

Table XIII. Pounds of Calcium Carbonate Per Acre.

Box	Before Experiment. Am't. Added.	After Experiment.			
		Equivalent to Sulfur Oxidized	Apparent Excess or Deficiency according to		
			Sulfur Oxidized	Hopkins Method	
No. 15	4000	250	+	3750	— 143
" 16	4000	1062	+	2938	— 235
" 17	4000	1875	+	2125	— 414
" 18	4000	4187	—	187	— 717
" 19	4000	5691	—	1691	— 1213
" 20	4000	9875	—	5875	— 4211
" 21	4000	16253	—	12253	— 10671
" 22a	4000	-----		-----	— 143
" 22b	4000	-----		-----	— 143

The differences in some cases between the acidity by the Hopkins method and that calculated from the amount of sulfur oxidized may be due to the fact that the latter represents more free acid than is present since this would gradually combine with other bases, if there was not sufficient calcium carbonate to neutralize it. The amounts obtained by the Hopkins method in some instances are also probably too large, because the soil, before adding calcium carbonate by this method, only required 164 pounds per acre of this material to overcome its acidity, and after adding 4000 pounds, it still required 143 pounds.

According to the amount of sulfur oxidized, and taking into account the amount of calcium carbonate added, Nos. 15, 16 and 17 should, at the end still be alkaline, No. 18 about neutral and the remainder acid. The Hopkins method also shows a large increase in acidity of No. 19 compared with No. 18 and this also represents the division between those boxes in which the plants made a good growth and those in which the growth was very poor.

It also appears from a comparison of Nos. 15 and 16 above with Nos. 5 and 6 of the preceding experiment that when sulfur is added to the Fayette County soil, it is more rapidly oxidized than in the Graves County soil used in Experiment I. It might be that the larger amount of calcium carbonate