

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.

Cultivating Food for Robins and Bluebirds

THE economic importance of keeping our robins and bluebirds supplied with food is emphasized in a new bulletin of the United States Department of Agriculture, entitled "Food for the Robins and Bluebirds of the United States." These two members of the thrush family are most attractive and desirable assistants to the farmer, reducing the insects that prey on his crops besides eating a number of undesirable weed seeds. However, as they are very generally distributed throughout the United States and are usually abundant wherever found, it sometimes becomes a problem to provide for them when the supply of insects and wild berries is insufficient and the birds have to resort to cultivated crops to sustain life.

In order to keep the birds from destroying valuable crops the Department's biologist advises that they be provided with adequate supplies of wild fruits and berries by their human friends. Ornamental trees and shrubs which furnish these may be planted in the vicinity of cultivated crops for this purpose.

The new bulletin is a professional paper and goes into considerable detail into the diet of the five different species of American robins and bluebirds which are enumerated as follows:

Common robin (*Planesticus migratorius*).

Oregon robin (*Ixoreus naevius*).

Eastern bluebird (*Sialia sialis*).

Western bluebird (*Sialia mexicana*).

Mountain bluebird (*Sialia currucoides*).

The complaints against the robin have dwelt on his fondness for cherries, strawberries, blackberries, raspberries, pears, peaches, prunes, grapes, and even olives in California. The bluebird's consumption of cultivated fruits seems more limited, being practically confined to cherries, raspberries and blackberries and its fruit-eating period is very short, being only from late Fall to early Spring when the insects which it prefers are scarce.

The bulletin contains a list of ornamental plants which, it is suggested, might be planted in regions where the robin and bluebird are occasionally compelled to feed on cultivated varieties of fruit and berries. In olive regions, for instance, if a robin can find such berries as Madrona, Heteromeles and Cascara he will prefer them to the cultivated fruit valued by man. Mistletoe and elderberries are among the varieties recommended for the bluebird in particular. Dogwood, pepper berries, china berries and hackberries are popular with the robin, and, in the North, cedar, smilax, and holly give them both food and shelter.

The Department's biologist advises farmers by all means to encourage the robin and the bluebird, considering that they will more than compensate for occasional depredations by the assistance rendered in killing undesirable insects and that they can be pretty effectually kept from eating valuable fruits if they are provided with a supply of wild ones for winter diet when insect food is scarce.

U. S. A. vs. European Areas.

Some idea of the size of the United States is gained by comparing our country with the European nations involved in the great war. For instance, Russia is the only country in Europe that is larger than our State of Texas.

France is not quite as big as California and Alabama combined.

Germany is about the same size as France and about equal to Montana and Georgia combined.

The British Isles are about the same size as New Mexico.

Belgium is not quite as big as Maryland.

Italy is about the size of Nevada. Servia is almost 25,000 square miles smaller than Indiana.

Illinois is nearly as large as Belgium, Servia and Netherlands combined.

Italy is about twice the size of Illinois.

Texas and California together are bigger than Germany and France together.

Austria with 241,491 square miles is the biggest country in Europe next to Russia, but is 25,000 square miles smaller than Texas.

Boy Corn Raisers in Indiana Are Hustlers

THAT the Indiana boy corn raisers are hustlers is proven by the records of the five champions in the Corn Club work of that state, conducted co-operatively by the United States Department of Agriculture and Purdue University. These young men were recently in Washington on a sight-seeing trip, under the charge of their state leader, their expenses being paid by certain local organizations which desired to see the boys rewarded for their excellence in this manner. The boys remained several days in the city.

Each boy during the past year raised more than 100 bushels of corn on his one-acre plot and the cost per bushel ranged from about 9 to 18 cents in the special cases. The exact yields and costs per bushel are as follows:

Champion and County—	Yield, bu. per acre.	Cost per bu.
Wayland Ziesensko, Lake.....	100.12	11.50
Arthur Trout, Delaware.....	109.12	11.50
Roy McAhren, Bush.....	119.36	15.70
Roy Friederdorf, Bartholomew.....	128.83	12.60
Fred Thomas, Posey.....	116.53	8.92

*Cents.

The fine records made by these boys, however, do not tell the whole story, for these are merely the very best. There were many other good records which deserve commendation.

Such a Dream!

Oh! would you know my Celia's charms?
She has no pet dog in her arms!
She does not dye her hair or face!
She walks with perfect ease and grace!
She does not talk in slipshod slang!
She does not sport a "rat" or "bang!"
She wears no corset tightly laced!
She has a very natural waist!
She has a voice that's sweet and low!
She's got—and I am he—one beau!
She—this is true—she's never late!
She never makes her escort wait!
She's really moderate in her talk!
She likes, in preference, to walk!
She is par excellence you'd deem,
—La Touche Hancock, in New York Sun.

There is nothing quite like shiftlessness to drive the boys from the farm to the city. Farm boys like to see things go. In fact, a wide-awake boy appreciates having things done right. Think about these things, brother farmer, and make a path of interest so bright on the farm that the boys will become interested in all departments of farm life.

Relation of Alcohol to Agriculture in Germany

THE importance that alcohol distilleries may assume in scientific agriculture is pointed out in a recent professional paper published by the United States Department of Agriculture under the title of "Agricultural Alcohol; Studies of Its Manufacture in Germany." The results of the author's study indicate that the manufacture of alcohol for technical purposes, not for human consumption, is not regarded in itself a profitable business, but as a necessary factor in general farming. The distilleries provide a market for Germany's enormous potato crop, which in turn has made possible the profitable cultivation of large tracts of light, sandy soil in the east.

The spent mash again is returned to the farmers from the distilleries and used as feed for cattle which furnish manure for the enrichment of the soil. On account of the pressure of the population and the desire to cultivate as large an acreage as possible, German farmers have not been raising as much livestock as would be good agricultural practice, and anything that tends to stimulate them in this direction is regarded as most desirable.

Approximately 6000 agricultural potato distilleries are now in operation in the German Empire. Many of these are co-operative distilleries in which it is interesting to note that the co-operators do not hold shares having a certain money value, but possess the privilege of calling daily for a certain quantity of spent mash. To the potato crop itself an eighth of the arable land in the German Empire is now devoted, and the production is enormous.

In some instances crops of more than 535 bushels per acre have been harvested, while yields of 300 to 375 bushels are quite common. Although such yields are produced only under favorable circumstances, it seems obvious that the total yields can be very considerably increased if new uses for alcohol can be discovered to create the necessary demand. At the present time in the eastern provinces it is the price of spirits which regulates the price of potatoes.

Lumbermen who take cedar and mahogany from the forests of Colombia are required to plant young trees of the same species in the cut-over spaces.

Manufacture of Acid Phosphate Is Subject

THE manufacture of acid phosphate has come to play such an important part in the fertilizer industry of the United States that the Department of Agriculture has just issued a bulletin (No. 144) on the subject, which is designed both for manufacturers and for progressive farmers. Phosphate rock, it is said, has almost entirely displaced bones, guano and apatite as a source of phosphoric acid and a knowledge of the composition of the rock is of importance because not only the phosphate of lime but all the impurities as well are acted on by the sulphuric acid used as a reagent and influence the finished product.

Of all the impurities occurring in phosphate rock, compounds of iron and aluminum are the most troublesome. Even in small quantities these elements are apt to cause a certain amount of reversion and in large quantities may render the product sticky and unfit for use. By careful handling, however, phosphate high in iron and aluminum compounds may be made to produce high-grade acid phosphate. On the other hand carbonate of lime is rather desirable when the quantity is not excessive.

Both the "den" and the "open dump" systems are in general use for making acid phosphate, each having certain advantages. In the "den" system, after the rock and sulphuric acid are thoroughly mixed, the compound is dropped into a closed, heated chamber or "den" where chemical reactions raise the temperature to a high point and are completed in 24 hours or so, the product being then ready for shipment.

In the "open dump" system, as the name implies, the mixture of acid and rock is dumped on an open pile and may require a month or even longer to become fit for use. The heat given off in the process, moreover, may become a serious nuisance in the vicinity of towns. On the other hand, the removal of the acid phosphate from the den is troublesome at when done by hand, sometimes dangerous.

The cost of producing acid phosphate depends on a number of varying factors, such as the size, location and equipment of the plant and the cost of sulphuric acid. Exclusive of office expenses it may be said to range from \$6.20 to \$8 a ton.

Growing of Blackberries Is a Good Investment

UNDER good management an average yield of 2300 quarts of blackberries per acre can be expected, according to a recent publication issued by the United States Department of Agriculture. Where the soil is very deep and rich and the best moisture conditions are found this may be increased to 5000 quarts and certain varieties on the Pacific slope have even given 7000 quarts an acre. The last census showed that approximately 50,000 acres were devoted to blackberry plantations in the United States.

This acreage is distributed over practically the entire country. Missouri leads with nearly 6000 acres and New Jersey is second with 4300. As a matter of fact, blackberries can be grown successfully on almost any type of soil and in a wide range of climates. In the colder parts of the Northwest the severe winters frequently kill the plants and in the arid sections of the West hot, dry winds destroy the ripening fruit. The choice of proper varieties, however, will do much to overcome natural difficulties.

Selecting a Plantation.

In selecting a site for a blackberry plantation, the most important considerations are the moisture of the soil and the accessibility of a market. The blackberry is a tender fruit, the keeping qualities of which are seriously affected by jarring over rough roads. It is, moreover, essential that the berries should be placed on the market as quickly as possible after they are picked if they are to command a good price.

The best land is a deep, fine, sandy loam with a large supply of humus and abundant moisture at the ripening season. On the other hand, the plants are often killed if water stands on the plantation during the winter.

The year before the establishment of the blackberry plantation the land

should be planted with a cultivated crop. This insures the thorough rotting of the sod and will help to destroy the cutworms and other insects injurious to the young plants. The soil should be plowed to a depth of about nine inches to the Spring and a thorough harrowing should be given the whole field before the plants are set. This is usually done as early in the Spring as the land can be properly prepared.

The earlier the plants are set the larger the proportion that live and the better their growth. The roots should be set deeply for the canes break easily if the crowns project above the surface of the ground. The tops should be cut back to six inches or less in length. Cultivation is necessary and the plants should therefore be set sufficiently far apart to permit of it.

Intercropping.

During the first Summer some intercrop may be grown between the rows, which will greatly reduce the cost of the berry field that year. This should be one that requires constant cultivation and at the same time one whose growth will not be large enough to shade the blackberry plants. Such truck crops as cabbage and potatoes are excellent for the purpose, while corn and small grains should be avoided. By the second Summer the plants will be large enough to occupy all the space and an intercrop will not be possible.

In both Summers, cultivation should begin early in the Spring and be continued at intervals of from one to two weeks throughout the season in order to provide a dust mulch for the retention of moisture and to keep down suckers and weeds. Suckers are apt to spring up from the roots at various distances from the parent plant, especially when the roots are cut. Digging up these suckers is a favorite way of securing new plants,

but this practice interferes, of course, with the yield of the berries.

Blackberry roots live for many years, but the canes—excepting some varieties—bear only in their second year. After the fruiting season, therefore, they should be cut out and burned. The one-year-old canes are usually left to themselves throughout the winter. Not more than two or four new canes should be left to each plant, however, and the others should be thinned out at the same time that the canes which have fruited are thinned.

Training Plants.

In some cases, it will also be desirable to train the plants in order to facilitate cultivation as well as to prevent them being damaged by winter snows. A wire trellis may become a profitable investment. The simplest form of such trellis consists of a single wire attached to posts at intervals of from 15 to 20 feet in each row of plants. The canes are tied to this wire about 2 1/2 feet above the ground.

Another method is to nail cross-pieces to the posts and stretch wires from the ends of these cross-pieces, which form a support for the blackberry canes on each side. Varieties that grow somewhat like grape vine require a much higher trellis with two wires; one about 3 feet from the ground and one about 3 feet from the top.

One hundred and forty different varieties of blackberries are now recognized, divided into three classes—the hardy, the half-hardy and the tender. The hardy variety should be able to withstand a temperature of -30 degrees F. as well as the wide changes of temperature in the Northern States. The half-hardy class is more susceptible both to cold and change, and the tender variety can only be grown where mild winters prevail.