EFFICACY OF SPINOSAD (*SACCHAROPOLYSPORA SPINOSA*) AGAINST MOSQUITO PUPAE

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ABSTRACT

Spinosad is a novel mode-of-action insecticide derived from a family of natural products obtained by fermentation of *Saccharopolyspora spinosa*. Spinosad contains a mix of two spinosoids, spinosyn A, the major component, and spinosyn D, the minor component, in a roughly 17:3 ratio. Research has shown that spinosad kills through both contact and ingestion action, but is much more effective if insects ingest it[1]. The effectiveness of spinosad against larval stages of mosquitoes is well documented, but if it could be used successfully for pupal mosquito control the scope of its use would be greatly expanded. We sought to begin evaluating the active ingredient spinosad specifically against mosquito pupae, the final aquatic stage before adult emergence. The formulation to be tested at CMMCP (Natular™ G30) is certified organic through OMRI.

Using *Culex* pupae raised from locally collected egg rafts, and spinosad samples from catch basins treated with Natular™ G30 WSP, laboratory trials were conducted in 2021. These limited preliminary trials were an extension of larval bioassays, but did not indicate significant control of the *Culex* pupae. A more thorough examination is needed to determine if this active ingredient can achieve significant control against mosquito pupae. Protocols will be reviewed and it is expected that these trials will be expanded for the 2022 season.

[1] http://ipm.ucanr.edu/TOOLS/PNAI/pnaishow.php?id=65