

starchy foods with malt is to still further reduce the labor of digestion. Malt contains an enzyme called diastase, which has the power of rapidly liquefying the starch after the cell walls are ruptured and of then converting it into dextrin and maltose. The latter substance is a sugar and the former is a somewhat similar compound found in large quantities in the crust of bread and in toast where it has been formed by the action of the high heat to which bread has been submitted and to which the sweetness of these materials is usually attributed. Both of these compounds are very soluble and several steps nearer the completion of the digestive process. Naturally the amount of starch changed into these soluble compounds will depend upon the thoroughness with which the malting process has been carried out. Some investigations we have made on this point indicate that the material rendered soluble varies from 17 per cent. to over 44 per cent. of the dry matter of the food.

It is extremely doubtful if the treatment of cereals with malt materially increases their nutritive value. Persons with weak digestion may find them helpful, but it is hard to understand how this treatment will increase the value of the food to such an extent as is sometimes claimed in advertising matter. They may be more easily digested, but digestion experiments show that they are no more fully digested and absorbed than are the older forms of breakfast foods when properly cooked.

This last class of foods is practically always sold in air-tight paper and cardboard packages, which serve to exclude the dust and dirt that sometimes get into the bin or barrel in which the goods sold in bulk are kept. The neat appearance of these packages, and the appetizing nature of the goods, together with the extensive advertising they have received, have forced the manufacturers of other lines of breakfast foods to be more careful of the quality of their products and to pay more attention to the condition in which they are put upon the market. This has resulted in improvements being made in the machinery for cleaning grain and, in some instances, to greater cleanliness around the mill. Altogether we are safe in concluding that the breakfast foods offered for sale to-day are more carefully prepared and handled than they were in former years.

COMPOSITION OF BREAKFAST FOODS.

To intelligently estimate the nutritive value of any of these foods, several factors must be considered. The most important of these are, the chemical composition, the digestibility, the palatability, and the cost.

In the present investigation, the composition of the foods was ascertained by analyzing samples collected partly from the manufacturer and partly from the retail dealer. The analyses were made according to the methods proposed by the Association of Official Agricultural Chemists, and the results are recorded in Table No. 1.

Before we present the results of the analyses, however, let us review the meaning of the terms used by chemists to designate the various components of a food.