B-04: Effects of magnesium and iron on the chlorosis of *Livistonia rotundifolia* and *Licuala grandis*

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Livistonia rotundifolia and *Licuala grandis* have a high demand in the export market as ornamental foliage palms. Chlorosis (yellowing of leaves) has been one of the major reasons of rejecting these plants by the export market. Therefore, this study was carried out to find out the effects of magnesium and iron on chlorosis and if any to determine the best combination of magnesium sulphate ($MgSO_4$) and ferrous sulphate ($FeSO_4$) as foliar application to overcome the chlorosis.

Seedlings were selected separately from each of the 2 species at the same age and the same degree of chlorosis according to eye estimation. Five levels of 49% $MgSO_4$ (0, 5, 6.5, 8, 12 g/l) and 5 levels of 48% $FeSO_4$ (0, 0.5, 0.65, 0.8, 1.2 g/l) were chosen based on the present rate of application and the treatments were arranged in a factorial structure in a Randomized Complete Block Design with 2 replicates.

Scores were given based on the green colour intensity showed by the youngest fully open leaf and 4th leaf from the top at 8th, 10th, 12th and 14th weeks after starting the foliar application. Leaf analysis was done at the 12th week to determine the Mg and Fe contents of the fully open youngest leaf of *Licuala grandis*.

There were significant effects of $FeSO_4$ treatments on green colour of younger leaves and $MgSO_4$ treatments on lower leaves of *Livistonia rotundifolia*. All main factors and interaction effects were significant in younger leaves and only time and $MgSO_4$ treatments resulted in significant effects on lower leaves of *Licuala grandis*. For both species, 12g $MgSO_4$ and 1.2 g $FeSO_4$ treatments resulted in the highest green colour on lower leaves and younger leaves, respectively. In the 14th week younger leaves of *Licuala grandis* showed highest green colour with 1.2g $FeSO_4$.

Effects of $FeSO_4$ and $MgSO_4$ on the leaf Fe content were significantly different ($P < 0.05$). Although $MgSO_4$ treatment made no significant change on leaf Mg content, $FeSO_4$ treatment had caused significant changes.

Acccording to the study, 1.2 g 48% $FeSO_4$ and 12 g 49% $MgSO_4$ per litre per week can be selected as the best treatment combination to overcome chlorosis.