changing requirements of today's shoppers. To the layman, the problem seems easy. In reality, those long formulas for saturated and unsaturated fatty acids that are the base of existence for every home economics student, were the building blocks for the scientists to arrange and rearrange again into the desired pattern.

The result of these years of research is a new bland lard with shelf-keeping qualities. It is white and odorless, has a long plastic range, and, because it is not hydrogenated, it retains the essential unsaturated fatty acids, linoleic and arachidonic. It is an all-purpose fat.

The most important improvement in the lard is a new stability which has been given to fat by the addition of small quantities of a vegetable substance from the tropical guaiacum tree. Gum guaiac, which comes from the sap of this tree, protects the lard from the effects of oxygen in the air and thus retains the advantages which lard has long possessed. As a result, lard keeps fresh when it is exposed to the air without refrigeration.

The discovery of guaiacum as an antioxidant which stabilizes not only the lard, but the dough and the finished product, was the result of intensive and extensive research. Four years of biological tests followed to prove that gum guaiac was harmless and that lard containing gum guaiac retained all of its healthful qualities. Research men had made a lard that would not become rancid; yet they had saved the essential unsaturated fatty acids.

Next steps in improving the lard were relatively easy—bleaching to remove all trace of color, deodorizing to remove odor and flavor, adding a small percent of hydrogenated lard to improve the firmness or body of the lard and designing a three-pound, hinged-top can to make a fitting modern container for the modern new lard.

The proof of the discovering is in the using. It was here that the work of the home economists began. Our task was to help find out what kind of a shortening women really want—that is, what do they buy and why. This was done through demonstrations, talks, and displays in grocery and meat stores where one of the Martha Logans interviewed typical women buyers. From these interviews of women by a woman, we were able to help interpret to the men in the laboratories the real wants that motivate women in buying shortening.

Our second function was to test in the laboratory kitchens the samples of the lard as it was changed and improved. Here Lydia Cooley, a 1930 graduate of Iowa State, played an important part in standardizing techniques and tests to give an accurate record of kitchen performance. All through the developmental work, Miss Cooley ran standard tests on the lard for pastry, cakes, biscuits and doughnuts. This was a practical application of the experimental cookery course in college.

When the new bland lard was at last perfected, the copy to be used on the new carton and the three-pound can was sent to our test kitchens for our recommendations. From our interviews, we knew that most women recognized the value of lard for pies, but that the real news was that this lard makes excellent cakes. The new high smoke point of 420°F. was also news. Therefore, a recipe for cake and a statement of the smoke point were featured on the packages.

Last summer, Emma Francesia, H. Ec. '32, joined our staff to devote her entire time to promoting the use of this new lard. She will develop new uses for the bland lard, follow up any complaints from our customers, give demonstrations and lectures and help in sales promotion.

This is an age of discovery when in the research laboratories of the nation the future is born. The home economics trained woman can and does play her part in the changing economic scheme as an understanding liaison worker uniting more closely the women buyers and makers of goods for women.

Three "Martha Logans," Emma Francesia, '32, Beth Bailey McLean and Lydia Cooley, '30, have interviewed typical women buyers to help interpret to the men in laboratories the real wants that motivate women in buying shortening for many cooking uses.