

TWO-IN-ONE MPOB SIMPLE IMPELLER (2-in-1 MoSLIM) IN LIQUID CULTURE SYSTEM*

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Conventional liquid culture of cells is limited by the size of the flasks or shakers (Tarmizi, 2002). To scale-up, bioreactor or special commercial flasks are used (Tarmizi *et al.*, 2003). These systems are expensive. Furthermore, most of them use different devices for agitation and aeration. To address this issue, the two-in-one MPOB simple impeller (2-in-1 MoSLIM) was developed to provide simultaneous aeration and agitation (two-in-one) for liquid cultures. It is also an economical and practical approach to maintain cultures in liquid for any crops or animals.

NOVELTY OF THE TECHNOLOGY

- Simple and cheap impeller.
- Two-in-one system (agitation and aeration done together).

2-IN-1 MoSLIM: DESCRIPTION

The 2-in-1 MoSLIM is an impeller system for agitation in liquid cultures (Figure 1). It consists of

an appropriate size tubing, a magnetic stirring bar and a top plate. The magnetic stirring bar is situated in the lower end of a long tubing and attached to a short tubing by a connector. The free end of this short tubing is attached to the inner port of the top plate.

The long tubing is perforated at appropriate points. This tubing is placed in the culture vessel containing the cultures and media. Another longer tubing is attached to the outer port of the top plate and its other end to a simple pump for aeration. The vessel is then placed on a magnetic stirrer for agitation. The impeller will provide agitation and aeration simultaneously when the system is switched on.

OBSERVATION

Fresh weight increment of about two- to six-fold was obtained for cultures from five oil palm clones incubated for 30-40 days with the 2-in-1 MoSLIM system.

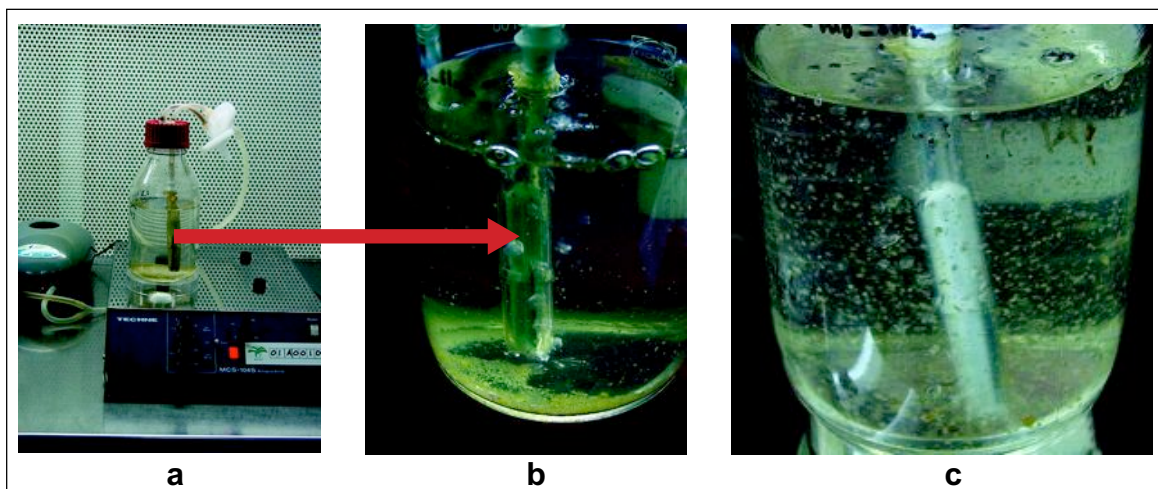


Figure 1. 2-in-1 MoSLIM.

* Agitation and aeration apparatus and system:

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BENEFITS

- Simple and cheap impeller (*Figure 1a*).
- Two-in-one system (agitation and aeration are done simultaneously (*Figure 1b*)).
- Can be used for liquid cultures of other crops or animals systems.
- Potential for automation.

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