

**EFFECTS of JUVENILE HORMONE and SYNTHETIC
JH ANALOGS on CASTE DIFFERENTIATION
in *RETICULITERMES FLAVIPES*
(ISOPTERA: RHINOTERMITIDAE)**

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We are evaluating natural and synthetic chemicals for their abilities to influence caste differentiation in common midwestern subterranean termites (genus *Reticulitermes*). This poster presents results of our efforts using Juvenile Hormone (JH) and synthetic JH analogs to induce presoldier and nymph differentiation from worker *R. flavipes*. Our bioassays utilized no-choice exposure methods that involved direct contact with, or feeding on treated filter paper. Results clearly indicate that commercially available JH III, as well as other synthetic JH analogs, have pronounced effects on inducing presoldier differentiation from workers. In some cases, synthetic compounds have clear thresholds for activity (i.e., concentrations in excess of threshold levels have no apparent effect on presoldier induction). In addition, in feeding assays containing 500 individuals: (1) nymph formation was observed after 12 weeks that was (2) inhibited by the addition of soldiers at the initiation of assays. Results support earlier hypotheses that juvenile hormone plays some as-yet unspecified role in presoldier differentiation. However, most interestingly, results suggest that soldier presence is inhibitory toward differentiation of reproductive castes.