Table 3. Promising germplasm sources for breeding early-ripening, low-chill highbush blueberry cultivars for the central Florida peninsula.

NO.	Germplasm	Comments
1.	Florida highbush cultivars and breeding lines (Sharpblue, Flordablue, etc.)	1. High fruit quality, low chilling requirement, early ripening.
2.	North Carolina and USDA highbush cultivars and breeding lines	2. Highfruit quality, high to medium chilling requirement. Good hybrid vigor in crosses with Florida highbush.
3.	*Vaccinium elliottii*	3. A native north-Florida blueberry. Very early blooming and ripening. Berry very small. F_1 hybrids and backcrosses to highbush cultivars are highly vigorous. Some BC_1 seedlings may be cultivar quality.
4.	Wild north-Florida, south-Georgia tetraploid highbush (*V. corymbosum*)	4. Provide good vigor and adaptation in hybrids with highbush cultivars. Low to medium chilling requirement. Some BC_1 seedlings have cultivar quality.
5.	Wild central Florida diploid highbush (*V. corymbosum*)	5. Very low chilling. Good upright growth habit but berries very small.
6.	Wild *V. darrowi* from central Florida sand scrub. Tallest selections and natural hybrids with diploid *V. corymbosum* seem most useful.	6. Evergreen, very low chilling requirement. Flowers and ripens late and over a long period. Lowbush, colonial growth habit undesirable and usually manifested by F_1 hybrids. Drought resistant and ornamental.

In summary, it is likely that blueberries will someday be produced on a commercial scale in the central Florida peninsula as far south as Lake Okeechobee, both to take advantage of excellent prices for Apr. berries in northern markets and to satisfy the large potential U-pick market. How fast this industry develops depends to a large extent on how quickly new cultivars can be developed and tested in the area.

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SURVEY OF BLUEBERRY ACREAGE IN FLORIDA

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Additional index words. Vaccinium ashei, Vaccinium corymbosum.

Abstract. **Blueberries (*Vaccinium* spp.) have been grown in Florida for many years. During the last few years, many estimates have been made as to the acreage of blueberries in the State. In the spring of 1985, a survey was made to determine how many acres of commercial blueberries are grown in each county in Florida. Both U-Pick and acres intended for fresh-fruit shipment were included in the survey. The total acreage of blueberries in Florida was found to be 1057.7. The area west of the Apalachicola River had 285 acres, the area south of Marion County had 87 acres, and the section between the first 2 areas had 685.7 acres. The size of the plantings varied from one-quarter acre to over 200 acres.**

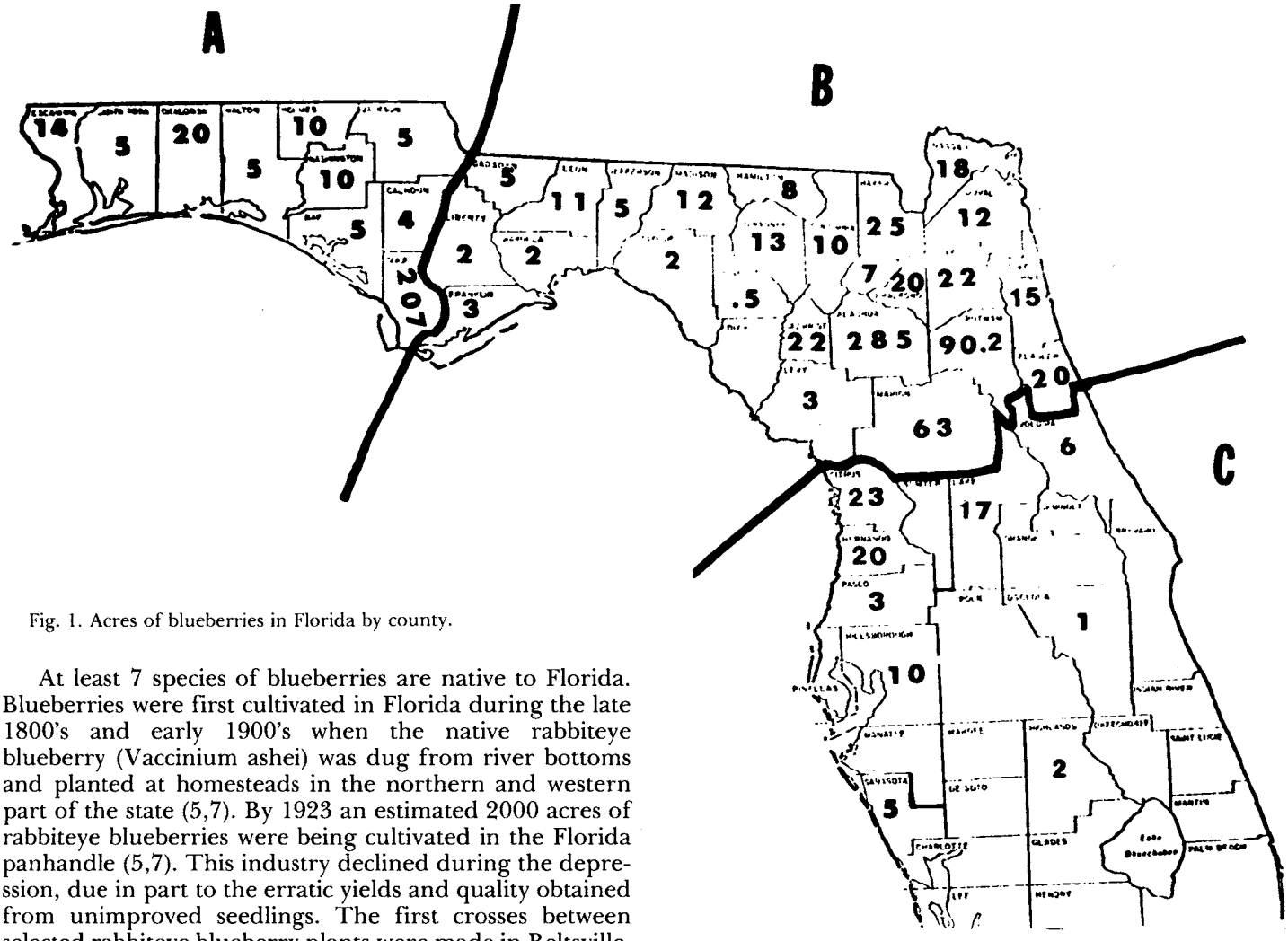

Fig. 1. Acres of blueberries in Florida by county.

At least 7 species of blueberries are native to Florida. Blueberries were first cultivated in Florida during the late 1800's and early 1900's when the native rabbiteye blueberry (Vaccinium ashei) was dug from river bottoms and planted at homesteads in the northern and western part of the state (5,7). By 1923 an estimated 2000 acres of rabbiteye blueberries were being cultivated in the Florida panhandle (5,7). This industry declined during the depression, due in part to the erratic yields and quality obtained from unimproved seedlings. The first crosses between selected rabbiteye blueberry plants were made in Beltsville, Maryland in 1940 and the resulting seedlings were planted at Tifton, Georgia and Ivanhoe, North Carolina in 1941 (1,2,3). The first commercial planting of improved rabbiteye blueberries was made in Florida in 1961 (6).

In 1949 Professor Ralph Sharpe at the University of Florida began working on highbush type blueberries for the South (10,11,12). Release of the low-chill highbush cultivars (interspecific hybrids but mainly *V. corymbosum*) Sharpblue and Flordablue in 1976 and Avonblue in 1977 opened up the possibility of growing blueberries farther south in the state and also of producing the earliest-season blueberries to reach the North American market (8). From there the blueberry industry has grown over the years and various estimates have been made of the acreage of blueberries in the state (9). Therefore, it was decided that a survey was needed to determine how many acres of blueberries were in Florida.

Materials and Methods

Early in 1985, a survey form which asked for the number of acres and type of blueberries grown in that county was sent to the county extension agent in each county in Florida where blueberries were though to be grown. The response rate was low, therefore, telephone calls were made to obtain data from counties that did not return the form. As was expected from some counties, only estimates were obtained and from others the data were complete but not sufficient to indicate more than acres of blueberries per county. The exception was Alachua County where extension personnel surveyed all blueberry growers in the county, and from this information a grower profile was established.

Result and Discussion

Figure 1 shows the number of commercial blueberry acres by counties in the State and by 3 regions: (A) the areas west of the Apalachicola River, (B) the north central Florida areas and (C) the area south of a line drawn at the south end of Marion County. The largest concentration of blueberries is in north central Florida, which has 685.7 acres. The area west of the Apalachicola River shows 285 acres of blueberries and surprisingly, most of this is in Gulf County, which has 207 acres, all in one planting. The berries from the large planting will be shipped as fresh fruit. The area south of Marion County has 87 acres of blueberries.

In the State as a whole, Alachua County has more blueberries than any other, with 285 acres. Much of this acreage has been planted in the last few years, and the same is true throughout the State. Many additional acres are planned by growers.

A more detailed survey of growers showed that Alachua County had 31 commercial blueberry growers. Of these, 21 had less than 5 acres of commercial blueberries,

2 had 5-10 acres, and 8 had more than 10 acres. The largest reported acreage owned by one grower in Alachua County was 85 acres. Blueberry acreage is expected to increase tremendously in the Alachua County area this year with a large quantity of plants already propagated for planting. In the State as a whole, planting size varied from a quarter of an acre up to 207 acres.

These data established a benchmark of where blueberries are grown in Florida as of 1985. We expect future growth in the north central Florida area and in the area west of the Apalachicola River. Further work needs to be done to determine the cultivar composition of Florida's plantings, and to see how many are rabbiteyes and how many are highbush. We expect that most increases in production in the southern part of the State (that area south of Marion County), beyond the 87 acres already reported, will be due to the highbush types.

From less than 100 acres of commercial blueberries in 1973 (4), Florida acreage has now expanded to over 1000 acres. Because Florida has an excellent market window at the beginning of the shipping season and can market fresh blueberries before the season begins in other blueberry-producing states, we expect that acreage in the State will continue to increase.

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PROGRESS IN LOW-CHILL PLUM BREEDING

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Additional index words. Prunus salicina, plum leaf scald, bacterial leaf spot, rust.

Abstract. **At this time there are no high fruit quality, disease resistant, low-chilling Japanese type plums (*Prunus salicina* Lindl.) available for north and central Florida. The breeding program at Gainesville is combining low chill germplasm from Taiwan, high fruit quality from USA temperate zone cultivars, and resistance to bacterial leaf spot and plum leaf scald from the USDA Byron, Georgia breeding program. Two selections, Fla. 8-2 and Fla. 3-4, have been given the local names 'Gulfruby' and 'Gulfgold', respectively. Nine additional selections are in evaluation stages.**

Japanese plums, *Prunus salicina*, and their hybrids with North American species have been tested in central and northern Florida for many years with disappointing results (2,3,4). Lack of low chilling adaptation, poor fruit quality, and susceptibility to bacterial spot, incited by *Xanthomonas campestris* pv. *pruni* (Sm) Young et al., and plum leaf scald, associated with a rickettsia-like organism, have been major factors limiting plum growing in Florida. 'Bruce', 'Mariposa', and 'Excelsior' are among the lowest chilling plums but fruit poorly in central Florida except following the coldest winters, and they lack either high fruit qualities or disease resistance, the latter resulting in a short tree life of 4 to 7 years. 'Methley' and 'Ozark Premier' have low chilling adaptation to north Florida and are grown for dooryard fruit, but have failed as commercial cultivars because they lack fruit quality or are short-lived due to diseases. Florida needs early ripening plums in order to avoid fruit rot diseases during the rainy season which begins in mid-June. Resistance to rust, incited by *Tranzschelia prunispinosae* (Pers.) Diet. which results in early fall defoliation, is readily found in plums (1).

An added problem with plums is self-unfruitfulness, making it essential to have 2 pollen compatible cultivars with similar chilling requirements and overlapping bloom periods to insure cross-pollination. Self-unfruitfulness arises from either pollen incompatibility as in 'Ozark Premier' and 'Burbank' or pollen sterility as in 'Bruce' and 'Mariposa'.

A plum improvement program was begun in the Fruit Crops Department at Gainesville in 1966 to search for available germplasm with breeding potential among available Japanese-type plums (5). The most promising low chill germplasm came from a seedling selection resulting from a *P. salicina* seed importation from Taiwan. This yellow-skinned selection had approximately 100 chilling units (1 chilling unit = 1 hour of chilling at an optimum temperature usually thought to be near 7°C), had 25g fruit, and

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