are usually confined to the foliage, where the symptoms show as small, circular spots, at first reddish brown but later becoming greyish from the centre outward with a reddish margin. The spots enlarge and may run together, which reduces the functional area of the leaf, thus restricting growth of the plant.

Control: A Bordeaux 5 : 4 : 50 spray should be applied in spring, after which routine spraying of Bordeaux 3 : 4 : 50 should be carried out throughout the season to ensure that the young plants will start off free from disease when planted in fruiting beds. To make 50 gallons of Bordeaux 5 : 4 : 50 use 5lb. of bluestone (copper sulphate), 4lb. of hydrated lime, and 50 gallons of water. To make 4 gallons use 6½oz. of bluestone, 5½oz. of hydrated lime, and 4 gallons of water. To make 50 gallons of Bordeaux 3 : 4 : 50 use 3lb. of bluestone, 4lb. of hydrated lime, and 50 gallons of water. To make 4 gallons use 4oz. of bluestone, 5½oz. of hydrated lime, and 4 gallons of water.

Red core root rot: Investigations have revealed that red core root rot (*Phytophthora fragariae*) of strawberries is due mainly to a parasitic fungus which invades the root tips and grows into the core, which becomes reddened. Roots become infected from autumn to spring, and in late spring and early summer the fungus causes debilitation and gradual dwarfing, wilting, and often death of the plant. The intensity of the disease depends on soil moisture, being most severe when the water content is high.

It has been established that root rot disease was introduced into fruiting beds on runners previously infected in a plant nursery.

Stunted strawberry plants suspected of being infected by root rot fungus should be lifted with the root system intact for inspection. If there is an abundance of small white feeding roots and no rotting of the larger roots, stunting is probably due to some other cause. If the small, fibrous roots are discoloured or are absent, leaving only the rat's tail-like large roots, and if the central part of the large roots is dark red, stunting is due to the red core fungus. The red colour of the central portion of an infected root may extend throughout its length or the colour may show only a short distance above the dead tip. This reddening of the root interior is best demonstrated by splitting the root with a knife or by stripping off the outer portion of the root with the thumbnail. The dark red colour of the central part of affected roots is not known to be associated with any other strawberry disease and the symptom is considered the most reliable one for recognising the disease in the field.

The fungus causing root rot disease is not known to invade the crown or stem, and any discoloration of those tissues should be attributed to some other cause.

Control: As the fungus can remain alive in the soil for several years, strawberry nurseries should not be replanted in soil where infection has occurred previously. Heavy, poorly drained soils should be avoided. Greater care in the selection of runners for planting will reduce the incidence in the field. Runners free from the fungus when planted in soil not previously used for strawberry growing should remain free, but a small percentage of infected plants can spread the infection rapidly where wet conditions prevail. Infected plants should be removed from the nursery beds and destroyed by burning.

The success of the strawberry crop depends largely on the quality of the planting material used. It is essential that preparation and after treatment of the runner bed should be such that the production of vigorous, well-rooted, disease-free plants is encouraged.

References

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Humidification System for Propagating Houses

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THE successful propagation of plant cuttings and grafts, especially the more difficult subjects, in a glasshouse is often dependent on the maintenance of correct relative humidity. A simple method of maintaining relative humidity is described in this article. Similar methods have proved successful overseas.

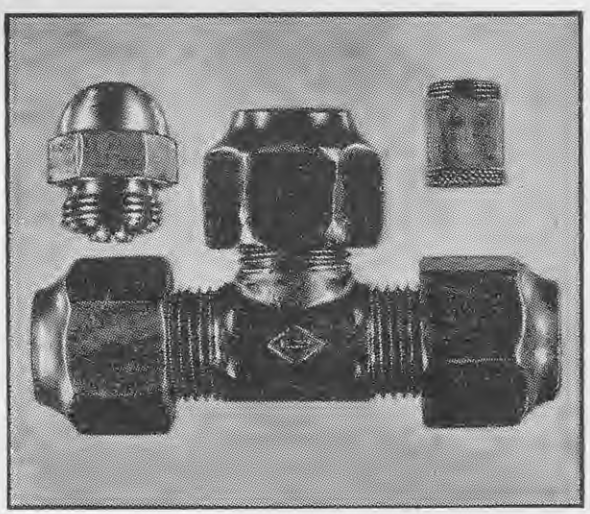
A PRESSURE water supply is usually available in a glasshouse and installation of the necessary fittings to atomise the water sufficiently so that it is readily taken up by the atmosphere is therefore simple. A water pressure of 75 to 100lb. per square inch is required in the main water supply piping. To this water supply is connected §in. copper piping. Galvanised piping could be used, but additional filters or strainers would be required in the pipeline to prevent scale from blocking the nozzles. A filter may be necessary in a copper pipeline also if the water supply is not perfectly clean.

The copper piping may be fitted overhead along the apex of the house and could be slung on wires so that it does not restrict working in the glasshouse. The vaporising nozzles should be spaced alternately along both sides of the piping, and brass tees with flared joints, as shown in the illustration, should be fitted in the pipeline to take the nozzle. The fine gauze filter or strainer fits into the base of each nozzle. For a 20ft. x 15ft. glasshouse 6 nozzles should be sufficient, but actual requirements depend on water pressure, size of nozzle, and size of house. Nozzle sizes available are 1½ gallons and 2 gallons per hour at 100lb. per square inch water pressure.

The best type of nozzle atomises the water into a very fine mist which is readily taken up by the atmosphere until it is fully saturated; that is, has a relative humidity of 100 per cent. The humidity can also be controlled as required, thereby creating ideal propagating conditions for a range of subjects.

Control of Humidity

The automatic control of high relative humidity conditions would be difficult. A clock switch and solenoid valve could be fitted to turn the water on for a few minutes every hour, but this equipment is expensive. A manual control valve or water tap by which the water can be turned on and off at intervals should be all that is necessary for most propagating houses.



Pipeline fittings for a humidification system for a propagating house. Top left—Atomising nozzle. Middle—T-piece with flared joints. Top right—Filter.

From the following approximate costs of materials individual requirements can be readily estimated: Brass tees with flared couplings, 7s. 6d. each; §in. copper piping, 1s. 6d. per foot; nozzles of 1½ to 2 gallons per hour size with filters, £1 each. The cost of materials for a 20ft. x 15ft. glasshouse would be about £10.