1942

Soybeans Join the Victory March

Virginia Brainard

Iowa State College

Follow this and additional works at: http://lib.dr.iastate.edu/homemaker

Part of the Home Economics Commons

Recommended Citation

Available at: http://lib.dr.iastate.edu/homemaker/vol22/iss4/3

This Article is brought to you for free and open access by the Student Publications at Iowa State University Digital Repository. It has been accepted for inclusion in The Iowa Homemaker by an authorized editor of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
Soybeans Join the Victory March

Versatile soybeans grow in importance for nutrition, textiles and war industry, explains Virginia Brainard

SOYBEANS may soon feed, clothe and house military and civilian populations. The protein molecules of this "miracle bean" contain treasures that already are joining the nation's march to the new fronts of the world.

One of the most versatile vegetables in the world, soybeans are becoming increasingly important in nutrition. Fabrics are being woven from fibers spun from soybean meal. Plastics are being manufactured from soybean oil. Soybeans make nitroglycerine. In industry, in nutrition, in the armies of the world, full utilization of the plant's resources has just begun.

Corn Belt farmers are growing soybeans primarily as a protein supplement to other livestock feeds after the oil has been extracted. At present, this is the most important use for soybeans, according to plant experts, but the vast resources of the bean have not yet been completely tapped. Development of soybeans in nutrition, textiles and plastics continues on a small scale and the work is in the formative stages.

Nutrition promises to loom as one of the soybean's most important fields. The protein in soybeans is one of the richest in high quality protein. Soybean meal is 35 to 41 percent protein with added fats, essential minerals, vitamins and lecithin present.

A soldier's ration can be heavily fortified by soybean food products. Armies on the march can pack a three-day supply of soybean flour in each knapsack. The United States Army is already using soybean flour but the flour is not yet widely available for use throughout the rest of the country.

Homemakers can take their cue from army field kitchens for full utilization of all food value from the beans. Green soybeans as vegetables are new. When cooked in boiling, salted water, seasoned with salt and pepper and served hot, the beans can be substituted for fresh peas. They may have a sweet, nutty flavor, or resemble baby lima beans.

Pure soybean flour has been mixed with other flours for making breads. Nutrition experts say that the soy flour improves texture of bread, reduces the starch content and increases protein content. The bread also has finer toasting qualities and will stay fresh longer because it retains moisture better than ordinary breads. Other soybean products that have been used extensively in the United States are salad oils, margarine and hydrogenated fats. Soy sauce has long been a favorite addition to a chow mein dinner.

The vitamin value of soybeans is still under investigation. However, nutritionists report that soybeans, in both green and dry states, are much higher in protein and fat content than are other legumes.

In calcium and iron content, the beans rank with other foods which are considered rich sources of these elements.

The same plant that has begun to furnish food for military and civilian populations may soon clothe those populations, too. Research workers in Henry Ford's laboratories at Fort Dearborn, have discovered how to spin textile fibers from the pulp, or waste material, of the soybean. Ford's scientists developed a synthetic, wool-like fiber that is now used, with wool, in weaving upholstery fabrics. The soy pulp forms the basis for the fibers, which are literally spun from the pulp left over after oil has been extracted from the bean. The fiber comes from a protein solution which is passed through several chemical baths. The solution is forced through spinnerettes and coagulated into filaments.

The research work which was begun in 1937 has succeeded in producing a fiber that will take the same dyes as wool. The fiber is loose and fluffy, white to tan in color and has a high degree of resiliency. Most of the fiber before the war was going into upholstery materials. A suitting material has also been woven that contains 30 percent soybean fiber. A 50 percent blend of the fiber has also proved equal to the felt that is now available for hats.

Fabrics made entirely of soybean fiber are not yet being manufactured for general use. Research experts state that the quality which is necessary for commercial fibrous products has not yet been achieved. Methods of separating and purifying the soybean protein must still be perfected.

Although the fiber resembles wool very closely, soybean fiber at present has only 80 percent of the tensile strength of wool. Until this disadvantage can be corrected, soybean fiber will serve the nation as a supplement to all-important wool in manufacturing fabrics for civilian and military use.

Plastics, the third gift of the soybeans to industry, were also developed in the Ford laboratories. Winlow frames, steering wheels, gear-shift knobs, distributors, are all manufactured by the Ford processing plant. An enamel paint that holds its luster is also a new discovery.

Adhesives, paper finishes, printing ink and soap are a few more soybean products.

Calsoy, an inexpensive soybean substitute for milk, has been developed to meet a growing demand made by those who recognize milk as a basis for some allergies. As the United States sends more dried milk overseas, Calsoy may become an important part of lower income diets. Soybeans, valuable in peace, have become invaluable in war.