



Application of phytoseiid mites in China and an analysis of its problems*

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Abstract

Mass application of pesticides has caused more severe damage to plants by small-sized plant-juice-sucking pest insects and mites, for whose control predatory mites embrace great potential. In China, a large quantity of research work has been conducted in their biology, ecology, and mass rearing as well as application of predatory mites in biological control. Some issues existing in the application of predatory mites in China is discussed in this article.

Key words: predatory mites; Phytoseiidae; application

Introduction

It dates back to 1873 when mites first acted as biological control agents. For controlling *Phylloxera vitifoliae*, Riley introduced *Tyroglyphus phylloxerae*¹ from USA into France, though it was not brought into good play. At the beginning of 20th century, Parrott (1906) discovered that tight correlation existed between a predacious mite *Seius pomi* (Parrott)² and the gall mite which damaged apple and pear. Since then, phytoseiid mites have been taken notice of as very important predators of spider mites and gall mites.

It was in the forties of last century that scientists' great interest was aroused after spider mites' rampancy caused by the mass use of DDT and extreme success has been achieved by applying predatory mites to control spider mites, in particular after the event of successfully using a phytoseiid mite (*Phytoseiulus persimilis*), which was comparable with the success in the release of the Australian ladybird in California controlling *Icerya purchasi* in 1888 (Xin, 1985). After 1980s, three main factors—(1) the finding of alternative food such as flour mites (Acaridae) for rearing predatory mites *Neoseiulus barkeri* and *N. cucumeris*, (2) the finding of the non-diapause strain of *N. cucumeris* and (3) the success in screening pesticide resistance strains of predatory mite *Galendromus occidentalis*—led to rapid development in the application and profound research of predatory mites.

Mites as biological control agents include those from about 30 families of Acari, mainly the Phytoseiidae, Laelapidae, Trombidiidae, Pyemotidae and so on (Xin, 1982, 1984, 1985; Liang *et al.*,

1. This species was treated as *Rhizoglyphus phylloxerae* by Michael (1903), which was followed by Diaz *et al.* (2004)
2. Now *Metaseiulus pomi* (Phytoseiidae)