*SOME NOTES ON SCARLET MITES AND LONGER PRUNING CYCLES

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There seems little doubt that the incidence of Scarlet Mite continues to increase, because of our lack of basic knowledge on their biology and ecology. We do not know, for instance, why the increase in mite populations has occurred in the past six years or so, neither do we know definitely how re-infestation occurs after pruning.

The lighter pruning some estates have adopted in recent years obviously leaves a larger residual infection at the time of pruning, while longer pruning cycles provide the extra time for a build-up to take place. Many estates, however, still carry out a 'clean' prune and despite this, they find that large 'build-ups' of populations do occur.

Observations in the field have shown that there are no mites on frames of pruned tea and, while most weeds with the exception of ferns have been found with mites on them, those mites have been very few in number and certainly not a potential source of heavy re-infestation. Recently many samples of soil, mulch and prunings from a recently-pruned field have been examined but no scarlet mites were found. Given a clean prune, therefore, whence comes this re-infestation ? With our present state of knowledge the most likely answer would appear to be 'from the shade trees.'

Attacks are now so severe as to limit crop production in nearly all fields upcountry on anything over a four year cycle: appreciable defoliation can be seen in fields only three years from pruning. If a field is to run for more than four years, therefore, it would seem advisable to give it some form of acaricidal treatment during its third year.

The aim of all endeavours must be to reduce the mite populations to such low numbers that a build-up of economic proportions between prunes is unlikely. This may not prove possible to achieve, but if an attempt is to be made then some steps will have to be taken against the mites living in shade trees.

Mites cannot fly, neither can they live for very long without food. The rough bark of a mature shade tree offers them no source of food and it is extremely doubtful whether they could survive long enough to climb to the top of, say, a mature tree of *Grevillea robusta* or *Albizzia moluccana*, the two species which carry by far the largest populations. The writer has examined the bark of many shade trees immediately after pruning and has not found any mites on the bark of a mature tree, and only an occasional one on young trees; there have certainly not been the positive streams

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which could be expected if there were a general migration from pruned tea to shade trees, as has been suggested. The answer to the question of how the mites get into the shade trees can be found, I think, if very young grevilleas are examined. Most of these will be found to carry quite large populations and it seems evident that the initial infection occurs as the young trees grow up through the tea.

If this is correct, and there is no other source of infection, it would appear that it is only necessary to pollard shade trees, removing *all* leaves and with them *all* mites to eliminate any chances of re-infestation. As a few mites have been seen on the bark of young shade, it would be necessary to take other measures with regard to these.

Pollarding shade at pruning time would leave the field denuded of shade when it is most required, but pollarding during its third year would not have this disadvantage, as the soil would then have a cover of tea.

The life cycle of the scarlet mite is comparatively long and the build-up of populations correspondingly slow, but nevertheless it should be apparent that to be effective acaricidal measures should provide a 'kill' of over 90 per cent, otherwise there is the time, and there are the mites available to produce a heavy re-infestation before pruning.

Of the various acaricides tried so far sulphur is the most efficient we can use on tea, but it has the great disadvantage of giving a taint to the made teas; because of this tainting any tea in plucking must be rested for three weeks after the last sulphur application. Given three weekly applications of sulphur, therefore, tea will be out of plucking for six weeks.

Comparative trials between dusting and spraying have so far indicated that spraying with high volume nozzles gives better results than does dusting, but the difficulties of obtaining a good coverage in a three-year old field are obvious. If the field is skiffed across, however, the foliage is considerably reduced and a satisfactory coverage more easy to obtain.

Skiffed tea takes about six to seven weeks to come into plucking but as the tea sprayed with sulphur is out of plucking anyhow, no extra crop will be lost. There is indeed a good chance that no crop will be lost at all as:

1. A very good plucking table will be re-introduced.

2. A mild rush of crop can be expected when the bushes come back into plucking.

3. The operation can be timed so that some of the tea is out of plucking during the normal rush period, thus helping to 'even out' crop. Indeed the best time to spray sulphur is obviously during dry weather and just before rain is expected.

4. The control of mites should greatly benefit both the tea bush and the field crop figures for the remainder of the cycle.

To sum up then, it would appear that if an up-country field carries a large population of scarlet mites and is due to be pruned on a cycle longer than four years, the following treatment might warrant consideration:—

1. Skiff the field at the end of the usual dry period during its third year.

2. Pollard shade trees, more especially *Grevillea robusta* and *Albizzia moluccana.*

3. Spray with sulphur for three weekly rounds using lime-wash nozzles and applying at the rate of at least 4 lbs. in 100 gallons to the acre. Spray the bark of young shade trees, and, in the case of very young shade, as much of the foliage as can be reached.

A very careful watch must be kept for blister blight after skiffing as it is very easy for an attack to develop unnoticed on the new flush forming below the skiffed level. It is advisable to dust at least one round with copper immediately after the third sulphur application, even though the weather be dry.

After any skiff, extra care must be taken to remove all 'banjies' when bringing the field back into plucking.

It is the writer's experience that costs work out as follows:—

Skiffing @ 7 labourers per acre	...	Rs.	17.15
Spraying 3 rounds at 6 labourers per acre	...	,,	14.70
Sulphur 3 rounds @ 4 lbs. per round	...	,,	7.68
Total	...	Rs.	39.53

Cost of pollarding will depend on the stand of shade, and extra expense will be incurred in bringing the field back into full plucking.