

FERTILIZER APPLICATIONS IN THE NURSERY

—A CAUTIONARY NOTE

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Several instances of nursery failures which have recently been brought to our notice prompt the publication of this note. In our opinion, the symptoms are often suggestive of fertilizer damage and while experiments are in progress to determine optimal nursery fertilizer use, the following interim recommendations would be appropriate.

- (I) The Institute does not endorse the use of fertilizer mixtures other than those recommended in our publications (*ie* T65 or T55). This does not necessarily deny the possible efficacy of other formulations but merely urges adherence to a mixture whose properties are best known. Cases of trouble are negligible where Institute's recommendations on fertilizer type and application methods have been rigorously followed.
- (II) It is far commoner for damage to occur through excessive application of fertilizer to young plants than through deficit of nutrients. Symptoms suggestive of deficiency (*eg* yellowing of leaves) could also arise through excess.
- (III) Generous fertilizer often cannot correct growth retardation resulting from adverse soil, climate, clonal characteristics or management factors. The effect is more likely to be one of aggravation.
- (IV) Meticulous adherence to recommendations on fertilizer type, quantity, application volume and frequency is vital. A strong solution of salts inadequately watered in, can cause dramatic damage. It is far safer to err on the side of caution.
- (V) It is to be remembered that fertilizer recommendations are based on experiments on well-growing plants of vigorous clones. There is ample evidence that small plants or plants of less vigorous clones (many currently popular high quality clones are unfortunately of this type) or plants whose growth has been slowed by other factors, are most prone to damage. Quantities of fertilizer easily tolerated by well-growing plants may be fatally excessive for slow ones.
- (VI) Therefore, where the Institute's recommendations have been followed, at the very first signs of scorch, defoliation or discolouration, it is always safer to discontinue fertilizer applications completely and to provide the plants with optimal watering schedules.
- (VII) It is assumed that fertilizer applications will only commence after the young cuttings are well rooted. With the exception of soil incorporation of superphosphate where T55 is to be used, we do not have evidence to support the incorporation of inorganic or organic fertilizers in the bag soil. Troubles have sometimes been tracked down to certain organic fertilizers—particularly "enriched" formulations.

(VIII) Plants in the 6 to 9-month age group appear most susceptible. It is well to remember that accumulation of salts in the soil through several applications is likely, particularly if watering has been inadequate. This also roughly corresponds with the stage at which roots reach the bottom of the bag and penetrate into the nursery bed. A concentration of salts through run off, percolation through the bags, and through repeated use of the same beds seems probable.

(IX) To summarize, until the Institute is in a position to recommend improvements on the formulation and method of application of nursery fertilizers, it is advised that T65 (preferred) or T55 be exclusively used. All relevant details appear in the Institute's publications (Tolhurst and Visser 1961; Tolhurst and Richards 1965). Please observe carefully, instructions on dosage, frequency and manner of application. The importance of adequate washing of the leaves immediately after fertilizer application cannot be over-emphasized. Retarded growth, defoliation, leaf scorch or discolouration which cannot be traced to disease or pest attack, can be danger signals indicative of excess fertilizer. Withhold further fertilizer applications and water generously until vigorous growth is fully restored.

There is generally no necessity to incorporate fertilizer in the soil for bags.

Fertilizer requirements and techniques in the nursery are in the process of evaluation. Results and revised recommendations will be released as soon as firm conclusions can be reached. It is possible that such revisions may tend towards a reduction of presently recommended levels.

REFERENCES

- TOLHURST, J. A. H. & VISSER, T. (1961). Manuring of nurseries 2—TRI Nursery manure: a completely soluble inorganic mixture. *Tea Q.* 32, 220-221.
- TOLHURST, J. A. H. & RICHARDS, A. V. (1965). A revised fertilizer mixture for nurseries—T55. *Tea Q.* 36, 43-44.