

**LONG TERM EFFECT OF THE FIRE ANT PATHOGENS *VAIRIMORPHA INVICTAE*
AND *THELOHANIA SOLENOPSAE* IN ARGENTINA**

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Abstract

A long term study of fire ant populations (mainly *Solenopsis invicta* Buren) naturally infected with *Vairimorpha invictae* Jouvenaz and Ellis (Microsporida: Burenellidae) and *Thelohania solenopsae* Knell, Allen, and Hazard (Microsporida: Thelohaniidae) is in progress. Six rectangular field plots (10 x 100 m) were set up in north central Santa Fe Province, Argentina, in May 2000. Initially, five of these plots were infected with microsporidia, the density of colonies ranged from 4 to 19 per plot and the infection rates ranged from 15 to 50% of the active colonies. The other plot was infection-free (control plot) with an initial density of 8 uninfected colonies. The plots have been monitored every 2-5 months for the density of colonies (mound counts and population indexes) and rates of microsporidian infections. In February 2001, a 85-100% reduction in fire ant colony density was observed in all infected plots. Some reinfestation occurred in two plots. In contrast, in the control plot, a gradual increase in colony density was observed until both microsporidia naturally infected the plot in December 2001. After that, a 100% reduction in colony density was observed. In February 2002, only 5% of the initial number of colonies was found in one plot. Preliminary conclusions indicate that these microsporidia have lowered the field density of *S. invicta* in Argentina. The magnitude of their impact will be determined at the end of the study (2003/2004). This detrimental effect on *S. invicta* populations is consistent with previous work conducted in Buenos Aires Province with *S. richteri* Forel. Because of dual infections, it was impossible to separate the individual effects of both microsporidia.