

SOIL REACTION PREFERENCE OF SOME PLANTS

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Growth and development of plants are influenced by many factors. These factors are climate, diseases, insects, soil structure, soil texture, fertility, and the acidity or alkalinity (soil reaction) of the soil.

If any of the above mentioned factors are unfavorable, unsatisfactory results will be obtained. Before any attempt is made to adjust the soil reaction (pH), all other factors influencing plant growth should be made favorable.

The different pH values have the following meaning when applied to soils.

Below pH	4.5	Extremely acid
	4.6 - 5.0	Very strongly acid
	5.1 - 5.5	Strongly acid
	5.6 - 6.0	Medium acid
	6.1 - 6.5	Slightly acid
	6.6 - 7.3	Neutral
	7.4 - 8.0	Mildly alkaline
	8.1 - 9.0	Strongly alkaline
Over	9.1	Very strongly alkaline

(Strictly speaking, exact neutrality is pH 7.0. However, for practical purposes, soils may be considered neutral over the range pH 6.6 - 7.3.)

The table below is presented to show the soil reaction preference for some of the more common plants.

It is not intended to convey the idea that the pH range shown in this table represents the outside limits for growth of the respective plants. The figures given probably represent the optimum range. The mid point of the range will likely be the best for the particular plant. The data are compiled from many sources and represent the best information available.

To adjust the soil reaction, limestone or wood ashes may be used on acid soils to make them neutral (increase the pH.) Sulfur, leaf mold, iron sulfate (copperas), and aluminum sulfate may be used to acidify the soil (reduce the pH). Over large areas, these soil reaction adjustments are more or less temporary.

FLOWERS

	pH Preference Range		
Alvssum	6.0 - 8.0	Iris (Water Flags)	5.0 - 6.0
Aster (Flowering)	5.5 - 6.5	Iris (Common bearded)	6.0 - 8.0
Aster (many species)	6.0 - 8.0	Iris (swamp)	5.0 - 6.0

Begonia	6.0 - 7.0	Lark Spur	6.0 - 8.0
Calendula	6.0 - 8.0	Lily	5.0 - 6.5
Candytuft	6.0 - 7.0	Lily (hemerocallis)	6.0 - 8.0
Cannas	6.0 - 8.0	Narcissus	5.0 - 7.0
Chrysanthemum	6.0 - 8.0	Pansy	6.0 - 7.5
Clematis	6.0 - 7.5	Petunia	6.0 - 8.0
Crispa	5.0 - 6.5	Phlox Annual	6.0 - 8.0
Dahlia	6.0 - 8.0	Rose	5.5 - 7.0
Gaillardia	6.0 - 8.0	Stock	6.0 - 7.0
Gladiolus	6.0 - 8.0	Snapdragon	6.0 - 7.0
Geranium	6.0 - 8.0	Zinnia	6.0 - 8.0
Heliotrope	6.0 - 8.0		

FIELD AND FORAGE CROPS

Alfalfa	6.5 - 8.0	Millet	5.5 - 7.5
Alsike Clover	6.0 - 7.0	Oats	6.0 - 7.0
Barley	6.0 - 7.0	Red Top	6.0 - 7.0
Bluegrass	6.0 - 7.0	Rye	6.0 - 7.0
Corn	6.0 - 7.0	Sorghum (Sweet)	
Cotton	6.0 - 8.0	(For syrup only)	5.5 - 6.5
Cowpeas - many	6.0 - 7.0	(For forage)	5.5 - 7.5
Flax	6.0 - 7.0	Soy Bean	6.0 - 7.0
Grass Bermuda	6.0 - 7.5	Sudan Grass	6.0 - 7.5
Grass Carpet	5.5 - 7.0	Sweet Clover (white)	6.5 - 8.0
Grass Centipede	6.0 - 8.0	Velvet Bean	6.0 - 7.0
Grass Dallis	6.0 - 7.0	Vetch	6.0 - 7.0
Grass San Augustine	5.5 - 7.5	Wheat	6.0 - 7.0
Lespedeza	5.0 - 6.5	White Clover	6.0 - 7.0
Melilotus Indica	6.0 - 7.5		

VEGETABLES

Asparagus	6.0 - 7.0	Onion	6.0 - 8.0
Beans	5.0 - 6.0	Parsley	6.0 - 8.0
Beans, Lima	5.8 - 7.0	Pea (common garden)	6.0 - 8.0
Beet (common)	6.0 - 7.0	Pea (sweet)	6.0 - 8.0
Beet (Sugar)	6.0 - 8.0	Pepper	5.5 - 6.5
Blackberry		Irish Potato	4.8 - 5.4*
(Most var.)	6.0 - 8.0	*For control of scab	
Broccoli	6.0 - 8.0	Irish Potato	5.5 - 7.5
Brussel sprouts	6.0 - 7.5	*For control of plant	
Cabbage	6.0 - 8.0	growth and yield	
Cantaloupe	6.0 - 8.0	Sweet Potato	5.0 - 7.0
Carrot	6.0 - 6.5	Pumpkin	5.5 - 7.0
Cauliflower	5.5 - 7.5	Radish	6.0 - 8.0
Celery	6.0 - 6.5	Spinach	6.0 - 8.0
Cucumber	6.0 - 8.0	Squash	5.6 - 7.5
Dewberry	5.0 - 6.5	Strawberries	5.0 - 6.0
Eggplant	6.0 - 7.0	Tomato	6.0 - 7.0
Lettuce	6.0 - 7.0	Turnip	5.5 - 7.0
Muskmelon	6.0 - 7.0	Watermelon	6.0 - 7.0
Okra	6.0 - 8.0		

TREES-SHRUBS-FRUITS

Abelia	6.0 - 8.0	Lemon	6.0 - 8.0
Althea	6.0 - 8.0	Locust	6.0 - 8.0
Apple	6.0 - 8.0	Magnolia	5.0 - 7.0
Apricots	6.0 - 8.0	Oak Chestnut	6.0 - 7.0
Azalea Formosa	5.0 - 6.0	Oak Pin	6.0 - 7.0
Butterflybush	6.0 - 8.0	Oak Red	6.0 - 7.0

Camellia	4.0 - 6.0	Oak White	6.0 - 8.0
Cape Jasmine	5.0 - 7.0	Orange	6.0 - 8.0
Cherry	6.0 - 8.0	Peach	6.0 - 7.0
Elm (American)	6.0 - 8.0	Pear	5.8 - 7.5
Elm (Chinese)	6.0 - 8.0	Pine (Southern)	5.0 - 6.0
Grape	6.0 - 8.0	Plum	6.0 - 7.5
Grapefruit	6.0 - 8.0	Privet	6.0 - 7.5
Amer. Holly	5.0 - 6.0	Tung	5.0 - 6.0
Holly Chinese	6.0 - 7.5	Yaupon	5.5 - 7.5

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