

point of both soil and climate and there is no definite indication that trees on dwarf stocks are predestined to a shorter life than the same varieties on standard stocks. The way the trees are handled with reference to pruning and the way they are supported will largely determine their length of life.

In general, dwarf trees require heavier pruning than standard trees because they have a tendency to over-bear. Their relatively shallow and limited root system does not form an exceptionally firm anchor and because of this, the top should be kept within reasonable growth limits.

The cost of trees is relatively high but they may be set as close as fifteen or twenty feet and the spraying and harvesting operations are easily handled.



Golden Delicious on Malling IV
dwarf stock.



A PRINCIPLE FOR MAINTAINING EARTHWORMS IN FARM SOILS

By H. Hopp and P. J. Linder

(U. S. Dept. of Agr.)

Science, Vol. 105 (2739): June 27, 1947

During recent years a number of writers have published material on organic gardening. In conjunction with this topic the earthworms in the soil have received considerable attention. Many articles have been written extolling their desirable qualities.

The report of the authors of this paper contains nothing regarding the beneficial effects of earthworms but does discuss the importance of freezing temperatures

which may kill large numbers in the fall of the year. Evidence is cited to show that earthworms were most active and grew best at 36°F. and were killed at 32°F.

In cultivated land the temperature of the top few inches of soil may drop rapidly to 32°F. or below. Such sudden reduction in temperature may destroy large numbers of earthworms which have not yet descended to lower depths. Surface mulches of organic material help prevent such drops in soil temperature and aid materially in the survival of earthworms. Earthworms also survived satisfactorily in soil under a sod where sudden freezing in the fall did not occur. —W.P.J.