



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**PROCEEDINGS  
OF THE  
CARIBBEAN FOOD CROPS SOCIETY**



**TENTH ANNUAL MEETING  
PUERTO RICO**

**1972**

**VOLUME X**

TRIAL OF "CANTALOUPE CHARENTAIS", MUSKMELON BREEDING LINES FOR WATERMELON  
MOSAIC VIRUS (WMV<sub>1</sub>) RESISTANCE AND MILDEW TOLERANCE

C. Anais, F. Kaan, and C. Vincent  
Station d'Amélioration des Plantes, INRA  
Centre de Recherches Agronomiques des Antilles et de la Guyane  
Domaine Duclos, Petit-Bourg, Guadeloupe

INTRODUCTION

The present trial was to test in the field, some of the muskmelon breeding lines for Watermelon Mosaic Virus (WMV<sub>1</sub>) resistance and mildew (*Pseudoperonospora cubensis*) tolerance. The type of muskmelon that we are breeding in view of exportation to Europe is Cantaloupe Charentais, the only one appreciated on the Continental French Market, where there are great openings at high prices during the winter season.

MATERIALS AND METHODS

Varieties used were 3 Lines tolerant to mildew, 18 lines resistant to WMV<sub>1</sub> (7 of which showed homogenous resistance and 11 disjoined), 3 Cantaloupe Charentais test lines (Doublon, Charentais témoin, Montfavet, Vedrantaïs).

Seeded was planted on September 17 in peat pots 7 x 9 cm. and field planted on September 30 and Pruned over the second leaf on October 14.

The Experimental design was a randomized block with 2 replicates of 10 plants per plot, placed at 0.50m on lines distant of 1.60m. Plant population was 12,500 plants/hectare. This trial was placed in the dry part of Guadeloupe, on a black clay soil (vertisol).

RESULTS

Seed germination was very heterogeneous. During growth it was noticed an attack of mildew that extended and recessed very rapidly. Plants and fruits were also damaged by meal-moths (*Diaphania*). Spraying with Diazinon and Dimethoate in alternance controled this pest.

The following was observed (homogeneous lines were taken in account):

-Charentais témoin	Poor vigour
-Doublon	Average vigour
-Vedrantaïs	Good vigour
-71053*	Good vigour
-71060*	Little vigour
-71064*	Vigourous
-71065*	Poor vigour
-71071*	Good vigour
-71073*	Very good vigour
-71074*	Very poor vigour
-71081**	Good vigour
-71082*	Heterogeneous for type of fruit
-71083*	Heterogeneous for type of fruit

\* Lines with resistance to WMV<sub>1</sub>

\*\* Lines with tolerance to mildew

WMV<sub>1</sub> did not occur in this trial. Notes were taken for mildew at 3 different dates. (Table 1) On the last notation plants had completely dried up in certain plots, whereas a general recession of mildew was noticed in the others. Block II was more severely damaged than block I. This can be explained by the fact that block II being leeward of block I, inoculum was more important in the former. Statistical analysis showed significant differences in yields between blocks I and II.

Yields are rather low (Table 2), due to heavy pest damage. Differences between lines are highly significant (Duncan multiple range test, 1% level).

Earliness (Table 2) was appreciated by the date when the yield reached half of total yield: December 7 for the earliest and December 14 for the latest.

Test line Charentais témoin reached 50% yield on December 9. This difference in earliness was not very consequential.

A board of 12 tasters checked fruit taste at each harvest. Fruit taste was graded as follows (Table 2):

Grade	Observation
1	Very bad taste
2	Bad taste
3	Average taste
4	Good taste
5	Very good taste

CONCLUSION

A breeding program is being carried on to obtain Cantaloup Charentais lines with both resistance to virus and tolerance to mildew. In a second step, it is intended to release lines with tolerance to mildew, resistance to WMV<sub>1</sub>, and gummy stem blight (Mycosphaerella citrullina), so that Cantaloup Charentais Muskmelon can become a profitable crop for the french Caribbean, where those diseases are prevalent.

TABLE 1

Assesment of Mildew (Pseudoperonospora cubensis) for Muskmelons

Lines	Means of two replications(0=none to 5 severe)			
	25 Nov 1971	31 Nov 1971	2 Dec 1971	All dates
Charentais témoin	1.5	2.5	2.5	2.2
Doublon INRA	2.0	4.0	Nec	-
Vedrantais VAC	1.5	2.0-2.5	Nec	-
Lines : 71 053*	3.0	3.5	Nec	-
71 060*	2.5	4.0	Nec	-
71 064*	2.0	3,5-4.0	Nec	-
71 065*	4.0	4.5	Nec	-
71 071*	3.5	4.0-4.5	Nec	-
71 073*	3.0	3.0-3.5	Nec	-
71 074*	3.0	3.5-4.0	3.5-4.0	3.8
Lines : 71 081**	.5	1.0	1.0-1.5	1.0
71 082**	.8	1.5	1.5	1.3
71 083**	0.5-0.8	1.5	1.5-2.0	1.4
Mean	2.0	3.1	2.4	

\* Lines resistant to WMV<sub>1</sub> \*\* Lines tolerant to mildew  
Nec= plots completely necrotic, no assesment possible.

TABLE 2

Performance of Muskmelon Breeding Lines As to Production,Earliness & Taste

Lines	Yield/plant,g(1)	Av.fruit,g	Earliness(2)	Taste(3)
(*) 71 073	646 a	538	=	
Charentais	545 a b	583	Test	3,2
(*) 71 081	505 a b o	534	-	3,2
(*) 71 071	439 b o d	377	+	3,2
(*) 71 082	417 b o d	534	+	2,3
(*) 71 053	387 b o d	515	=	2,2
(*) 71 060	372 b o d	467	=	2,8
(*) 71 064	369 b o d	434	=	2,8
(*) 71 074	299 o d	398	+	2,1
Doublon	278 d	520	-	2,7
(*) 71 065	266 d	297	=	3,3
(+) 71 083	240 d	611	-	2,7
Vedrantais	288 d	569	=	2,2
	399	489		2,7

- (\*) Lines resistant to WMV<sub>1</sub> (+) Lines tolerant to mildew  
 (1) Lines followed by the same letter are not significantly different (Duncan multiple range test 1% level)  
 (2) Earlier than Charentais +, as early as Charentais =, later than Char.  
 (3) See last paragraph of RESULTS for grading