

How to read a book both ways: detecting and understanding the mantled phenotype in oil palm

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The *mantled* epigenetic somaclonal variation of oil palm has generated a vast array of research endeavours, both within and outside of our lab. Because of its unpredictable, detrimental effect on palm oil production, we need to discriminate the variant material before it reaches the field and therefore we need to find a marker that would be effective in the *in vitro* culture stages. But since that also means working on a material that does not exhibit a visible phenotype, we also need to investigate in parallel tissues from adult regenerant palms that can display *mantled* flowers - an imperative that takes us away from the “early marker” spot.

We thus undertake to read the story of mantledness both ways by:

- screening *in vitro* material for markers that are differentially expressed or regulated in relationship with the proneness to regenerate variants;
- analyzing the possible involvement of various candidate genes based on the characteristics of the abnormality, *i.e.* the reduced genomic DNA methylation and the homeotic-like feminization of male floral organs.

Keywords:

epigenetics, oil palm, mantled.