

MANURING YOUNG TEA: 1961

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Clonal plantings within the past several years have demonstrated that young tea is capable of more rapid development than at one time seemed likely. To obtain the best results, careful attention to every stage of the planting operation is essential but manuring represents one of the more easily controlled factors. This note gives what are believed to be generous recommendations, so that manuring need not be a limiting factor at any stage between planting and the time when crop yields have steadied down at maturity. Tea planted specifically as mother bushes requires slightly different treatment, due mainly to the different planting density (Kehl, 1961).

Young Tea Manure Mixture

T. 200

100 parts by weight—Sulphate of ammonia (20.6% N)
50 parts by weight—Sapthosphosphate (27-28% N) P_2O_5
25 parts by weight—60% muriate of potash
25 parts by weight—24% magnesium sulphate *oxide*

At 10.3% N, 9.7 lb. contain 1 lb. N.

It is suggested that the name T. 200 be retained even though alternative components are used, e.g. 50% muriate of potash, ammonium sulphate/nitrate (26% N), etc. The nitrogen content of such mixtures should be quoted, and the rates of application varied accordingly, if practicable. It is doubtful if urea would be a suitable source of nitrogen, particularly under very wet conditions and for very small plants.

We do not, of course, exclude organic manures, nor compound inorganic manures. Some of the latter, being granulated, may be found advantageous especially where tea is pegged down. Risk of damage to the foliage, by direct contact, may be lessened.

The original high-phosphate content is retained. Future modifications to this mixture will almost certainly be influenced by the varying nutritional requirements of individual clones. Until we have sufficient evidence to formulate separate mixtures, if it should be practicable to do so, we have decided to leave T. 200 unchanged.

Method of application

1. "Little and often" is the first rule to be adopted, especially in the earliest years when the root systems are very small.

2. Secondly, manure must be placed where the expanding root systems can reach it. This will mean in practice that a ring of manure should be placed with the branch-spread marking the outer limit, leaving a clear space round the stem to avoid bark scorching. The original rings will change to bands along the rows as the branches develop. Pegging may aggravate the risk of manure scorch to the foliage and, more serious, to the bark unless the pattern is arranged to allow distribution of manure between the branches. Branch-spread in pegged bushes may not be a reliable guide for the placement of manure, as the shoots are likely to extend beyond the reach of the roots.

3. A light dibbling, preferably with a stick, is recommended (Tolhurst, 1959).

Rates of application per plant

In the following table the higher frequency is preferred, but there is no point at all in increasing the frequency if that would bring some applications into very wet weather.

FIRST YEAR IN THE FIELD

Starting as soon after planting as possible

4 doses each of $\frac{3}{4}$ oz. per plant or

6 doses each of $\frac{1}{2}$ oz. per plant.

SECOND YEAR

4 doses of 1 oz. or

6 doses of $\frac{2}{3}$ oz.

THIRD YEAR

3 doses of 2 oz. or

4 doses of $1\frac{1}{2}$ oz.

On a planting of 5,000 bushes per acre the above rates are roughly equivalent to annual rates of

90 lb.-N

120 lb. N

180 lb. N per acre.

FOURTH AND FOLLOWING YEARS

It is suggested that the rate for the third year be continued until the yield obtained "catches up" with the manure output, on a 10 lb. ratio (N to 100 lb. made tea). For example, if manuring continues at 180 lb. N per acre, then as soon as the yield for any one year reaches 1,800 lb. made tea, provision may be made for increasing the manure in the following year. This can only be done by anticipating the probable yield in the light of the evidence on the spot.

If, in the above example, a clone or a clearing should show no signs of reaching 1,800 lb., manure should be reduced gradually, say by 10% per annum, until a safe

maintenance ratio is found. This reduction should only be made after it is quite certain that the yield cannot be increased.

FIRST FULL CYCLE

In the pruning year the tea may conveniently receive manure at the same rate as in the preceding year. Thereafter manuring in anticipation should be feasible, as the pre-pruning yields will give a good guide as to the yield levels likely to be obtained. The 10 lb. expansion ratio may conveniently be retained in this cycle.

Our own experience at St Coombs has shown that, in this period, frames and cropping capacity of many types of clone have been able to develop rapidly at a manuring ratio of less than 10 lb. N. There should be no reason to fear that the bushes will suffer if they outstrip their manure allocation for a short period, provided that earlier treatment has allowed vigorous frames to develop.

A change in the manure mixture may be made in this cycle to the appropriate mixture in the T. 700 series (Tolhurst, 1961). If desired to retain the high potash even for high elevations, it will be noted that T. 725 has the same N/K ratio as T. 200, and that 1.38 lb. of T. 200 are equivalent on a nitrogen basis to 1.0 lb. of T. 725.

As soon as T. 200 is abandoned in favour of one of the mature tea mixtures, dolomite should be applied, according to the highest rate of 130 lb. per acre per annum (Tolhurst, 1959a).

Future Developments

Our experiments will, from time to time, enable us to improve upon the above guide, but certain points may be emphasized in advance.

Many clones show magnesium-deficiency chlorosis on the lower leaves, particularly in the early years when growth is rapid. As long as the chlorosis does not extend to the upper leaves, we are of the opinion that there is probably no need to increase the magnesium content of T. 200 in order to try to remove all the symptoms.

Clone TRI-2023, and less markedly 2024 and 2025, commonly shows very pale yellow-green upper foliage with occasional pink colouring indicative of nitrogen deficiency. The rates suggested above may not be sufficient, under some conditions, to prevent such deficiency. For these and related clones, generosity with T. 200 in frequent small doses is certainly advisable in the first few years.

Phosphate will doubtless be reduced in time, and dolomite may be increased. Both these modifications are likely to apply after the first pruning, rather than before.

We would encourage experiments on differential manuring of individual clones.

References

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