THE DEVELOPMENT OF BAITS FOR ARGENTINE ANT CONTROL

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The failure to control Argentine ants, *Linepithema humile* (Mayr), with perimeter sprays and applications of granules and the availability of new chloronicotinyl and pyrazole insecticides have simulated the development of liquid ant baits. Ideal toxicants provide delayed toxicity of workers. Boric acid and sodium octaborate tetrahydrate (1.0% and 0.5%) in 25% sucrose water have a narrow range of activity, providing 50% kill (LT_{50}) 1.2 – 1.3 and 2.2 – 2.4 days, respectively. Sucrose solutions containing 0.005%, 0.001% and 0.0025% imidacloprid provided LT_{50}'s of 0.9, 1.8, and 3.0 days, respectively. The range of concentrations of baits containing fipronil is also very broad with 0.0005% and 0.00005% providing LT_{50}'s of 0.5 and 2.5 days, respectively. Thiamethoxam provided an excellent profile of LT_{50}'s with 0.001% (0.5 days), 0.0001% (1.2 days), 0.00005% (2.1 days), and 0.000025% (3.6 days).

In field choice tests, concentrations of boric acid greater than 2.0% were repellent. Imidacloprid consumption decreased when concentrations were ≥ 0.005%. Sucrose solutions containing ≥ 0.0005% fipronil were repellent. Thiamethoxam was readily consumed over concentrations ranging from 0.01% to 0.00001%.

Field test confirmed that those toxicants and concentrations that provided an LT50 between 1.5 and 3.0 days and that were readily consumed provided significantly greater control did higher concentrations. Imidacloprid at 0.001% provided a 63% reduction; fipronil at 0.001% provided a 90% reduction in workers at 4 weeks.