

MANAGING HELICOVERPA IN SORGHUM WITH BIOPEST™

TECH NOTE SERIES



Version 3 | Date Nov 2020 | Ref 18 | Page 1

KEY POINTS

- Whether applying NPV by air or ground rig - coverage and droplet survival is critical
- *BIOPEST™* has been proven to increase droplet size and survival, reduce drift and increase leaf coverage - improving the effectiveness and longevity of NPV.
- *BIOPEST™* has activity in its own right on helicoverpa by reducing egg laying

HELICOVERPA MANAGEMENT

Sorghum crops can be subject to Helicoverpa pressure during flowering. When eggs are laid on heads before flowering they will cause the most damage. The preferred option for Helicoverpa management in sorghum is nucleopolyhedrovirus (NPV), a disease of Helicoverpa available under commercially produced formulations (eg. Vivus Max® or Gemstar®), penetrative properties.

TIMING OF NPV SPRAY

The best timing for an NPV spray is 3 days after 50% of heads in the field have completed flowering (brown anthers to the base of the head). This delay is necessary not only to target the right size of Helicoverpa, but also for Microplitis larvae (Helicoverpa parasites) to complete their life cycle before their host dies.

BIOPEST IMPROVES EFFICACY OF NPV SPRAY

High temperatures and low relative humidity typically encountered during summer are not ideal for high volume aerial or ground rig applications. Over the past few seasons, the use of LV (Low Volume) applications on the Darling Downs have become popular for NPV applications Helicoverpa control.

Aerial applications commonly consist of a total volume of 30- 40L/Ha, but can be as low as 10L/Ha including 0.5%-1.0% *BIOPEST™*, and the recommended rate of NPV. For ground rigs 100L/Ha as a banded application with 0.5%-1.0% *BIOPEST™*, is commonly used.

Using *BIOPEST™* with an NPV spray helps increase droplet survival as well as increasing droplet coverage on the leaf surface.

SACOA has conducted a large amount of research over the last decade into the effect of *BIOPEST™* on VMD (volume median diameter), drift reduction, leaf surface coverage and droplet survival. Work conducted in cotton proved a significant reduction in drift and increase in leaf coverage with the addition of *BIOPEST™* even at relatively low rates (see Graphs 1 & 2).

More recently aerial application trials conducted in canola indicate the addition of *BIOPEST™* can increase coverage the equivalent of 10L/Ha of water (see Graph 3).



Image 1: Sorghum (Source: SACOA)



Image 2: Assassin bug feeding on Helicoverpa

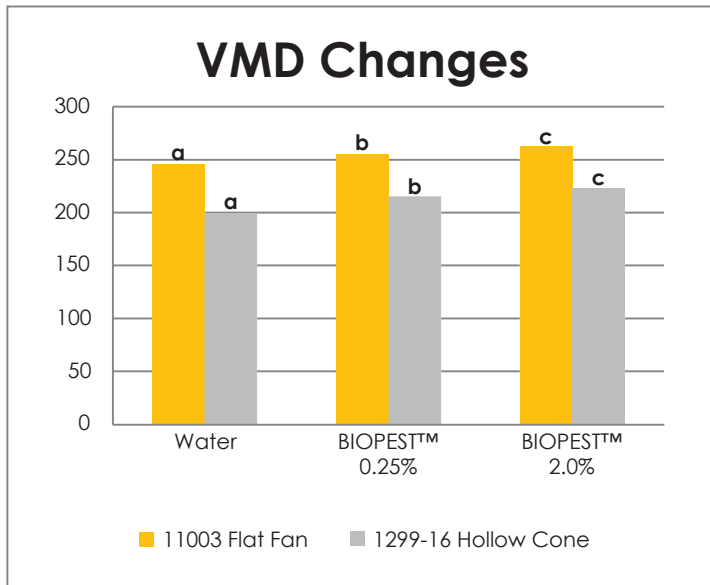


Image 3: Canola (Source: SACOA)

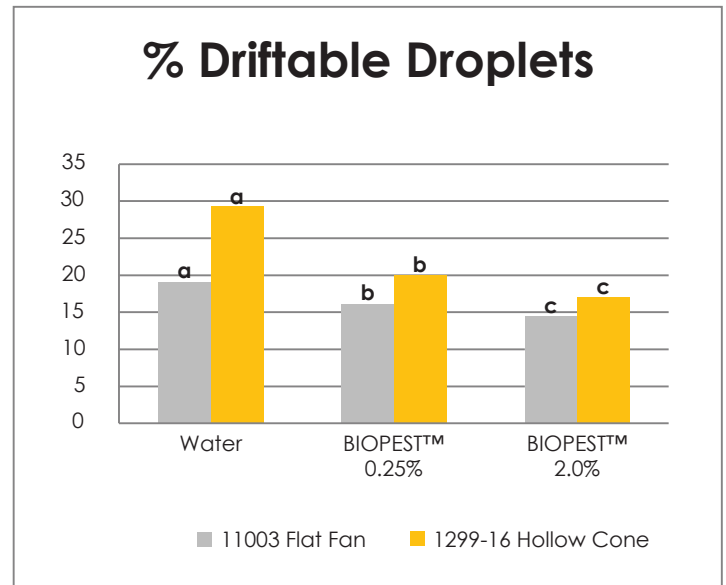
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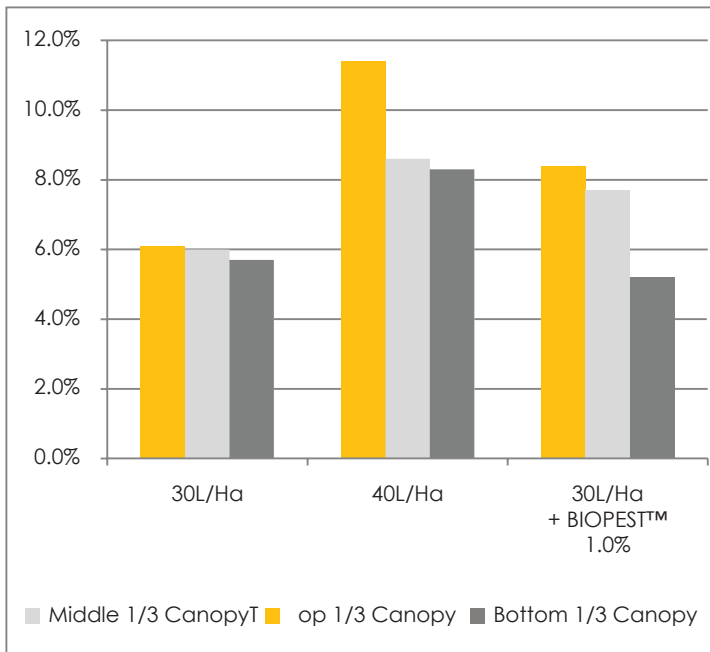




Graph 1: Droplet size changes with the addition of BIOPEST™, treatment differences are between treatments within the same nozzle type Nozzle Type 11003 @ 300kPa, 1299-16 @ 400kPa. Means followed by the same letter are not significantly different. (Source: UWS 3C CRDC Final Report 2003)



Graph 2: Change in % driftable droplets with BIOPEST™ treatment differences are between treatments within the same nozzle type Nozzle Type 11003 @ 300kPa, 1299-16 @ 400kPa. Means followed by the same letter are not significantly different. (Source: UWS 3C CRDC Final Report 2003)



Graph 3: Increase in canola leaf surface coverage with the addition of BIOPEST™. (Source - Agvivo demonstration trial June 2014).

SUPPRESSION OF APHIDS

The addition of Biopest® to the spray mixture also allows the suppression of aphids present at low numbers, and delays a build-up of large colonies. As Biopest® is soft on beneficials, such as Predatory shield bugs and Assassin bugs, their population will not be disrupted and they will continue to work actively in the crop.

REFERENCES

CRDC Report - UWS 32 - Evaluation of mineral oils for cotton IPM - October 2003.

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