

HAWAII COOPERATIVE EXTENSION SERVICE

Hawaii Institute of Tropical Agriculture and Human Resources
University of Hawaii at Manoa
COMMODITY FACT SHEET WA-3(A)

FRUIT



WATERMELON PRODUCTION

Kenneth Y. Takeda
Assistant Specialist in Horticulture



Figure 1. 'Crimson Sweet' watermelon.

Hawaii's growers harvest approximately 1.1 million pounds of watermelon per year from 125 acres, accounting for 15 percent of the market supply.

Varieties

Crimson Sweet	Round, light green with dark green stripes, good resistance to fusarium wilt, average 20 to 30 lb
Wide Ranger	Round, green with dark green stripes, average 10 to 15 lb, excellent quality
Sweet Carnival	Round, green with dark green stripes, average 10 to 15 lb, excellent quality

Planting and Culture

Watermelons do best in soils that are well drained and high in organic matter. Apply 5 tons/acre chicken manure or 8 to 10 tons/acre steer manure.



Figure 2. Foliage shows damage by leaf miners.

Watermelons are usually transplanted in the field. Transplants are grown in pots or cell-type containers in a lightweight artificial mix. Seedlings with 1 to 2 true leaves should be transplanted in the field when 10 to 14 days old. Four ounces of seed is required to raise enough transplants for one acre. Space the rows 10 to 15 feet apart, leaving 5 to 8 feet between hills. Allow 2 to 3 plants per hill.

Lime and Fertilizer Requirements

Soil tests should be used to determine lime and fertilizer requirements. Optimum pH is 6.0 to 6.8.

Generally, 150 to 200 lb/acre nitrogen, 450 to 600 lb/acre phosphate, and 150 to 200 lb/acre potash are sufficient for a watermelon crop. Apply half the required amount at planting and the remainder 4 weeks later.

On soils low in magnesium, apply 150 to 200 lb/acre magnesium sulfate (Epsom salt).

Harvesting

Watermelon must be harvested at the right stage of maturity to be of optimum quality. There are several ways to determine harvest time. In Hawaii, growers use the staking method. A wooden stake is placed alongside each melon when it reaches 2 to 3 inches in diameter. The melon is ready for harvest 28 to 30 days later. The stakes can be color coded to correspond with different maturity dates. Another test for maturity is the color change of that part of the melon which rests on the ground. Ripeness is indicated when the "ground spot" changes from white to yellow. Another harvest

indicator is the browning of the tendril at the point of attachment to the fruit.

Watermelons should be cut from the vine rather than broken or pulled off. Handle melons carefully at all times to prevent bruising and cracking.

NOTE: The use of trade names is for the convenience of readers only and does not constitute an endorsement of these products by the University of Hawaii, the College of Tropical Agriculture and Human Resources, the Hawaii Cooperative Extension Service, or any of their employees.

Insect Control

Insect	Treatment	Harvest Restriction ¹	Comments
Aphid	Dimethoate (Cygon, DeFend) 2.67 lb/gal EC at ¾ to 1½ pt/acre	3	
	Diazinon 50% WP at 1 lb/acre or AG 500 at 1 pt/acre	7	
	Endosulfan (Thiodan) 3 EC at 1 1/3 to 2 2/3 pt/acre or 50% WP at 1 to 2 lb/acre	0	
	Oxydemeton-methyl (Metasystox-R) 2 lb/gal EC at 1½ to 2 pt/acre	7	Do not apply more than twice per crop.
Whitefly	Methomyl (Lannate, Nudrin) 90% S at 1 lb/acre or 24% E at 2 qt/acre	3	
	Dimethoate (Cygon, DeFend) 2.67 lb/gal EC at ¾ to 1½ pt/acre	3	
Leaf miner	Parasites are very effective on leaf miners.	0	Minimal spraying is recommended.
	Oxamyl (Vydate L) 2 lb/gal EC at 2 to 4 pt/acre	2	
Mite	Kelthane 35% WP at 1 to 1 2/3 lb/acre	2	
	Oxydemeton-methyl (Metasystox-R) 2 lb EC at 1½ to 2 pt/acre	7	
	Tetradifon (Tedion) 50% WP at 1 lb/acre	0	
	Chlorobenzilate (Acaraben) 45% EC at 1 qt/acre	0	
Melon fly	Malathion ² (Malawet) 25% WP at 2 to 4 lb/acre	1	Mix with 1 lb partially hydrolyzed yeast protein or enzymatic yeast hydrolysate in 40 to 100 gal water.

¹After treatment, postpone harvest for number of days given.

²Requires a Special Local Needs (SLN) label. For further information contact your County Extension Agent or the Hawaii Department of Agriculture.

Disease Control

Disease	Treatment	Harvest Restriction ¹	Comments
Alternaria leaf spot	Maneb 80% WP or mancozeb 80%	5	Spray at weekly intervals or as needed, beginning at 2-leaf stage.
Anthracnose	WP or zineb 75% WP at 2 lb/acre		
Downy mildew	Chlorothalonil (Bravo) 6F at 1½ to	0	
Gummy stem blight	2 pt/acre for anthracnose and		
Scab	downy mildew; 2 to 3 pt/acre for		
Phytophthora blight	gummy stem blight		
	Captafol (Difolatan) 4F at 4 qt/acre	0	
	Benomyl (Benlate) 50% WP at ¼ to	0	Not effective where pathogen has developed resistance.
	½ lb/acre		
Powdery mildew	Karathane 25% WP at ¾ lb/acre	7	
	Benomyl (Benlate) 50% WP at ¼ to	0	
	½ lb/acre		
	Chlorothalonil (Bravo) 75% WP at 2	0	
	lb/acre		
	Folpet 75% WP at 3 lb/acre	0	
Seed decay	Treat seed with captan 75% WP or	0	
Damping off	thiram 75% WP at label directions.		
Virus diseases (Mosaic)	Control aphids and weeds in and	0	
	around the fields.		
Fusarium wilt	Plant resistant cultivars.	0	Crimson Sweet and Wide Ranger have good tolerance to wilt.
Nematodes	D-D at 18 to 25 gal/acre or Vidden-D	0	Apply nematicide 14 days before transplanting. Space chisels 12 inches apart and inject chemical 10 inches deep. Granular materials are applied on 42-inch rows in a 12- to 15-inch band. Reduce rates proportionately if row treatment is used. Follow manufacturer's directions.
	at 15 to 25 gal/acre or Telone II at 9 to 15 gal/acre or Vapam at 40 to 100 gal/acre or Vorlex at 10 to 25 gal/acre or EDB at 3 to 4 gal/acre		

¹After treatment, postpone harvest for number of days given.

Weed Control

Chemical	Rate of Commercial Formulation	Comments
Alanap-3 (naptalam or NPA)	6 to 8 qt/acre or 28 to 37 lb/acre of 10.8% granules	Apply after seeding but before weeds and crop emerge. At vining stage before weeds emerge or after cultivation, broadcast granular form only. Spraying after crop emergence will cause stunting and leaf deformation. Apply granules when plant parts are dry.
Dacthal W-75 (DCPA)	8 to 14 lb/acre	Apply as a directed spray on soil around crops 4 to 6 weeks after seeding but before weeds emerge or after cultivation. Caution: Do not apply before seeding or on very young seedlings.

