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Chilton,

a High Quality Fruit for the Commercial Market

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CHILTON is a new cantaloupe variety adapted to the Southeastern United States. It has resistance to *Pseudoperonospora cubensis* (downy mildew), *Spherotheca fuliginea* (powdery mildew) and *Mycosphaerella citrullina* (gummy stem blight). It produces good yields of high quality fruit suitable to packing for the commercial market.

Prevalence of foliar diseases, particularly downy mildew and gummy stem blight, and susceptibility of existing varieties to these diseases discourage the growing of cantaloupes in the Southeastern States. In 1970 and 1971 the introduction of the high quality, disease resistant varieties, Southland *(2)*, and Gulfcoast *(3)*, demonstrated that high quality fruits could be produced in humid climates. Due to the large size of the fruit, Southland is not suitable for packing for the commercial market. Therefore, Chilton meets the need for smaller fruit for the commercial market.

ORIGIN

Chilton is an inbred line from the cross AC-63-11 x PI 140471. Following the cross, a backcrossing and disease screening program was followed with selection of disease resistant seedlings that produced high quality fruit. Thus, Chilton originated from a program of backcrossing and inbreeding to obtain resistance to gummy stem blight, downy mildew, and powdery mildew. It has been grown in trials as AC-68-55 at Auburn and a number of substations of the Auburn University Agricultural Experiment Station and in the Southern Cooperative Cantaloupe Variety Trials in other Southern States.

DISEASE RESISTANCE

Chilton has been rated for resistance to gummy stem blight, downy mildew, and powdery mildew, in several tests at locations in Alabama and other Southern States, Table 1. Resistance to gummy stem blight was incorporated into the breeding lines through a screening program which utilized an incubation chamber and greenhouse to eliminate susceptible plants from the populations. Resistance of Chilton plants has been excellent in field plantings in 1968, 1969, 1970, and 1971. The high level of resistance to gummy stem blight was secured from PI 140471 *(3,4)*. Resistance to downy mildew and powdery mildew was obtained from Georgia 47 and Florisun through AC-63-11 (Southland) *(1)*.

TABLE 1. DISEASE INDEX RATINGS FOR DOWNY MILDEW, POWDERY MILDEW, AND GUMMY STEM BLIGHT

Variety or breeding	Disease index[1]			
	Downy mildew	Powdery mildew	Gummy stem blight	Average
Chilton	1.0	1.0	1.0	1.0
Edisto 47	1.5	1.5	3.5	2.2
Gulfcoast	1.0	1.0	1.0	1.0
Hales Best Jumbo	3.5	3.5	5.0	4.0
Southland	1.0	1.0	1.5	1.2

[1] Index: 0 = no injury, up to 5 = all plants severely damaged.

FRUIT

The fruit is mostly round with some being round-oval in shape. They measure 5 to 6 inches in diameter with an average of 2½, Table 2. Fruit size will vary at different fertility levels and in

TABLE 2. AVERAGE YIELD, FRUIT WEIGHT, AND SOLUBLE SOLIDS OF CANTALOUPE CULTIVARS AND BREEDING LINES GROWN IN FIVE ALABAMA LOCATIONS 1968-1971

Variety or breeding lines	Average all locations		
	Yield per acre	Fruit weight	Soluble solids
	Lb.	*Lb.*	*Pct.*
Chilton	19,570	2.51	12.92
Edisto 47	18,342	3.07	10.89
Gulfcoast	20,293	2.64	12.61
Hales Best Jumbo	12,054	2.64	6.56
Southland	19,642	3.18	11.35

different production areas. Adequate size for the commercial pack of 24 and 27 size melons may be secured with adequate fertility and irrigation.

Being a sister line of Gulfcoast, Chilton is similar in fruit characteristics to Gulfcoast. However, the fruit of Chilton are slightly smaller than Gulfcoast, Table 2. Chilton fruit tends to be more round than Gulfcoast fruit. Soluble solids content of Chilton are slightly higher than Gulfcoast.

Chilton fruit is smaller than the "Jumbo" melons commonly grown and hauled loose without the use of boxes or crates. Therefore, it may not sell as well on the open market in competition with jumbo size melons. Due to its smaller size, the grower should either market it with wholesale produce buyers or with other outlets for high quality fruit.

The fruit is slightly ribbed, well covered with a medium net, and matures in 70-75 days, approximately the same as Hales Best Jumbo and Southland. The flesh is thick, deep orange in color, and of excellent flavor and aroma. Seed cavity is small.

The fruit is very firm and adapted to handling in commercial markets. The flesh is firm at the full slip stage; however, it will soften to an excellent condition for dessert quality after 3 to 4 days.

Chilton compares favorably with established varieties in yielding ability, Table 2; however, it is superior to existing varieties in shipping quality and edible quality as indicated by taste and soluble solids, Table 2.

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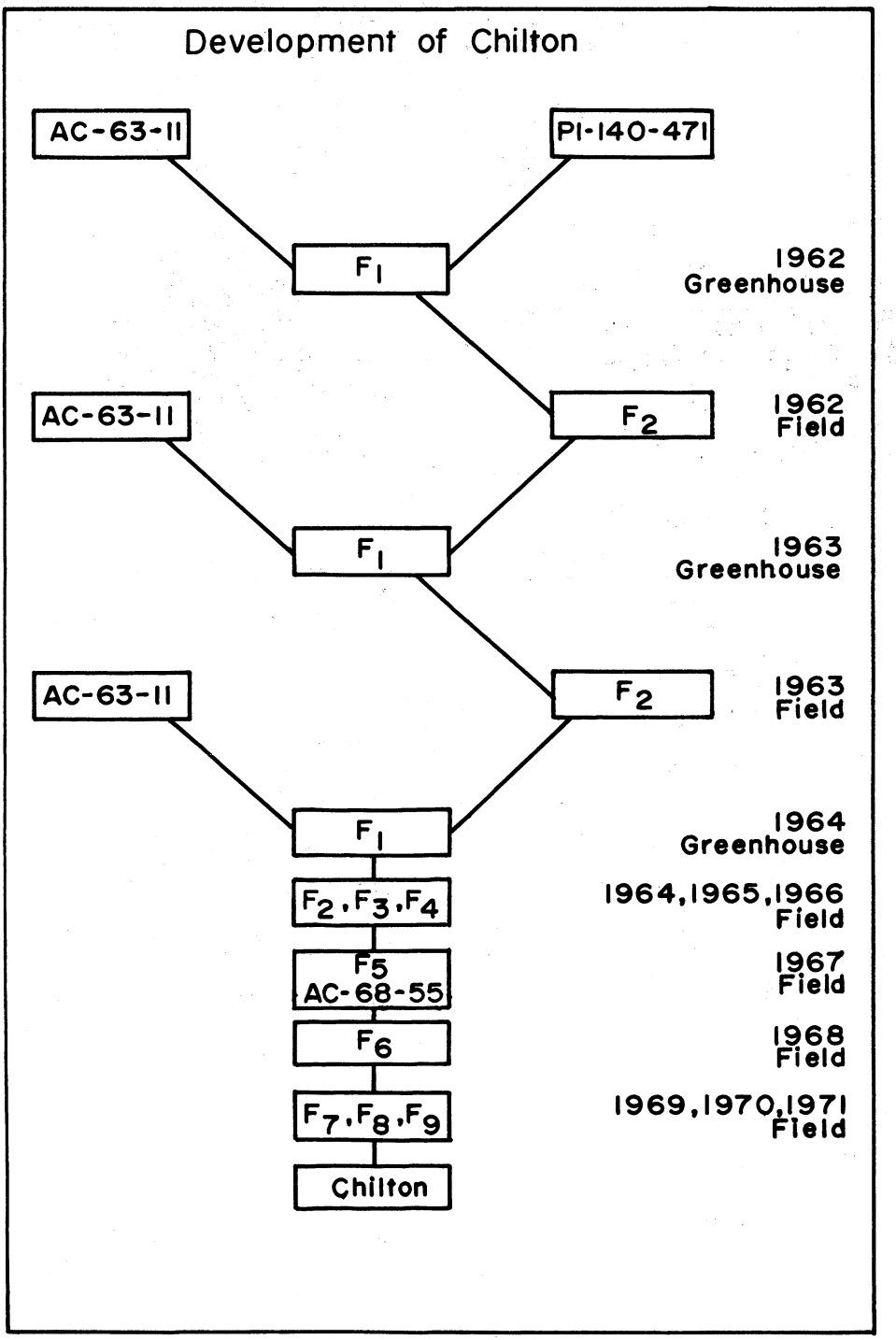
Development of Chilton
AC-63-11
PI-140-471
F1
1962
Greenhouse
AC-63-11
F2
1962
Field
F1
1963
Greenhouse
AC-63-11
F2
1963
Field
F1
1964
Greenhouse
F2, F3, F4
1964, 1965, 1966
Field
F5
AC-68-55
1967
Field
F6
1968
Field
F7, F8, F9
1969, 1970, 1971
Field
Chilton