

United States Department of Agriculture Special Page

Bulletins and Special Articles Issued by the Government, of Interest to the Northwest;
Suggestions Covering a Wide Range of Activities; Result of Federal Investigations, Etc.

Government Finds No Food Shortage Likely

THE Department of Agriculture has issued the following statement:

The 1914 wheat crop of the United States was estimated to be 891,000,000 bushels. The estimated surplus carried over from the 1913 crop was about 76,000,000 bushels. There was, therefore, a total available supply of 967,000,000 bushels. As the normal annual per capita consumption of wheat in the United States is about 5.3 bushels, 520,000,000 bushels should meet our normal domestic requirements for food; in addition, 90,000,000 bushels are required annually for seeding. Six hundred and ten million bushels, therefore, should supply the normal domestic demand.

This would leave a surplus of 357,000,000 bushels. Of this surplus about 210,000,000 bushels were exported by January 30. This left 147,000,000, or 40,000,000 bushels more than our average annual export for the past five years, for export between February 1 and the appearance of the new crop, or for carrying over into the next crop year. The amount is sufficient to permit the export of nearly 1,000,000 bushels a day until July 1, before which time the new crop will begin to be available. This is about the average recent exportation.

The large demand for our wheat arises from the fact that there was an estimated world's shortage of over 400,000,000 bushels outside of the United States; from the fact that the Russian exportable surplus of 100,000,000 bushels is not available generally, and from the fact that the belligerent nations are eager to secure food supplies. If it were not for these things we should be discussing ways and means of disposing of our tremendous surplus of food products.

As has been stated, the new American crop will begin to appear before July. The Argentine crop is now coming on the market. It is estimated that from that source there will be available 100,000,000 bushels. A surplus of 75,000,000 bushels or more from India will be available in May and June. The increase in the Fall-sown wheat acreage of the United States in 1914 was 11.1 per cent, or over 4,000,000 acres; in the Northern hemisphere generally the acreage of winter wheat shows an increase of from 3 to 33 per cent, as follows:

Denmark	3 Per Cent
Italy	5 Per Cent
Switzerland	10 Per Cent
United Kingdom	10 Per Cent
United States	11 Per Cent
India	22 Per Cent
Canada	33 Per Cent

But suppose a shortage in wheat should develop in the next three months, what would be the situation? There is a great surplus in other food crops in the United States, a number of which can be used as substitutes. Wheat does not constitute more than 12 per cent of the normal diet, about the same as poultry and eggs. Meat and dairy products constitute 43 per cent, vegetables 11 per cent, fruits, nuts, sugar, fish and other items the remaining 19 per cent.

There are larger supplies of corn and other grains, meat animals, dairy products, potatoes and fruit at the opening of 1915 than for many years. The most important competing products are corn and potatoes. This is shown by the fact that while the normal consumption of wheat is 5.3 bushels in Maine it is only 4.7 bushels, and in Michigan five.

In the wheat-growing states where wheat is abundant, such as Minnesota, the average is 7.2, whereas in the South, where corn is much used, the average is four bushels. Normally about 3 per cent of the corn crop is consumed as food. Of our total crop about 80,000,000 bushels would be used for food, the remainder could be used for foods and substitutes used for animals.

The potato production in the United States averages 3.8 bushels per capita. This year the available supply is 4.1 bushels. The average price of meat animals was 7 per cent cheaper in January than a year ago, butter 2 per cent lower, of potatoes 35 per cent lower, and of apples it was 37 per cent lower.

It would seem that the United States is not likely to be threatened with a shortage of foodstuffs.

Mixed Flour Bread Experiments

BAKING experiments to test the value of making bread of potato-meal mixed with wheat flour are now being undertaken by the U. S. Department of Agriculture's Bureau of Chemistry. This is to test the possibilities of the potato in the same manner as Germany and Austria are now advising their people to do. The increased cost of living throughout the world has emphasized the fact that flour made of other substances than wheat, or of these substances mixed with wheat, might provide people with healthful food quite as nutritious as the pure wheat flour and at the same time cheaper.

Austrian bakers are now compelled by law to use at least 30 per cent potato-meal in making their bread. The Bureau of Chemistry's potato-meal bread has been baked with from 25 to 50 per cent potato-meal and the remaining percentage wheat. The most satisfactory loaves in combining economy and appearance were those made with the minimum percentage allowed in Austria or less.

The loaves made with more than 30 per cent potato-meal were not so satisfactory, as they were heavier and less attractive in form. The bread has a rather coarse texture and dark appearance, but possesses a distinctive and agreeable flavor. It also retains moisture for a much longer period than ordinary wheat bread.

Potato Flake.

The Bureau of Chemistry used the imported "potato flake" in some of its experiments and in others meal made by slicing, milling and drying potatoes on a small scale in its laboratories. It should be added that such ordinary "potato flour" as is on our American markets is not the same as the German "potato flake" or Walzmehl which has given such satisfactory results in the experiments.

The question has been raised as to whether the ordinary cooked potato might not be satisfactorily substituted for the prepared potato-meal. The experimenters believe that it might serve the same purpose if used in just the right proportion, but this would be difficult for the average housewife to determine, as there is great danger of using too much and producing a very soggy loaf. However, the custom of adding a very little potato is already used by many housekeepers to keep their bread moist and this practice can very well be recommended for more general use.

Banana and Chestnut Bread.

Dried bananas, ripe and unripe, and chestnuts are other substitutes for wheat flour with which experiments are being made by the bureau of chemistry. Still other products which offer promise of furnishing the public with a cheap and nutritious bread are the following: Bran, soy bean, white bean, millet, kafir, milo, dasheen, cottonseed flour, oatmeal, cassava, buckwheat, rye, corn gluten, kaoliang, rice (polished and natural), peas, potato (Irish and sweet), corn meal (white and yellow).

The breads made from these various ingredients have already been photographed and analyzed. The flours from which the breads were made are being analyzed that it may be known exactly how nutritious they are in comparison with the pure wheat flour. The soy bean and cottonseed flours, when mixed with wheat flours in proper proportions (about 25 per cent), give a bread with about twice the amount of protein (muscle-building element) that ordinary wheat bread contains.

Law Makes Mixed Flour Unpopular.

The bureau of chemistry is making these experiments in spite of the fact that there is a law which makes it difficult for manufacturers to make mixed flour satisfactorily. This law surrounds the manufacture of mixed flour with so many restrictions that the business has not become a popular one. The result is there is very little mixed flour at present manufactured and offered for sale.

The mixed flour act was passed in 1898 before there was a food and drugs act, and was passed for the purpose of raising a war revenue at a time when many of the common articles of food did not command so high a price as now.

The tax of 4 cents which is now imposed on every barrel of mixed

flour is not in itself a heavy one; it is the collection of it with the attendant regulations and restrictions that hamper any manufacturer who would like to make such flours.

It should be stated in connection with the mixing of other materials with wheat flour in making bread that this cannot always be done economically. There must be taken into consideration the prevailing market prices of the commodities to be used.

This article is written primarily for the purpose of bringing to the attention of the public the fact that in order to obtain good, nutritious and wholesome bread it is not necessary to use an entirely wheat flour. A mixture will in many cases produce a bread which is quite as satisfactory.

With this a matter of common knowledge, it is believed in times of over-production and the consequent favorable market prices of substances suitable for mixing with wheat flour that bakers may wish to experiment with certain mixtures.

Care should be taken, however, in marketing or selling of bread to which has been added in appreciable amount any ingredient other than wheat, that no deception is practiced and that the consumers are aware of the kind of bread being furnished them.

Use Cactus Solution in Arsenical Sprays

AN ENTOMOLOGIST of the Department of Agriculture, who had seen Mexicans add cactus to whitewash in order to make it stick to boards, derived from this the idea that cactus solution would make arsenical sprays for killing insects adhere to plants and thus protect the plants against insect ravages for a longer period. As the result of a series of experiments with the ordinary "prickly pear" or (*Opuntia lindheimeri*) Engelm., which is plentiful in the Southwest, it has been found that if sliced prickly pears, or indeed any other cactus of sufficient size, are added to the water before the zinc arsenite or Paris green and the lime are put in, the mixture will stick to the plants much better than be effective for a much longer period.

The experiments were made with the cucumber and similar plants, which are attacked by the belted cucumber beetle, (*Diabrotica balteata*), and it was found that in regions where prickly pears are obtainable the method is excellent to prevent damage by insects with habits similar to those of the belted cucumber beetle, such as the 12-spotted cucumber beetle, etc.

The method used was as follows: The spines were first burned from the prickly pears, then sliced at right angles to the spine, or in cases of large pears, cut both ways. The sliced cactus was then put in water and allowed to soak over night. It was found that 15 pounds of spiny cactus to 50 gallons of water is about the proper proportion.

Where too much cactus is used it interferes with the spray. The water over-night draws out the mucilaginous substance from the cactus, which makes the adhesive for the poisonous substances. Cactus grown on low, wet soil possesses less of this mucilaginous substance and more water than cactus growing in high, dry regions.

Another test was made with cactus solution as compared with whale-oil soap. Very careful notes were made and it was found that the soap equaled the cactus in spreading power, but the cactus spray adhered better than the soap spray. Therefore the cactus was favored, since heavy dews will wash poison with slight adhesive qualities from the foliage in a short time.

The water from the cactus was drawn off, and with it in one set of experiments were mixed three pounds of zinc arsenite with 50 gallons of water. This was used in sprays on sugar beet plants infested with the striped cucumber beetle. Check experiments showed that in about six days after spraying all the beetles were dead.

In another experiment one-half pound of Paris green and two pounds of lime were used with 50 gallons of the water of the cactus solution. Again the spray, within a few days, killed all the beetles.

European Starling Is Found Pest in Orchard

IN ITS annual report for the last fiscal year, the bureau of biological survey of the United States Department of Agriculture reports as follows on the European starling:

Introduced into the United States nearly 25 years ago, the European starling has gradually extended its range from New York City, and now it is found in the neighboring states of Connecticut, New Jersey, New York, Pennsylvania and Massachusetts. During its migrations in search of food it ranges much farther from the original center and occurs in considerable numbers as far south even as the District of Columbia.

The starling is markedly insectivorous, especially in summer, and preys upon many noxious varieties. In this respect it is to be classed among our most useful birds. So far as is known, it has not proved destructive to grain crops, but it is known to be very fond of small fruits, and as it associates in large flocks it is likely to become a pest to the orchardist.

In addition, it prefers tree cavities, boxes, or recesses in buildings for nesting sites and thus is brought into direct competition with certain of the useful native birds, more particularly the bluebird, purple martin, white-bellied swallow, house wren and flicker.

The bird is steadily extending its territory, and it will be wise to withdraw all protection from it, as has already been done in Connecticut, New Jersey, New York and Pennsylvania, including the center of its abundance, with a view of checking its increase and spread. The shipment of these birds from one state to another has been prohibited under heavy penalty by act of Congress.

Under ordinary circumstances, even after all protection is withdrawn, the bird will probably prove to be capable of taking care of itself. That ultimately it will spread over a large part of the United States is highly probable.

Hog-Cholera Remedy Makers Misuse Facts

THE attention of the bureau of animal industry of the United States Department of Agriculture has been called to the fact that the makers of a medicine sold as a hog-cholera remedy are misusing Government figures of the results obtained by Federal agents by the use of anti-hog-cholera serum, as evidence of the efficacy of their medicine. In several magazines there have appeared reading notices in which there are statements that this medicine has resulted in saving many hogs from hog cholera in Pettis County, Missouri, Montgomery County, Indiana, and Dallas County, Iowa.

The figures given to indicate the results are exactly those reported to the department by its agents as showing the use and effect of anti-hog-cholera serum in sick herds.

For example, the Government figures on the use of serum, which are misused in this way by the medicine concern, are as follows:

Pettis County, Missouri—Hogs in infected herds treated, 5904; hogs lost, 1038.

Montgomery County, Indiana—Number of sick hogs in infected herds treated, 4362; hogs lost, 894.

Dallas County, Iowa—Number of sick hogs in infected herds treated, 5686; hogs lost, 1928.

It is scarcely possible that any remedy could have been used on identically the same number of hogs and with exactly the same results as the anti-hog-cholera serum. On this point the inspector in charge in Pettis County, Missouri, says: "As far as we are able to ascertain, none of this remedy has been used in Pettis County."

Farmers and others, therefore, are warned not to confuse this "remedy" with the anti-hog-cholera serum which is the one method of treatment used by the Federal Department of Agriculture.

Progress.

"And you actually went to ask old Billinger for his daughter's hand?"

"Yes, I did."

"How'd you get along?"

"Fine. Not the least bit of trouble. He talked war talk all the time I was there and never gave me a chance to say a word."—Cleveland Plain Dealer.