

TABLE 2—Analyses of Michigan orchard soils, with samples taken from: surface soil beneath trees, surface soil between trees and subsoil between trees

	Surface soil beneath trees	Surface soil between trees	Subsoil between trees
	p.p.m.	p.p.m.	p.p.m.
Phosphorus .....	45.7 ± .6	39.3 ± .6	20.4 ± .4
Potassium.....	129.3 ± 7.5	133.5 ± 6.8	89.6 ± 4.1
Calcium.....	101.6 ± 5.6	98.4 ± 7.3	98.4 ± 14.4
Magnesium.....	7.8 ± .05	7.8 ± .10	8.1 ± .25
Manganese.....	12.6 ± .23	12.7 ± .24	5.3 ± .09
Iron.....	45.0 ± .86	35.9 ± .88	33.6 ± .79
pH.....	4.6	5.0	5.0

#### COMPARISON OF APPLE, CHERRY, PEACH AND PEAR ORCHARDS

Analysis of soil from the different kinds of fruit in relation to 1) surface soil beneath trees, 2) surface soil between trees and 3) subsoil between trees is shown in Fig. 1.

Apple orchard soils were lowest in phosphorus, potassium, magnesium, manganese, iron and total nutrients and in respect to pH. The soil in cherry and pear orchards was also low in manganese, while that in the peach and pear orchards was lowest in calcium.

The soil from cherry orchards was highest in phosphorus, calcium and magnesium and in pH. The apple orchard soils were high in calcium, while in peach orchard soils magnesium was high. Soil from peach and pear orchards was highest in potassium and total nutrients. Peach orchard soils were also highest in manganese.

#### COMPARISON OF GEOGRAPHIC AREAS WITHIN THE STATE

The different geographic areas showed considerable variation in soil analysis, as shown in Figures 2-7 inc.<sup>5</sup>

PHOSPHORUS—Figure 2 shows the geographic variation in soil phosphorus. Only the Leelanau and Antrim County areas were found to contain the same amount of phosphorus in all sampling positions. Most of the other areas had less phosphorus in the soil between the trees than in the soil beneath the trees. Antrim, Genesee, Oceana and Mason County areas were low in phosphorus. The soil in the Allegan and Cheboygan County areas contained moderate amounts of phosphorus, while other areas were relatively high in soil phosphorus.

<sup>5</sup>Although reference will be made to counties, the actual area in each county is shown by the circles.

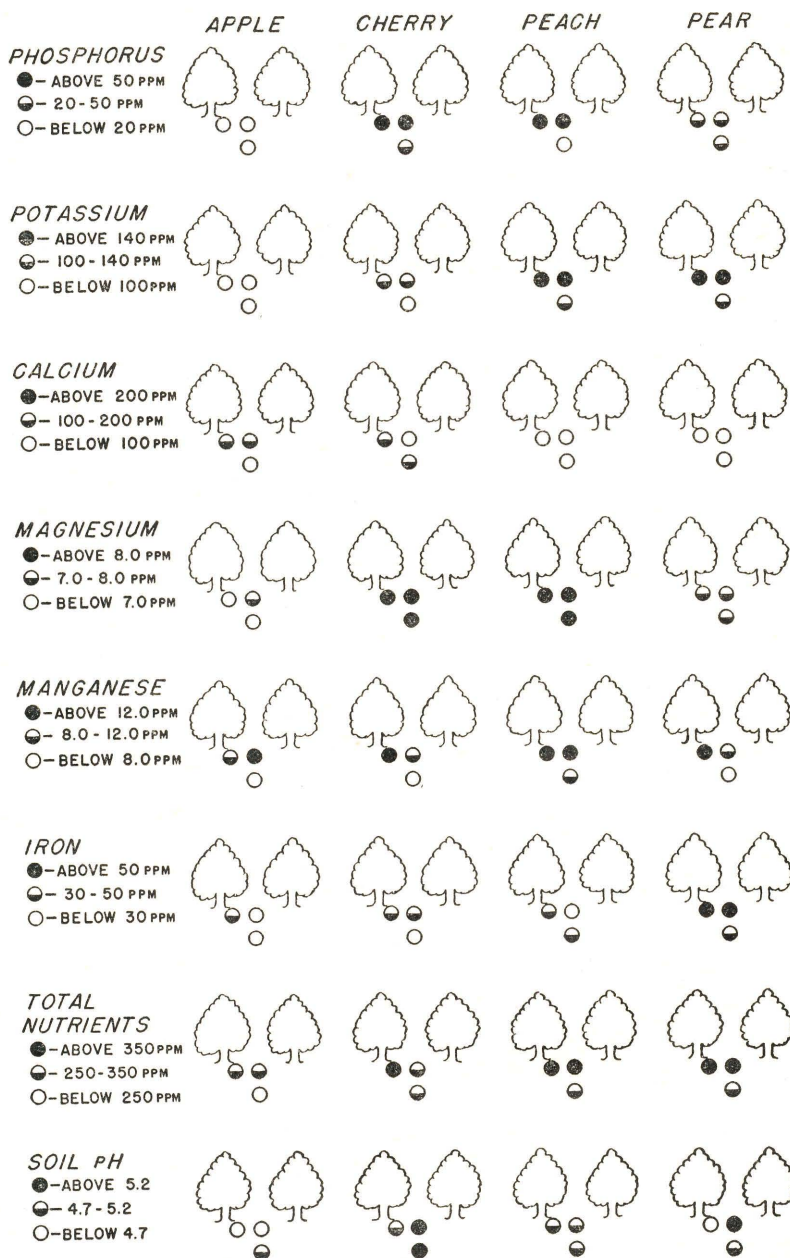


Fig. 1. Analysis of Michigan orchard soils in relation to kind of fruit and position in the orchard. (Each group of three circles indicate different positions in the orchard: upper left—surface soil beneath tree, upper right—surface soil between trees, lower—subsoil between trees.)