

## Mites (Acari) important in different agroecosystems and their control in Romania\*

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### Abstract

Mite problems in different agroecosystems in Romania are presented. Of all phytophagous mites known in the country, four species are found on a wide range of crops, with the two-spotted spider mite, *Tetranychus urticae* Koch, and the broad mite, *Polyphagotarsonemus latus* (Banks), being the most important. The broad mite is difficult to control, but acaricides registered in Romania have provided effective control of this species. Reduction of highly toxic pesticide residues in the environment has been considered important in the country. That could be approached by first reducing the amount of pesticides applied on agricultural land, and second, by finding new pesticides with less toxic active ingredients. This has resulted in reduced numbers of the main groups of pesticides, commercial products and number of active substances. The number of available commercial products varied from 12 in 1972–1979 to five in 1980–1989, ten in 1990–1996, four in 1997–2004 and six in 2010, based on five active ingredients. The causes of the decreasing numbers of acaricide products or active ingredients were the reduced availability of several active ingredients due to toxicological or environmental reasons and the high registration cost. Only three acaricides (Envidor 240 SC, Nissorun 10 WP and Omite 570 EC) and one insecticide/acaricide (Seizer 10 EC) are at present commonly used in Romanian agriculture. At the same time, from the economic point of view, biological control is impractical if not impossible to be applied in commercial crop production under Romanian economical conditions of farmers in absence of subsidies. EU and Romanian policies are discussed.

**Key words:** Acaricides, chemical control, mites importance, plant pest.

### Introduction

Thirty one mite species have been reported from Romanian agroecosystems (Manolache & Boguleanu, 1978). Of all phytophagous mites known in the country, four are found on a range of crops, being the two-spotted spider mite, *Tetranychus urticae* Koch (Tetranychidae), and the broad mite, *Polyphagotarsonemus latus* (Banks) (Tarsonemidae), the most important. Of other species, four are found on small grains, to which they do not cause major problems; three, on ornamentals; 15, in orchards, all very important, two being polyphagous and 13 specific to this type of agroecosystem; and five, on grape vine (Boguleanu, 1988), only two of which are usually controlled with chemicals (Perju *et al.*, 2001). The control of *P. latus* is quite difficult, but acaricides registered in Romania have provided effective control of this as well as of other pest mites (Paulian *et al.*, 1977; Bărbulescu *et al.*, 2002).

### Use of plant protection products in Romania

The number of acaricides used in Romania varied considerably in the last 40 years. Twelve were in use during 1972–1979, five in 1980–1989, ten in 1990–1996, four in 1997–2004 and six (based on five active ingredients) in 2010. The last acaricide to be registered in the country was Envidor<sup>®</sup> 240 SC (spirodiclofen 240 g/L), in 2005. Despite the tendency for reduction in the number of used, expenditures with chemicals has tended to increase. According to data provided by A. Alexandri (Alcedo Ltd.), the total amount of pesticides recently commercialized in Romania corresponded to 110 million Euros in 2003, 120 million Euros in 2004, 130 million Euros in 2005, 136 million Euros in