

planted with rows running the length of the house (see Fig. 2) and others with rows across the house and with a central path down the length of the house (see Fig. 3). The method of planting determines the method of laying the legs of the warming wire circuits.

Lengthwise Planting (Fig. 2)

To warm the soil of a glasshouse with inside dimensions 100ft. x 30ft. when the tomatoes are to be planted with rows running lengthwise, warming wires are spaced alternately 1ft. 6in. and 2ft. 6in. apart and the plant rows are immediately above the wires (Fig. 2).

Transformers (Fig. 2)

The transformers which will have to be installed for the circuits shown in Fig. 2 will vary according to whether continuous power supply or 10-hour supply (night switching) is used.

Continuous supply: Two 2000 VA (watts) transformers are required, one on each side of the house in a central position where power plugs are located. The voltage reduction tappings on these transformers are 15 and 12 volts.

10-hour supply or dosage method: Two 4000 VA transformers with voltage reduction tappings of 20, 17½, and 15 volts will be necessary.

Warming Wire Circuits (Fig. 2)

There is a total of 16 wire circuits, each circuit consisting of 99ft. 6in. of No. 10 s.w.g. (British standard wire gauge) galvanised steel wire for a 100ft. x 30ft. glasshouse planted lengthwise.

Crosswise Planting (Fig. 3)

The crosswise planting method in a glasshouse 100ft. x 30ft. is shown in Fig. 3. The warming wires are laid in the soil to a depth of 9in. to 12in. directly below the plant rows. The spacings between the legs of the circuits can be the same as for lengthwise planting (1ft. 6in. and 2ft. 6in.). An extra plant can be placed above each of the bends of the wire circuits at the sides of the house.

Transformers (Fig. 3)

The transformers required for houses to be planted crosswise are:—

Continuous supply: Two 2000 VA transformers with voltage reduction tappings of 15 volts and 12½ volts are

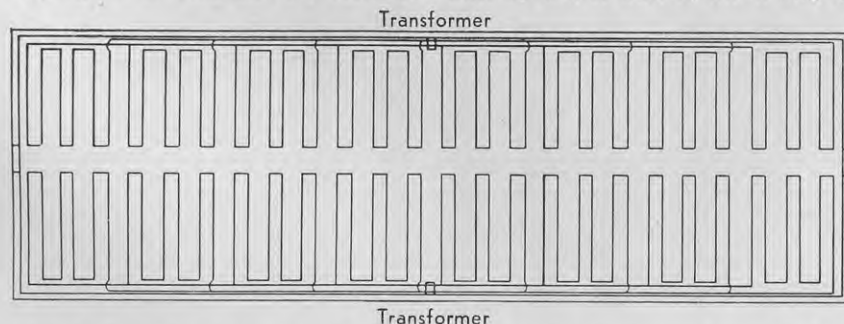


Fig. 3—Plan of soil warming wire circuits for crosswise planting and suitable for continuous or 10-hour power supply.

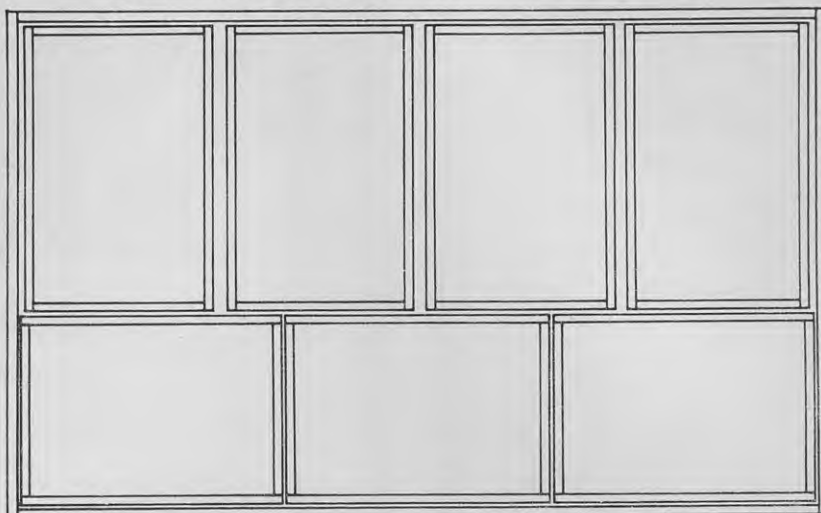


Fig. 4 (above)—Propagation bench with internal dimensions of 5ft. x 3ft., showing positions of 7 standard seed boxes each having outside dimensions of 20in. x 14in. x 2½in.

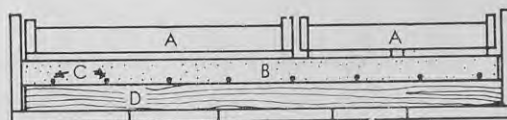


Fig. 5 (left)—Cross-section of bench. A—Seed boxes. B—2in. of sand. C—Warming wires 4½in. apart (outside wires 2½in. from sides of bench). D—2in. x 2in. batten.

needed. The transformers can be strapped to the bottom plate.

10-hour supply: Two 4000 VA transformers are required. Voltage reduction tappings are 20, 17½, and 15 volts.

Warming Wire Circuits (Fig. 3)

There are a total of 16 circuits with 90ft. 6in. of No. 10 s.w.g. galvanised steel wire in each (6 legs each 13ft. 6in. long, the bends bringing the total wire in each circuit to 90ft. 6in.).

Secondary Leads and Line Connecters

The secondary leads are of copper and they and the connecters should be specified according to the load requirements. It is extremely important that the leads should be of sufficient size to avoid excessive voltage drop. On this point the advice of the engineer of the local electric supply authority should be sought.

Soil temperatures may be controlled either by manual switching or by a thermostat. When 10-hour night supply is used switching is usually done by a time switch, which may be

obtained from the local electric supply authority.

Soil Thermostat

The soil thermostat should be placed in the soil as near to the transformer as is practicable. When a thermostat is installed it must be connected by a registered electrician, as it is connected to the high voltage side of a transformer.

A soil thermostat is a sensitive instrument and must be fitted with a protective sleeve as a safeguard against moisture and mechanical injury. It should be placed in the soil at a depth of approximately 6in. and 3in. to 4in. above and across the warming wires.

Check on Soil Temperatures

As a check on soil temperatures it is advisable to place a tested mercury-in-glass thermometer in the soil with the bulb at a depth of about 6in. A tested capillary-tube thermometer with calibrated dial may be used for convenience. The bulb should be about 6in. in the soil and placed horizontally in a position covered by the plant roots.

PROPAGATING BENCHES

The dimensions of propagating benches given in this article are multiples of 5ft. x 3ft., which will take 7 standard (20in. x 14in. x 2½in.) seed boxes. The method of arranging seed boxes is shown in Figs. 4 and 5.

Benches should be constructed so that they may be used for propagating in seed boxes, pots, or directly in the bench filled with a propagating medium.

The warming wires are supported and stapled on 2in. x 2in. battens