ABSTRACT

Entomopathogenic nematodes of genera *Steinernema* and *Heterorhabditis* were successfully used as biological control in agriculture. Therefore, enhancing their efficacy was the aim of the present research, using three simple methods. In the first one, continuous culturing of nematode juveniles, under optimum condition of temperature and nematode density, was performed and new progenies of ***Steinernema riobrave*** and ***Heterorhabditis bacteriophora*** (ISK-2 strains), with high quality, were obtained and, thus, maximizing nematode efficacy with high conservation of energy reserves:

- High content of total lipid, total protein, total carbohydrate and glycogen percentage
- High penetration rate and virulence than in the original nematodes.
- A decline in the lipase, protease, amylase and invertase activities in the new progenies of the two species.

In the second, *S. riobrave* nematodes penetrating the insect host at different intervals after infection were selected. In the third method, *S. riobrave* early penetrating the host (at the first hour of infection) were selected. Also, new progenies recording high penetration rate and high mortality to *G.mellonella* were obtained.

Key words

Entomopathogenic nematode - *Steinernema riobrave* - *Heterorhabditis bacteriophora* - *Galleria mellonella* - Energy reserves - Penetration rate - Mortality - Enhancing - Efficacy

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