

Pests of *Annona cherimola* (Annonaceae) in a Newly Introduced Area, with Respect to their Host Range

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ABSTRACT

Arthropod pests of *Annona cherimola* in Japan were surveyed to find out if there are any economically important pests, and to examine if host shift or host range expansion of specialist herbivores from native plants to cherimoya has occurred over 14 y of cultivation in Japan. 21 insect and mite species were found by field observations and literature examination. The number of individuals for species found in the field survey was generally low, and thus none of them was considered economically important. All 21 species were polyphagous; the least number of recorded host families was six. The proportion of polyphagous species was significantly higher than the mean proportion on other crops. The failure to detect host shift or host range expansion of stenophagous species to cherimoya may be due to the lack of indigenous annonaceous plants on the Japanese main islands, as well as the short time from the first introduction of cherimoya to Japan.

Key words: Cherimoya, pest community, seasonal occurrence, host range, herbivore

INTRODUCTION

Host range of herbivorous insects varies greatly between species (Bernays & Graham, 1988; Dyer, 1995). Thus, a generalist species may exploit plants of many families whereas a specialist exploits only one plant species, genus or family. Therefore, it is expected that indigenous or resident polyphagous arthropod species might exploit an exotic plant species when the latter is introduced into a new area. On the other hand, a specialist species is unlikely to accept a novel plant species immediately.

Host shift or host-range expansions in mono- or stenophagous herbivores are evolutionary processes (Singer *et al.*, 1993; Dobler *et al.*, 1996; Thompson, 1998).