



**COMPARATIVE EFFICACY OF FIPRONIL, IMIDACLOPRID, SPINOSAD AND INDOXACARB AGAINST LARVAE OF THE CATTLE TICK *RHIPICEPHALUS MICROPLUS* CANESTRINI (ACARI:IXODIDAE)**

**F.A.F. Souza<sup>1,3</sup>, K.F. Dunkel<sup>1</sup>, G.A.C. Lima<sup>1</sup>, L. Higa<sup>2</sup>, B.M. Silva<sup>3</sup>, S.H. Weber<sup>1</sup>, C.T. Pimpão<sup>1</sup>, G.H. Bechara<sup>1</sup>**

<sup>1</sup>Escola de Ciências da Vida, PUCPR, Curitiba-PR; <sup>2</sup>Embrapa Gado de Corte, Campo Grande-MS; <sup>3</sup>Dexter Latina Indústria e Comércio de Produtos Químicos, São José dos Pinhais-PR.

The cattle tick *Rhipicephalus microplus* causes large economical losses to livestock worldwide due to direct effects of feeding and transmission of the tick fever pathogens. Despite efforts employed in the search for alternative forms of tick control, chemical acaricide are still the conventional method used. Herein, we evaluated through the *in vitro* bioassay larval packet test (LPT), in quadruplicate, the comparative efficacy of four different concentrations of the active ingredient (a.i.) of Fipronil (2, 4, 8, 16 µg a.i.), Imidacloprid (8.6, 17.2, 34.4, 68.8 µg a.i.), Spinosad (10, 20, 40, 80 µg a.i.) and Indoxacarb (35, 70, 140, 280 µg a.i.) against the cattle tick *R. microplus*. Fully engorged tick females were collected directly from cattle in a farm at the municipality of Dois Irmãos do Buriti-MS, and kept in a Biological Oxygen Demand (B.O.D.) incubator at the Embrapa Gado de Corte, Campo Grande-MS in controlled conditions (28°C, 80–90% relative humidity and 12 h photoperiod) for egg laying. Larvae were used in the LPT two weeks after they hatched from the eggs. All chemical acaricides were formulated in emulsified concentration for posterior water dilution. Results expressed in average percentage of larval mortality were as follows: Imidacloprid 68.8 µg a.i. (99%), Fipronil 2.0 µg a.i. (96%), Spinosad 10.0 µg a.i. (94%), Indoxacarb 35.0 µg a.i. (91%), being the Imidacloprid-induced larval mortality significantly higher than the Indoxacarb one. It can be concluded that all the chemical acaricides tested were effective *in vitro* against larvae of *R. microplus*. However, it is worth stressed that the neonicotinoid insecticide Imidacloprid, the bioinsecticide Spinosad and the pro-insecticide Indoxacarb bear well known low toxicity and cause less environmental impact.

Key words: acaricides, larval packet test, *Rhipicephalus microplus*

Financial support: CNPq, Dexter Latina Indústria e Comércio de Produtos Químicos