SOME OBSERVATIONS ON TISSUE CULTURE DERIVED OIL PALMS (ELAEIS GUINEENSIS JACQ.)

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Mantled female flowers and andromorphic male flowers, coupled with reduced seed set are the dominant somaclonal variations exhibited by many tissue culture derived plants in oil palm (Elaeis guineensis Jacq.). The abnormality seem to be due to the release of suppression of growth of male primordia in the female flower and stimulated growth of the normal stamen with the reduction of anther in the male flowers. Though seed set is not directly linked to mantleness, there is a close assocation between the two. Palms with high frequency of mantled flowers have less number of seeded fruits.

Tissue cultured plants tend to produce more female inflorescences than male, also there is a tendency to produce more flowers/bunch and to increase the length of the female spikelets. The female inflorescence undergo normal ripening even though there is no seed set. This continuation of growth even after possible failure of fertilization is also shown in the andromorphic male inflorescence.

Viable pollen grains are produced by most tissue cultured plants, although many posses mantleness with highly reduced seed set. Meiosis appears to be normal in the anthers of these plants. Lack of fertile gametes do not seem to be the cause of this reduced fruit set.

The abnormal floral development and the subsequent effect on seed set seem to be a regular feature and the pattern is quite uniform within a palm. No natural recovery from this effect has been observed so far.

Production of a terminal inflorescence (mantled) resulting in premature death of some seedling is an interesting somaclonal variation.