also supply considerable organic matter. The leguminous plants mentioned, however, not only supply humus but increase the nitrogen content of the soil, both of which are of value. Cover crops are usually planted in the fall, some about the middle of September in order to have the plants established before cold weather. In many sections when planted so early it is necessary to make provision for irrigation to start the cover crop. *Melilotus indica* is broadcasted at the rate of 20 to 25 pounds to the acre. If bur clover (*Medicago hispida*) is growing wild and contains nodules on the roots, then artificial inoculation for Melilotus may not be necessary. Unless the soil is already inoculated with the proper bacteria, artificial inoculation of the soil may be advisable with some legumes.

Commercial Fertilizers.—The fertilizer element to which the peach is most likely to respond is nitrogen, since it, more than most fruit trees, requires a soil rich in available nitrogen. However, in California, there are many soils that seem to have enough nitrogen for the best yield of peach trees. Moreover, under some conditions, nitrogen may reduce the size of peaches as a result of the increase in set, and reduce the color because of the shade from the increased foliage. With adequate water, and vigorous trees, excessive amounts of nitrogen may delay ripening several days. It is considered satisfactory to apply the fertilizers just before the spring plowing. The tree is in greatest need of nitrogen at this time. Nitrogen in the form of ammonium sulfate may be applied at the rate of one-half pound per tree for young orchards, up to as much as four or five pounds per tree, for mature orchards. Generally peach trees show little or no response from applications of either phosphorus or potassium.

Frost Protection.[12]—As the flower buds open they become more susceptible to low temperature. The blossoms are more tender the longer they have been open, and the young fruits are more tender than the newly opened flowers. The young fruits apparently become increasingly subject to frost until they are about one-half inch in diameter. It is usually the seed that is killed, the other part of the fruit requiring a lower temperature to kill it.

It is possible to protect the blossoms and young fruit against frost injury by means of orchard heating. The cost of heating is considerable and the use of heaters for peaches would generally be so infrequent that their purchase would rarely be warranted. Initial cost of equipment for heating with "lard pail" heaters is about $60 per acre and the annual overhead cost, to be prepared to heat, is about

[12] Schoonover, W. R. and R. W. Hodgson. Orchard heating in California. California Agr. Exp. Sta. Bul. 398:1–69. 1925.