



HAWAII COOPERATIVE EXTENSION SERVICE

College of Tropical Agriculture and Human Resources

University of Hawaii

GENERAL HOME GARDEN SERIES No. 18

THE pH PREFERENCE OF PLANTS

by Wade W. McCall*

Favorable conditions for plant growth requires proper pH, suitable soil texture, proper aeration and drainage, and adequate supply of plant nutrients, protection from pests, and proper climatic conditions. Maximum growth and yields are obtained when all of these factors of plant growth are optimum.

Each species of plant has a certain pH range for its growth and yield. Some species make their growth in a relatively narrow pH range, while others will tolerate a much wider range. There are a few plants

which will grow over a very wide range of pH, these are usually weeds.

This listing of plants, with their suggested pH range, is based upon the best information available at the present time. It is designed to place this useful information in the hands of the grower in a form easily used in determining suggested plant requirements. This is not an exhaustive listing but should be useful for many growers. The range of pH tolerance, where known, is given.

Table 1. The pH Preference of Plants

<u>Plant</u>	<u>Suggested pH</u>	<u>pH tolerance</u>	<u>Plant</u>	<u>Suggested pH</u>	<u>pH tolerance</u>
<u>Field Crops:</u>					
Alfalfa	6.5-7.5	6.0-8.0	Rice	5.0-6.5	4.5-8.0
Castor Bean	6.0-7.5		Sorghum	5.5-7.0	5.0-8.5
Field Corn	5.5-7.0	5.0-7.5	Sugar Cane	6.0-7.0	4.5-8.0
Kaimi Clover	5.5-6.5	4.5-7.0	Taro	5.5-7.5	
Kikuyu Grass	5.5-6.5		Trefoil	5.5-6.0	5.0-7.5
Pangola Grass	5.5-6.5		White Clover	6.0-7.0	5.5-8.0
<u>Flowering Plants:</u>					
Anthurium	5.5-6.5	5.0-7.5	Hibiscus	6.0-7.0	5.0-8.0
Azalea	4.5-5.0		Ixora	6.0-7.5	5.0-8.0
Begonia	5.5-7.0		Jacaranda	6.0-7.5	
Bougainville	5.5-7.0	5.0-8.0	Lantana	5.5-7.0	
Camellia	4.5-5.5		Magnolia	5.5-6.5	5.0-7.0
Carnation	6.0-7.5	5.0-8.0	Marigold	5.5-6.5	4.5-7.5
Chrysanthemum	6.0-7.5	5.0-8.0	Oleander	6.0-7.5	
Flame Grass	5.5-6.5	5.0-7.5	Orchid	4.0-5.0	
Gardenia	5.0-6.0	4.5-7.5	Poinciana	6.0-7.5	
Geranium	6.0-7.0	5.5-8.0	Poinsetta	6.0-7.5	
Ginger	6.0-7.0	5.0-8.0	Pomegranite	6.0-7.5	
Honeysuckle	6.5-7.5	5.5-8.0	Roses	5.5-7.0	
<u>Nuts:</u>					
Coconut	6.0-8.0		Macadamia	5.0-6.0	
Coffee	5.0-6.0				

Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Noel P. Kefford, Director of the Institute and Dean of the College, Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa, Honolulu, HI 96822. An Equal Opportunity Employer providing programs and services to the citizens of Hawaii without regard to race, color, national origin, or sex.

<u>Plant</u>	<u>Suggested pH</u>	<u>pH tolerance</u>	<u>Plant</u>	<u>Suggested pH</u>	<u>pH tolerance</u>
<u>Fruits:</u>					
Avocado	5.5-7.0	5.0-8.0	Lime	6.0-7.5	5.5-7.5
Banana	6.0-7.5	5.5-8.0	Lychee	5.5-6.5	4.5-7.5
Breadfruit	5.0-6.0	4.5-8.0	Mango	5.5-6.5	5.0-7.5
Date	6.5-8.0		Orange	6.0-7.0	5.5-8.0
Fig	6.0-7.0		Papaya	6.0-7.5	
Grapefruit	6.0-7.5		Passion Fruit	5.0-6.0	4.5-8.0
Guava	5.5-7.0	5.0-7.5	Pineapple	5.5-6.5	5.0-7.0
Kumquat	6.0-7.5		Pummelo	5.5-6.5	5.5-7.0
Lemon	6.0-7.0	5.5-7.5	Tangerine	6.0-7.0	5.5-8.0
<u>Ornamentals:</u>					
Alamanda	5.5-6.5		Mock Orange	6.0-7.0	6.0-8.0
Banyan	5.0-7.5	4.5-8.0	Mondo Grass	6.0-7.0	5.0-8.0
Boxwood	6.0-7.0		Monkeypod	6.0-7.0	5.5-7.5
Calinga	5.5-6.5	5.0-7.5	Moss rose	6.0-7.0	5.0-8.0
Caladium	6.0-7.5		Palms	6.0-7.5	4.5-8.0
Coleus	6.0-7.5	5.0-8.0	Pandanus	6.0-7.5	4.5-8.0
Croton	5.5-6.5	5.0-7.5	Portulaca	5.5-6.5	5.0-7.5
Eucalyptus	6.0-7.0	5.0-8.0	Sanflower	6.0-7.0	5.5-8.0
Ironwood	6.0-7.0	5.0-8.0	Stephanotus	6.0-7.0	5.5-7.5
Jade Vine	6.0-7.5				
<u>Turf:</u>					
Bent	6.0-7.0		St. Augustine	5.5-6.5	5.0-7.5
Bermuda	6.0-7.0	5.0-8.0	Zoysia	6.0-7.0	5.5-8.0
Centipede	6.0-7.0	5.5-7.5			
<u>Vegetables:</u>					
Asparagus	5.5-7.0	5.0-8.0	Lima Beans	5.5-6.7	5.0-7.0
Beets	6.0-7.0	5.5-7.5	Mint	7.0-8.0	5.0-8.0
Bell Peppers	5.5-6.5	5.0-7.0	Muskmelon	5.5-6.5	5.0-7.0
Bitter Melon	5.5-6.5	5.0-7.0	Mustard	6.0-7.0	5.5-7.5
Broccoli	6.0-7.5	5.5-7.5	Okra	6.0-7.5	5.5-8.0
Cabbage	6.0-7.0	5.5-7.0	Onions	6.0-6.5	5.5-7.0
Cantalopes	5.5-6.5	5.0-7.0	Parsley	5.0-6.0	4.5-7.5
Carrots	5.5-6.5	5.0-7.0	Peanut	5.5-6.5	5.0-7.5
Cauliflower	6.0-7.0	5.5-7.5	Peas	5.5-6.5	5.0-7.0
Celery	5.8-7.0	5.0-7.5	Pole Beans	5.5-6.5	5.0-7.0
Chili Pepper	5.5-6.5	5.0-7.0	Potato	5.0-5.5	4.5-7.5
Cowpeas	5.5-7.0	5.0-8.0	Radish	5.5-6.5	5.0-7.0
Cucumbers	5.5-6.5	5.0-7.0	Snap Beans	5.5-6.5	5.0-7.5
Daikon	5.5-6.5	5.0-7.0	Squash	5.5-6.5	5.0-7.0
Dasheen	5.5-6.5	5.0-7.0	Strawberry	5.0-6.5	5.0-8.0
Eggplant	5.5-6.5	5.0-7.0	Sweet Corn	5.5-7.0	5.0-8.0
Ginger Root	6.0-7.5		Sweet Potato	5.0-6.0	5.0-7.0
Goard	6.0-7.0	5.0-7.5	Tomato	5.5-6.8	5.0-7.5
Gobo	5.5-7.0	4.5-8.0	Turnip	5.5-6.5	5.0-7.0
Kai Choy	5.0-6.0	4.5-6.5	Won Bok	6.0-7.0	5.0-7.5
Leek	6.0-7.0	5.5-8.0	Watercress	6.0-7.0	
Lettuce	6.0-7.0	5.5-7.5	Watermelon	5.0-6.5	5.0-7.0
<u>Weeds:</u>					
Crab Grass	6.0-7.0	5.0-7.5	Purslane	5.0-6.0	4.5-7.0
Dandelion	5.5-7.0	4.5-8.0	Spiny Amaranth	4.0-8.0	
Nut Grass	4.0-8.0		Spurge	5.0-7.5	4.5-8.0

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, and their employees.