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Assessment of Attractency of Bactrocera Zonata and Bactrocera dorsalis (Diptera:Tephritidae) to Different Biolure Phagostimulant-Mixtures

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Abstract : Fruit flies of Bactrocera genus cause heavy losses in fruits and vegetables globally and insecticide-application for their control creates issues of ecological backlash, environmental pollution, and food safety. There is need to explore alternatives and food-baits application is considered safe for the environment and effective for fruit fly management. Present experiment was carried out to assess the attractancy of five phagostimulant-Mixtures (PHS-Mix) prepared by mixing banana-squash, mulberry, protein-hydrolysate and molasses with some phagostimulant-lure sources including beef extract, fish extract, yeast, starch, rose oil, casein and cedar oil in five different ratios i.e., PHS-Mix-1 (1 part of all ingredients), PHS-Mix-2 (1 part of banana with 0.75 parts of all other ingredients), PHS-Mix-3 (1 part of banana with 0.5 parts of all other ingredients), PHS-Mix-4 (1 part of banana with 0.25 parts of all other ingredients) and PHS-Mix-5 (1 part of banana with 0.125 parts of all other ingredients). These were evaluated in comparison with a standard (GF-120). PHS-Mix-4 demonstrated 40.5±1.3-46.2±1.6% AI for satiated flies (class-II i.e., moderately attractive) and 59.5±2.0-68.6±3.0% AI for starved flies (class-III i.e., highly attractive) for both B. dorsalis and B. zonata in olfactometric study while the same exhibited 51.2±0.53% AI (class-III i.e., highly attractive) for B. zonata and 45.4±0.89% AI (class-II i.e., moderately attractive) for B. dorsalis in field study. PHS-Mix-1 proved non-attractive (class-I) and moderately attractive (class-II) phagostimulant in olfactometer and field studies, respectively. PHS-Mix-2 exhibited moderate attractiveness for starved lots in olfactometer and field-lot in field studies. PHS-Mix-5 proved non-attractive to starved and satiated lots of B. zonata and B. dorsalis females in olfactometer and field studies. Overall PHS-Mix-4 proved better phagostimulant-mixture followed by PHS-Mix-3 which was categorized as class-II (moderately attractive) phagostimulant for starved and satiated lots of female flies of both species in olfactometer and field studies; hence these can be exploited for fruit fly management.

Keywords : attractive index, field conditions, olfactometer, Tephritid flies
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