

A review of the biology of the invasive harlequin ladybird *Harmonia axyridis* (Pallas, 1773) (Coleoptera, Coccinellidae)

Arnstein Staverløkk, May-Guri Sæthre & Eline B. Hågvar

Staverløkk, A., Sæthre, M.-G. & Hågvar, E. B. 2007. A review of the biology of the invasive harlequin ladybird *Harmonia axyridis* (Pallas, 1773) (Coleoptera, Coccinellidae). *Norw. J. Entomol.* 54, 97-104.

A review of the biology of the invasive ladybird, *Harmonia axyridis* Pallas 1773, is given. The species was recorded in 2006 for the first time in Norway, and its potential for establishment in Norway is discussed. The specimen was found on horticultural plants imported from Aalsmeer in the Netherlands to Oslo, Norway. *H. axyridis* originates from East-Asia. The species is known to be a voracious predator on aphids and has been extensively used as a biological control agent in both North America and Europe. In later years, however, a number of negative impacts on the environment and biodiversity have been reported. The species was assessed as a potential bio-control agent for use in Norwegian greenhouses in 2001. The assessment was negative with respect to import and commercial use in Norway. It was concluded that *H. axyridis* might survive and become established outdoors and thereby pose a risk to the environment. Recent experiences from the UK have shown that *H. axyridis* compasses several of the traits characterizing a successful invasive alien species. More record of the species in Norway may succeed after this first occurrence. It is likely that this species will survive outdoors, at least in the southern parts of Norway.

Key words: *Harmonia axyridis*, invasive alien species, first record in Norway, global trade, biological control, biodiversity.

Arnstein Staverløkk & May-Guri Sæthre, Bioforsk, Plant Health and Plant Protection Division, Department of Entomology and Nematology, Høgskolev. 7, N-1432 Ås, Norway. (Contact: Dr. May-Guri Sæthre. E-Mail: may-guri.saethre@bioforsk.no)

Eline B. Hågvar, Norwegian University of Life Sciences (UMB), Department of Ecology and Natural Resource Management (INA), POBox 5003, NO-1432 Ås, Norway.

INTRODUCTION

A study aiming to get an overview of the amount and diversity of organisms/species entering Norway as stowaways on plant commodities imported for outdoor use was conducted in 2006. Samples from consignments of horticultural plants newly imported from different countries in Europe were examined and investigated as part of a master thesis (Staverløkk 2006). During this study the

invasive alien ladybird *Harmonia axyridis* Pallas 1773 (Coleoptera: Coccinellidae) was recorded. This beetle is of great concern in many European countries. The species is synonymous to *Leis axyridis* (Iablokof-Khnzorian 1982), and is known under several common names like Multicoloured Asian Ladybird (US), Halloween Beetle (US) and Harlequin ladybird (UK).

H. axyridis originates from Central- and East Asia