chances of getting a peach crop every year by including some of the varieties which have a low chilling requirement. See table 3. Since it is not known how well some of these varieties are otherwise adapted to growing conditions in South Mississippi, their use is recommended only on a limited scale. Some of these varieties are: Afterglow, July Elberta, Hiley, Newday, Southland, and Sunhigh. They all require 750 hours of temperatures of 45 degrees F. or below before February 15 for normal fruit and leaf development. All of these varieties are included in the peach varietal orchards at the Truck Crops Branch Experiment Station at Crystal Springs and the Coastal Plain Branch Experiment Station at Newton. In a few years results from these experiments will indicate their general adaptation.

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Blueberry Variety Trials at Blacksburg, Virginia

By GEORGE D. OBERLE and R. C. MOORE
Virginia Agricultural Experiment Station,
Blacksburg, Virginia

In the spring of 1946 a small planting of the highbush blueberry varieties was made at the Virginia Agricultural Experiment Station at Blacksburg. In view of the promising showing made by several of the varieties under soil conditions that vary widely from those generally recommended for blueberries, a short account of the cultural methods followed and the varietal response may be of interest to others interested in blueberries.

The site selected is a ravine bed on the Horticultural Farm about five miles south of Blacksburg. The soil of this site is deep, more fertile than adjoining areas of upland soil and has good moisture holding ability. It is of a clay loam nature and general farm crops have made good growth on it. Tests made on this

soil in 1946 gave *p*H readings of 5.6. The organic matter content was 1.6 per cent. The soil was rated as having a fair calcium level, fair plus for potash and magnesium and fair minus for phosphorus. Application of two tons of agricultural lime per acre on this soil gave good growth of crimson clover, soybeans, and other covers that were planted for soil improving purposes.

Four plants each of 15 standard varieties were planted in randomized locations in 1946. The spacing was four feet between plants and ten feet between rows. The rows were planted on contours in order to reduce washing in the ravine bed which was rather sloping. During the first season after planting the plants received clean cultivation and made very little growth. Sulphate of ammonia was applied at the rate of two ounces per plant. In 1947 the planting was covered with a sawdust mulch to a depth of not less than four inches. The sawdust was a mixture of mostly oak and a very little pine from nearby sawmills and varied from year to year in composition and state of decomposition. The plants made more growth after mulching than they had in the previous year. By mid-summer, however, it was apparent that they were suffering from a deficiency of nitrogen. In 1948, therefore, the rate of application of the ammonium sulphate was increased to one-half pound per plant or double the amount that would have been applied. A few berries were produced and good growth resulted. In 1949 the mulch was renewed again and the plants were given about twice the normal amount of sulphate of ammonia. Excellent growth was made and a good crop of berries was produced. The mulch was again renewed in 1950 and double applications of ammonium sulphate were applied. The plants made excellent growth and bore a heavy crop of fruit. The frequent renewal of the sawdust was necessary because of high winds during the winter and early spring which carried away much of the sawdust material.

The effect of the mulch on soil moisture content was particularly noticeable. Both 1949 and 1950 were years with abundant precipitation but several short periods of dry weather occurred that caused a slackening of growth in other fruit and vegetable crops. The mulched blueberry planting was in no way affected and the soil under the mulch remained moist to the touch throughout the season. Some weeds and quackgrass grew up through the mulch. This necessitated hand weeding once each summer. A more uniform distribution of the mulch early in the season would probably have reduced the number of weeds and grasses that grew through the mulch.

Jersey was easily the outstanding variety included in the test. It bore a heavy crop of large berries which had good color and flavor. Its bush characters leave little to be desired. **Pemberton** gave a good yield of large

berries and has good bush characters. The berries have a good flavor but the scar is large and tears during picking. **Burlington** and **Atlantic** produce a late crop of very large, attractive berries of fine quality but the bushes lack vigor and productiveness. **Stanley** and **Concord** lacked vigor and bore only light crops though the fruit has the fine quality and appearance typical of those varieties. **June** does not yield heavily and the fruit is of only average quality. The bush lacks vigor and its only outstanding character is its early ripening season. **Cabot, Dixi, Pioneer, Rancocas, Scammell** and **Weymouth** performed so poorly that they appear to have little possible value for this area.

Mention must be made here of the showing made by **Harding.** This variety, which originated as a selection from the wild, was ranked second only to Jersey in its all around performance. The bush is not as erect as Jersey but has exceptional vigor. It has produced heavy crops of fruit consistently. The berries are only slightly smaller than those of Jersey, have good blue color, and are firm. They lack the fine flavor and aroma of Jersey but are about as good quality as most of the older varieties. The ripening season begins a few days after Jersey and carries on at least a week after Jersey. The clean, healthy foliage of Harding and the stocky growth of the bush attracted attention throughout the season. It appears to be especially well adapted to growing conditions that would not be considered particularly favorable for blueberries. Therefore, it may be worth considering for home plantings in areas where highbush blueberries do not give their best performance. Harding has been dropped from most nursery lists and it may be difficult to locate a source from which it may be purchased.

Considerable other blueberry material was included in the planting including some species material, some seedlings and selections from the breeding program of the United States Department of Agriculture, several "rabbiteye" varieties and some species hybrids. Of this material only one, as yet unnamd, seedling selection from the United States Department of Agriculture made a promising showing.

Summary

These studies indicate that some varieties of highbush blueberries make satisfactory growth and yields of fruit on soils that are more nearly alkaline in reaction than those recommended for blueberry culture if they are given the proper cultural treatments. These treatments include maintenance of a sawdust mulch of not less than four inches in depth and the application of at least twice the usual amount of a nitrogen fertilizer such as sulphate of ammonia. Jersey, Pemberton, and Harding have made the best all around performance to date.

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