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## TRIBOLIUM INFORMATION BULLETIN



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Material contributed by workers on Tribolium and other Coleoptera

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A simple technique to relieve *Tribolium castaneum* (Coleoptera: Tenebrionidae) of *Acarophenax tribolii* (Acarina: Pyemotidae)

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Acarophenax tribolii is a common parasitic mite of different stored product beetles (Lepesme, 1944). Young females of this species are found on adult beetles and their pupae, especially where the cuticle is thin, on the inter-segmental membranes and, on the adult, on the large area of soft cuticle beneath the flight wings (Evans et al., 1961). We have observed, in case of big infestation, till about hundred of adult mites on the rear dorsal extremity of the Tribolium castaneum adult elytras and between leg articulations. After feeding, young female leaves the host and commences to feed on the eggs of the beetle until after a few days her body becomes so distended that she is incapable of walking. On the third day, the gravid female dies and from 4-14 young females emerge through the enlarged genital orifice. The single male produced by the female fecundates these young females before they leave the parent body (Evans et al., 1961). This acari, responsible of the destruction of newly laid eggs, is therefore very damaging in laboratory populations.

We have experimented a method to eliminate this acari from T. castaneum rears. Infested adults were isolated in an open Petri dish. The dishes were placed during 10 hours in a dessicator containing a 5% formol solution. This first treatment permitted to kill all the acari present upon the beetles and then to diminish the eggs destruction. The adults were transferred in fresh rearing medium (wheat flour and brewers yeast - 10/1) for 24 hours. After these laying period, eggs were isolated and placed in the above disinfection conditions during 6 hours. Next this second treatment, eggs were incubated in a fresh rearing medium at  $30 \pm 3$ °C and  $60 \pm 5$ % HR. A new culture could then begin.

All the material used and incubators were also disinfected by maintaining it at 60°C during 12 hours.

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## References

Lepesme, P. (1944). Les coléoptères des denrées alimentaires et des produits industriels entreposés. Encyclopédie Entomologique, Série A, XXII. Ed. Lechevalier, Paris. pp. 173-178.

Evans, G. O., Sheals, J. G. & MacFarlane, D. (1961). The terrestral acari of the British isles. Volume I: An introduction to their morphology, biology and classification. Ed. Adlard and son, Dorking. pp. 173-174.