

Flyash Based Bacterial Pesticides for Mosquito Control

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Coalash based biopesticidal formulations were evaluated for their efficacy and residual activity. The Water dispersible powder (WDP) was tested in polluted habitats namely cess pits, drains and tar tanks breeding *Culex quinquefasciatus*, the vector of filariasis at 1.5g/m². A reduction of above 90% was noticed with the late instar larval stages and pupal stages by 24 and 48 hrs respectively. This effect was seen for 5 days regardless of the habitat treated and by 7th day, IV instar larval stages started appearing, necessitating the application of WDP formulation once a week to prevent adult emergence. The slow release floating formulation, briquette (BR) was able to bring about larval/pupal reduction of above 80% among culicines/anophelines breeding in unused/abandoned wells at an application rate of 2 and 3g/m². Simulated field studies carried out with the granular formulation (GR), against *Aedes aegypti*, the vector of dengue and chikungunya showed that with a single application of 0.25g/m², 100% reduction and a residual activity for upto a month was observed.

Hence, when immediate control of mosquito immatures are required, WDP can be used. When the toxin needs to be released near the larval feeding zone in a slow and sustained manner, for a prolonged period of time, BR formulation would be ideal. However, in confined habitats namely tree holes, tyres etc, the GR formulation can be applied as they remain in the habitat releasing the toxin in a slow and sustained manner. This study has brought out a new avenue for the utilization of coalash.

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