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CLIMATIC ZONES OF AVOCADO MATURITY IN CALIFORNIA

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The current (1974) list and description of avocado varieties for commercial planting in California, prepared by the Variety Committee of the California Avocado Society in conjunction with the University of California Cooperative Extension Service, incorporates some changes and additions not found in previous lists.

The principal change has been to divide the avocado producing areas of the state into eight climatic zones and subzones rather than make a division based on county boundaries. Each of these zones (Fig. 1) has certain climatic characteristics which influence the harvest season for any variety. The eight zones are adapted from the plant climate zones of California developed by M. H. Kimball, Extension Bioclimatologist Emeritus, University of California.

Zones 1A, 1B, 2A and 2B are coastal zones with a strong maritime or ocean influence. They normally extend from three to five miles inland from the shoreline. Frosts are rare and summer temperatures are cool to mild. Zones 1A and 1B are classified as southern California coastal. Zone 1A, the most southerly, extends from the Mexican border northward along the coast of San Diego, Orange and Los Angeles counties to Point Dume. Zone 1B extends from Point Dume along the coast of Ventura County to Point Conception in Santa Barbara County. Somewhat cooler summer temperatures in Zone 1B cause slightly later maturity but allow later harvest without fruit deterioration than in Zone 1A.

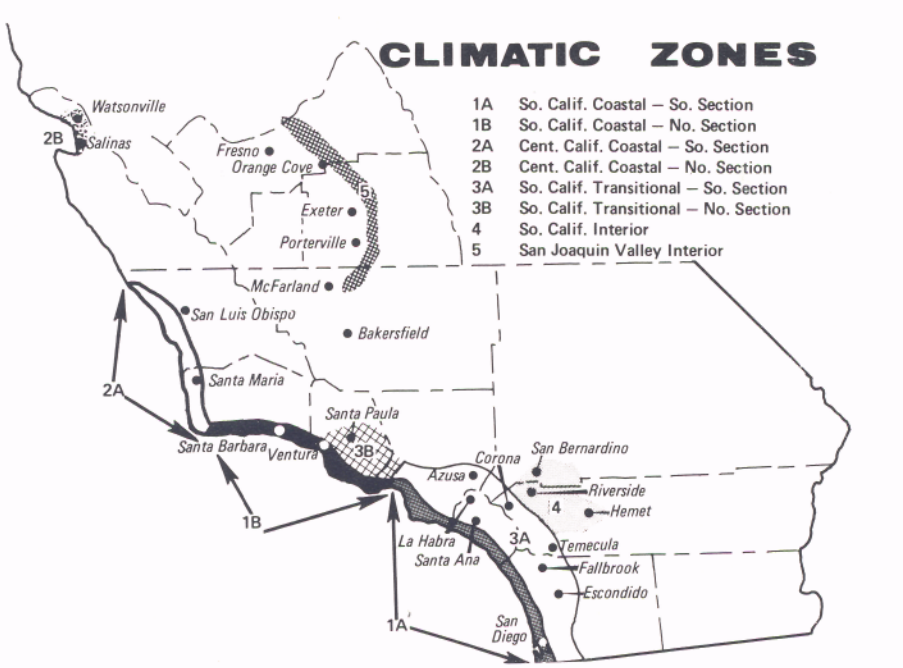


Figure 1. Climatic zones of avocado maturity.

Zones 2A and 2B are classified as central California coastal. Zone 2A, the southern section, extends from Point Conception in Santa Barbara County to Cambria in San Luis Obispo County. Cooler summer temperatures in this zone delay even further the maturity dates of any variety. Zone 2B, the northern section, is a small zone bordering Monterey Bay and includes part of Monterey and Santa Cruz counties. This zone has the coolest temperatures during the fruit development period and maturity dates are about three months later than any other zone.

Two transitional zones, 3A and 3B, are both located in the southern California area. These zones are intermediate between coastal and interior areas and are influenced by the climates of both. The frost hazard is moderate and orchard location in relation to variety planted must be considered carefully. Summer temperatures range from mild to warm. Zone 3A, the transitional southern section, extends from the Mexican border through San Diego. Orange and Los Angeles counties to the Malibu mountains and includes parts of extreme western Riverside and San Bernardino counties. Zone 3B, the transitional northern section, includes the intermediate to inland portions of Ventura County. Slightly warmer temperatures in Zone 3A cause about a month's earlier maturity of any variety than in Zone 3B.

Interior zones are located in southern California and San Joaquín Valley. These zones are characterized by more harsh climatic conditions with greater frost hazard and more extreme summer heat. Zone 4, southern California interior, includes portions of western Riverside and San Bernardino counties. Zone 5, San Joaquín Valley interior, extends in a band along the "thermal belt" on the eastern edge of San Joaquin Valley through parts of Kern, Tulare and Fresno counties. The climate of these two zones limit the selection of varieties to those able to withstand more severe winter cold and summer heat

conditions. The earliest maturity of fall-maturing varieties is generally found in Zone 5.

It must be recognized that no arbitrary boundary for any zone can be established and that those shown are general. Within any zone there may be areas with the climate of another zone due to peculiarities of topography, elevation, exposure, etc.

Maturity dates of the recommended varieties for each zone are shown in the descriptive list. It is hoped this new classification will be helpful and more meaningful in describing avocado production areas of California.

AVOCADO VARIETIES FOR COMMERCIAL PLANTING IN CALIFORNIA 1974

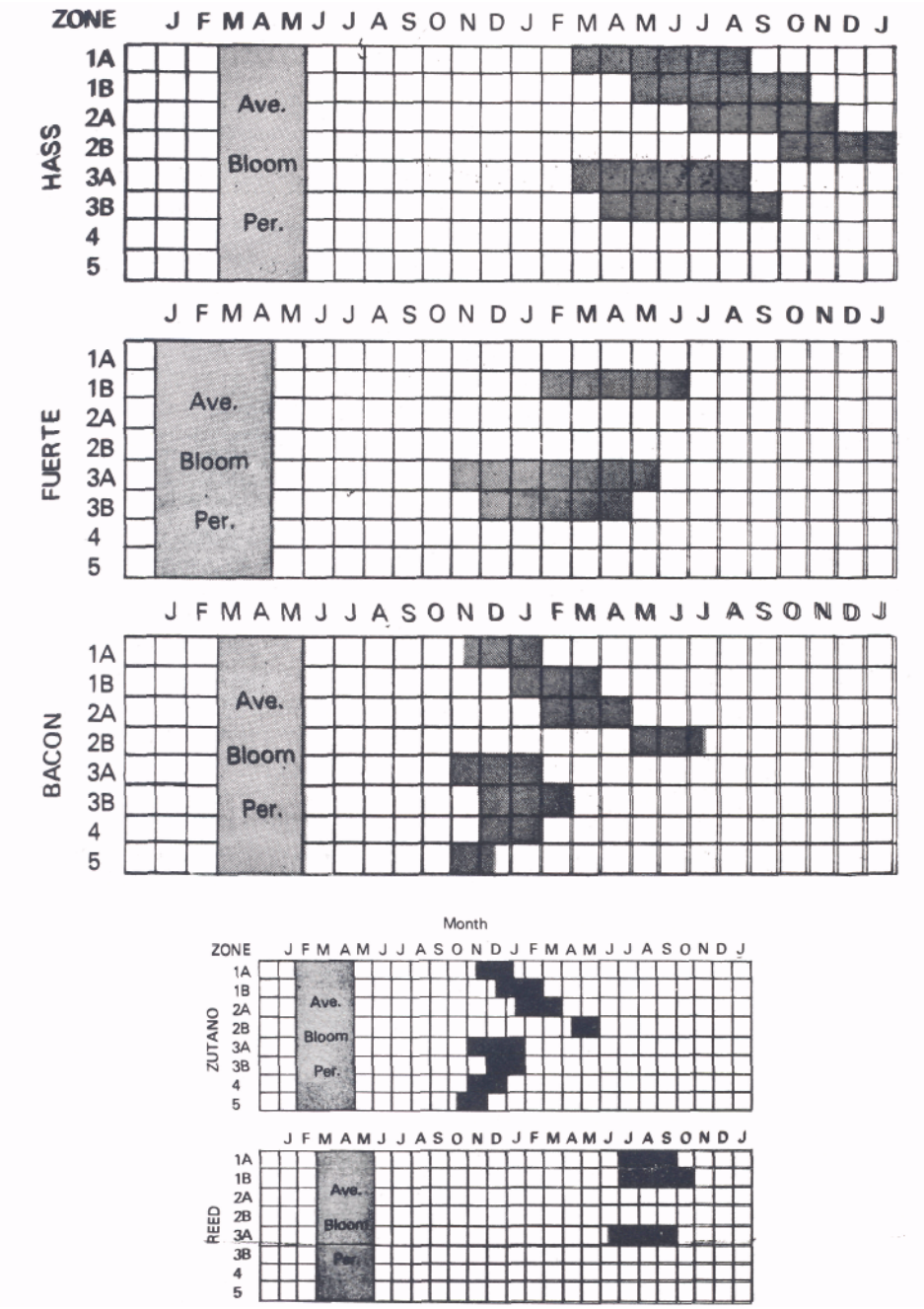
The Variety Committee, California Avocado Society in conjunction with the Cooperative Extension Service, University of California.

VARIETY	PARENTAGE (Origin)	SEASON	AVERAGE SIZE (Ounces)	SHAPE	SKIN				RELATIVE SEED SIZE	FLAVOR
					Color	Texture	Thickness	Peeling Ease		
HASS	Guat. Sdlg. (La Habra, Cal.)	SEE ATTACHED CHARTS	5-12	Ovate	Black	Pebbly	Medium Thick	Excellent	Small to Medium	Nutty Rich
FUERTE	Guat. X Mex. (Atlixco, Mex.)		6-14	Pear	Green	Leathery	Medium	Good to Excellent	Medium	Mild Rich
BACON	Mex. Hybrid (Buena Park, Cal.)		6-12	Ovate	Dark Green	Smooth	Thin	Fair to Good	Medium to Large	Mild
ZUTANO	Mex. Sdlg. (Fallbrook, Cal.)		6-10	Pear	Yellow Green	Smooth	Thin	Fair to Good	Large	Mild
REED	Guat. Sdlg. (Carlsbad, Cal.)		8-18	Round	Green	Slightly Rough	Medium Thick	Good	Medium	Nutty Rich

EATING QUALITY	SHIPPING QUALITY	TRADE ACCEP-TANCE	TREE GROWTH	FLOWER TYPE	TIME OF BLOOM	LIMITATIONS	COMMENTS
Excellent	Excellent	Excellent	Medium Spreading	A	Mid	Sensitive to frost, heat. More subject to mite, insect and drought damage.	Individual trees alternate but orchard production consistent. Long fruit life on tree.
Excellent	Good	Excellent	Large Spreading	B	Early	Sensitive to microclimate conditions for good fruit set. Alternate and inconsistent producer.	Production usually increased by pollinator. Fruit holds well on tree.
Good	Good	Good	Tall Upright	B	Early-Mid	Sets crop in top of tree. Moderate producer.	Tree very frost tolerant.
Fair to Good	Fair to Good	Fair	Tall Upright	B	Early	Susceptible to blossom-end breakdown, corkiness and rust in some zones. Short fruit life on tree.	Heavy consistent producer. Tree frost tolerant.
Good	Good	Fair to Good	Slender Upright	A	Late	Frost sensitive. Large size limits trade acceptance.	Fruit holds well on tree.

AVERAGE HARVEST SEASON

Month



Note: Absence of a harvest season indication in chart denotes information not available or variety not suitable for zone.

RECOMMENDED FOR COMMERCIAL PLANTING

VARIETY	ZONE							
	1A	1B	2A	2B	3A	3B	4	5
HASS	YES	YES	YES	YES	YES	YES	Warm Areas	NO
FUERTE	NO	NO	NO	NO	YES	NO	NO	NO
BACON	YES	YES	YES	YES	YES	YES	YES	YES
ZUTANO	NO	NO	NO	YES	NO	NO	YES	YES
REED	YES	YES	?	?	YES	?	?	NO

The production and quality of any variety depends upon many factors. Consult your University of California Farm Advisor for the variety or varieties best suited for your particular location.

FROST TOLLERANCE LIMITS OF TREES:

Hass	30°F
Fuerte	27°F
Bacon	24°F
Zutano	26°F
Reed	30°F

Cold damage varies and depends upon the duration of cold, season in which it occurs, stage of tree growth, tree health, etc. Fruit and stems may be damaged if temperatures remain below 28°F for significant periods of time.