

First record of *Tyrophagus putrescentiae* (Schrank) (Acari: Acaridae) in soybean plants under no tillage in Minas Gerais, Brazil

Primeiro registro de *Tyrophagus putrescentiae* (Schrank) (Acari: Acaridae) em plantas de soja sob plantio direto em Minas Gerais, Brasil

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- NOTE -

ABSTRACT

Tyrophagus putrescentiae (Schrank) is a mite species of economic and medical-veterinary importance, usually found associated with stored products. Presence of this mite was observed in the stems of soybean [*Glycine max* (L.) Merr.] plants originated from a under non tillage commercial crop in 2003/2004, in the municipal district of Unaí, State of Minas Gerais, Brazil. This is the first record of *T. putrescentiae* occurring in soybean plants under field conditions in the world.

Key words: mite, *Glycine max*, Astigmata, South America.

RESUMO

Tyrophagus putrescentiae (Schrank) é uma espécie de ácaro de importância econômica e médico-veterinária, comumente encontrada associada a produtos armazenados. A presença desse ácaro foi constatada no interior de hastes de plantas de soja [*Glycine max* (L.) Merr.] sob plantio direto provenientes de um plantio comercial no município de Unaí, Estado de Minas Gerais, Brasil, na safra 2003/2004. Este é o primeiro registro de *T. putrescentiae* em plantas de soja, em condições de campo, no mundo.

Palavras-chave: ácaro, *Glycine max*, Astigmata, América do Sul.

Tyrophagus putrescentiae (Schrank) (Acari: Acaridae) is one of the main mite species present in several stored products causing economic losses due to the reduction on the nutritional value of grains and

the germinative power of seeds, besides the dissemination of fungi and bacteria (KRANTZ, 1955; HUGHES, 1976; HUBERT et al., 2003).

In the 2003/2004 harvest in the county of Unaí/MG, soybean plants [*Glycine max* (L.) Merr.] cv. Monsoy 8001 82 days after sowing under no-tillage system presented staining at the roots crown, few roots, leaves with mosaic aspect and posterior wilting and death of the plant. These symptoms were observed in irregular patch in all cultivated area. Samples obtained from roots and from the aerial part of these plants were sent to the Laboratory of Phytopathology, Embrapa Cerrados, for a possible isolation of phytopathogenic agents (bacteria and/or fungi) without, however, revealing the presence of none of these agents. An expressive number of mites in longitudinal vegetation were observed inside the stems of plants. These mites were collected, fixed in 70% alcohol, preserved in microscopy slide in Hoyer medium and then identified by Dr. Barry M. O'Connor, from the Zoology Museum of the University of Michigan (USA) as belonging to the *T. putrescentiae* species.

Although widely known as pests in storage conditions, several *Tyrophagus* species have been observed in crops, infesting and causing damage in the aerial part of plants, for example *T. neiswanderi* Johnston & Bruce in solanaceous in Switzerland

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(FISCHER, 1993), in orchids in New Zealand (MARTIN & WORKMAN, 1988) and in flowers in Japan (EHARA & GOTOH, 2000); *T. similis* Volgin in melon seeds in Italy (LAFFI, 1980); *T. dimidiatus* (Hermann) in spinach in the USA (LANGE & BACON, 1958); *T. longior* (Gervais) in ornamental plants in England (BUXTON, 1989); *T. similis*, *T. perniciosus* Zachvatkin and *T. putrescentiae* in cucurbitaceous and solanaceous in Japan (EHARA & GOTOH, 2000).

In Brazil, *T. putrescentiae* has been reported infesting stored products and fungi culture mediums and insect diets in laboratory (FLECHTMANN, 1986; FRANZOLIN & BAGGIO, 2000). This mite was also found in pineapple crops in the state of Bahia, but presented no relevance as pest (SANCHES & FLECHTMANN, 1982).

It is possible that the damages observed in soybean plants have been caused by primary *T. putrescentiae* infestation, as observed for several species from the same genus, or that the mite infestation is secondary, with plant colonization occurring after the attack of some other organism, once several mite species are opportunistic and invade vegetal tissues or stored products based on the primary attack of other arthropods, fungi or bacteria.

The occurrence of *T. putrescentiae* in field suggests the possibility that seeds previously infected might have been the source of the field infestation. It is also possible that this species could be transported to the grain storage site during harvest, where mite populations would find favorable temperature and humidity conditions for their development, especially in the period from December to April (FRANZOLIN & BAGGIO, 2000).

The no-tillage system promotes the accumulation of organic matter and the increase on the relative humidity in the microregion close to the soil (SALTON & MIELNICZUK 1995; COSTA et al., 2004). These factors may contribute for the increase on *T. putrescentiae* populations that would infest soybean plants. This is the first record of *T. putrescentiae* occurring in soybean plants under field conditions in the world.

ACKNOWLEDGMENTS

To Pedro Henrique de Macedo Bernardes Jr. (Coagril – Unaf, MG) by collection and sent of soybean samples, to Dra. Maria José Davila Charchar (Embrapa Cerrados, Planaltina, DF) by phytopathological analysis and to Dr. Barry M. O'Connor (Museum of Zoology, University of Michigan, USA) by the taxonomic identification of mites.

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