

MPOB FAST TRANSFER TECHNIQUE (MoFaTT) IN LIQUID CULTURE SYSTEM*

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The liquid culture system offers advantages in reproducibility, versatility and efficiency with high potential for scaling-up propagule production. A liquid culture consists of small cell groups and large cell aggregates dispersed in a liquid medium and actively growing under agitation and aeration (Narayanaswamy, 1994). Application of this technology would lead to development of automation for oil palm tissue culture. The liquid culture system has been established in some laboratories and at MPOB since 1999 (Tarmizi, *et al.*, 2003).

However, there is still a need to improve the efficiency of the liquid culture system. To address this issue, MPOB Fast Transfer Technique (MoFaTT: *Figure 1*) in liquid culture system was developed as a rapid and convenient method for liquid media replenishment during maintenance and maturation of cultures (*Figure 2*).

MoFaTT: DESCRIPTION (*Figure 1*)

- Pre-sterilized flask of preferred size with media for culture maintenance (a);

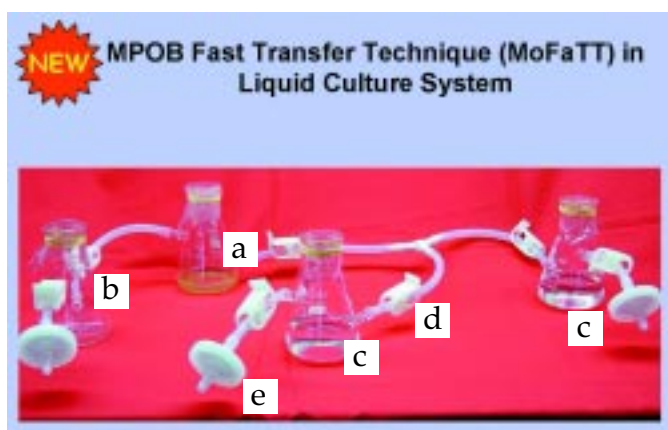


Figure 1. One of the possible arrangements in MoFaTT.

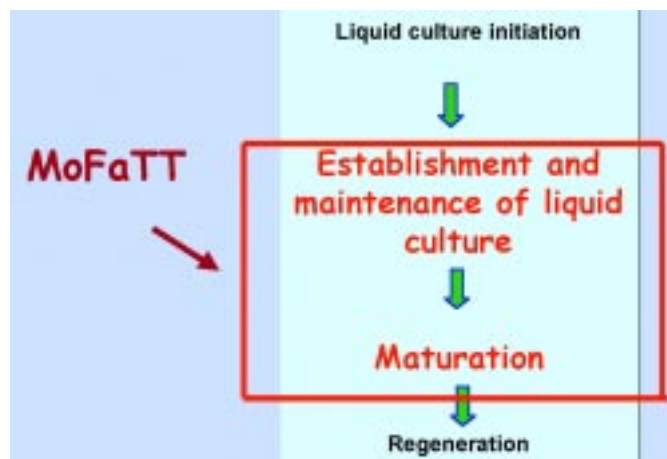


Figure 2. The application of MoFaTT in liquid culture system.

- An empty pre-sterilized flask of preferred size for discarding spent culture medium (b);
- Other pre-sterilized flasks of preferred size with fresh maintenance, maturation or other specific culture media (c);
- Clamps are attached to the tubing and are released during culture medium replenishment (d);
- Filter devices are attached to each flask to reduce the pressure build-up within the flask (e);
- Monthly culture medium replenishment can then be done at anytime right on the shaker.

BENEFITS

- The conventional 10-step protocol will be reduced to one for culture media replenishment (*Figure 3*);
- No movement of cultures from culture room to laminar flow cabinet;

* A culture vessel and a method of culture transfer utilizing the vessel:
Patent application, PI 20044347.



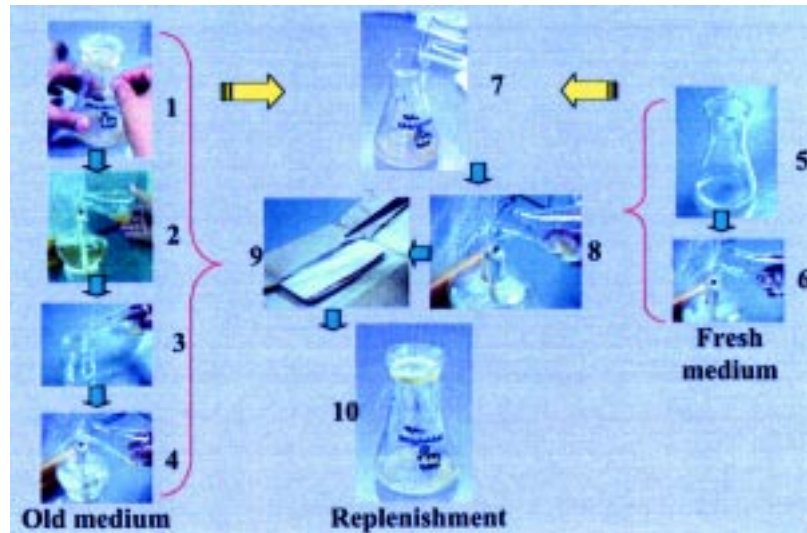


Figure 3. Conventional method of culture media replenishment during maintenance and maturation of media.



Figure 4. Culture medium replenishment on the shaker.

- Replenishment of culture medium can be done on the shaker at any desired time (Figure 4);
- Reduced risk of contamination;
- Can be applied to any fluidic culture system
- Potential for automation.

REFERENCES

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