

SIMPLE IMPELLER WITH FAST TRANSFER TECHNIQUE (SLIM-FaTT) IN LIQUID CULTURE SYSTEM*

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The liquid culture system has been established in laboratories and MPOB since 1999 (Tarmizi *et al.*, 2003). Various technologies have been developed to further improve the system (Tarmizi and Zaiton, 2005).

The two-in-one MPOB Simple Impeller (2-in-1 MoSLIM) was developed as a new process to provide simultaneous aeration and agitation (two-in-one) for establishment, maintenance and maturation of liquid cultures. It is also an economical and practical approach to maintain cultures in liquid culture for any crop or animal. However, the vessel has still to be taken to the laminar flow cabinet for medium replenishment. This will increase the risk of contamination. To overcome the problem, further modification was made on the system so that the culture need not be moved from the culture room with the replenishment done on site.

NOVELTY OF THE TECHNOLOGY

- No movement of cultures from culture room to laminar flow cabinet.
- Replenishment of medium on site at any time.

DESCRIPTION (Figure 1)

- Pre-sterilized modified bottle of preferred size with medium for culture maintenance (a) and to be placed on a magnetic stirrer for agitation.
- An empty pre-sterilized modified bottle of preferred size for discarding the spent medium (b).

* *Agitation and aeration apparatus and system: patent application, PI 20055044*



Figure 1. One possible arrangement with the SLIM-FaTT system.

- Other pre-sterilized modified bottle of preferred size with fresh maintenance, maturation or other specific media (c).
- The clamps attached to the tubing are released during medium replenishment.
- Filter devices are attached to each bottle to reduce the pressure build-up in the bottle.
- Medium replenishment can then be done at any time in the culture room.

BENEFITS

The benefits of the SLIM-FaTT system are:

- the conventional eight-step protocol is reduced to one step for medium replenishment;
- no movement of cultures from culture room to laminar flow cabinet;
- replenishment of medium can be done in the culture room at any time (Figure 2).
- reduced risk of contamination;
- can be used for any fluidic culture system; and
- potential for automation.



Figure 2. Culture medium replenishment in the culture room.

REFERENCES

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