TABLE I

CHANGING SOIL pH WiTH SULFUR OR SULFATE OF ALUMINUM

Present pH of soil	POUNDS OF SULFUR* PER 100 SQ. FT. FOR pH OF															
	4.0		4.5, blueberry range		5.0		5.5		6.0		6.5		7.0		7.5	
	Sand	Loam	Sand	Loam	Sand	Loam	Sand	Loam	Sand	Loam	Sand	Loam	Sand	Loam	Sand	Loam
4.0	0.0	0.0														
4.5	0.4	1.2	0.0	0.0			In the blanks above the figures, lime applications would be required									
5.0	0.8	2.4	0.4	1.2	0.0	0.0										
5.5	1.2	3.5	0.8	2.4	0.4	1.2	0.0	0.0								
6.0	1.5	4.6	1.2	3.5	0.8	2.4	0.4	1.2	0.0	0.0						
6.5	1.9	5.8	1.5	4.6	1.2	3.5	0.8	2.4	0.4	1.2	0.0	0.0				
7.0	2.3	6.9	1.9	5.8	1.5	4.6	1.2	3.5	0.8	2.4	0.4	1.2	0.0	0.0		
7.5	2.7	8.0	2.3	6.9	1.9	5.8	1.5	4.6	1.2	3.5	0.8	2.4	0.4	1.2	0.0	0.0

*Sulfate of aluminum = Pounds of sulfur x 6.

Example: If the present pH of the soil is 6.5 and blueberry culture at pH 4.5 is contemplated, then from the table, 1½ pounds of sulfur per 100 square feet would be required for a light soil and 4-6 pounds for a medium loam. If sulfate of aluminum were used instead of sulfur, 6 times these amounts would be necessary, or 9.0 and 27½ pounds respectively. The amount required can also be calculated easily for any pH. The present pH of the soil must first be known fairly accurately; also if the soil contains appreciable lime reserve which may be true if the pH is much in excess of pH 7.0.

Sandy soil.—For every 0.1 pH over 4.5 apply 0.075 pound sulfur per 100 sq. ft.

Loam soil.—For every 0.1 pH over 4.5 apply 0.25 pound sulfur per 100 sq. ft.

Example: A sandy soil with a pH of 5.8.

5.8 - 4.5 = 1.3 or 13 tenths.

13 x 0.075 = 0.975 practically 1 pound of sulfur per 100 sq. ft.

Example: A loam soil with a pH of 5.2

5.2 - 4.5 = 0.7 or 7 tenths.

7 x 0.25 = 1.75 or 1¾ pounds of sulfur per 100 sq. ft.

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Preparation of Acid Loving Soils

Before acid loving trees and shrubs are planted the pH level of the soil should be determined by a soil test and then corrected to the desired level. Naturally acid soil material, preferably rich in organic matter, should be used for backfill. If necessary, sulfur may be mixed thoroughly with this soil material to increase acidity.

Changing the soil's reaction from alkaline to acid after the plant has become established is not an easy task. Sulfur may be applied around the plant by using a feeding bar. Make holes in the soil around the plant 6 to 12 inches deep, and place the sulfur into these holes. Backfill the holes with organic matter. If sulfur is applied on top of the soil, the surface may become quite acid with little effect evident in the lower part of the root zone.

In order to maintain a low pH level of the soil, a good mulch should be used. Mulches of undecomposed or partially decomposed plant material such as leaf mold (oak), peat moss or pine needles are good. Such organic materials are acid by nature. However, one should be careful not to create a nitrogen deficiency.

Soil Reaction Scale

Gardening books and magazines often refer to a plant as requiring a soil that is slightly acid; moderately acid, very acid, slightly alkaline, very alkaline, etc. No explanation is given as to what is meant by these terms. Table II should be helpful in determining more closely the soil reaction.

TABLE II

Extremely acid	under 4.5
Very strongly acid	4.5 - 5.0
Strongly acid	5.1 - 5.5
Medium acid	5.6 - 6.0
Slightly acid	6.1 - 6.5
Very slightly acid	6.6 - 7.0
Neutral	7.0
Very slightly alkaline	7.0 - 7.5
Slightly alkaline	7.6 - 8.0
Medium alkaline	8.1 - 8.5
Strongly alkaline	8.6 - 9.0
Extremely alkaline	over 9.0

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