

Invasive alien pests, weeds and diseases in Brandenburg and their ways of introduction

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INTRODUCTION

The aim of the present paper is to review the development over the past 50 years of newly introduced or immigrated organisms within the territory of Brandenburg (formed from the three former counties surrounding the capital, Berlin). Alien species may become more important over the next 150 years, during which time many may often become established before their invasive significance is recognized (Kegel, 2001).

MATERIAL AND SOURCES

The archives, publications and accumulated knowledge of staff within the official plant protection body, information from entomologists, botanists or weed scientists, and recently registered cases in the authors' offices are all sources of information on new, harmful organisms confirmed or thought to be (or to become) invasive species in Brandenburg. More than ten years after major political and economical changes, it has become increasingly necessary to collect and manage such data. Over the next ten years or so, the knowledge of a whole generation of plant protection specialists and biologists is in danger of being lost. It is essential, therefore, to continue their earlier work, and to monitor invasive alien species with the collaboration of specialists in biology, plant protection and nature conservation.

RESULTS

In recent years, invasive species (e.g. those in Table 1) have become more and more linked to nurseries and public green areas, especially close to the urban-commercial centre of Berlin (region Berlin-Potsdam), associated with recent climatic changes and the special sub-continental climatic character of Brandenburg. In this region, there are several introductory pathways:

- increasing worldwide transportation, especially the plant trade from eastern and south-eastern Europe and Asia;
- traffic (including aid and military activities) and tourism;
- wind and surface-water transportation;
- freeways, railways, wind channels parallel to the rivers Elbe (Elbe valley = 'Bohemia-Saxonian Gate'), Neisse and Oder;
- garden exhibitions (BuGa, LaGa, Iga).

Table 1. Examples of important invasive or potentially invasive species in Brandenburg.

Pests (*), weeds (#), pathogens (†)	Year	Host(s)	Means of introduction
<i>Helicoverpa armigera</i> *	2002	vegetables	migrating moths; imported vegetables
<i>Cameraria ohridella</i> *	1997	<i>Acer</i> spp., <i>Aesculus</i> spp.	traffic, wind, water
<i>Phyllonorycter issikii</i> *	2001	<i>Tilia</i> spp.	wind, trade
<i>Cacoecimorpha pronubana</i> *	2003; 2004	ornamentals, <i>Prunus laurocerasus</i>	tree-nursery trade
<i>Argyresthia thuiella</i> *	1975	<i>Thuja occidentalis</i>	tree-nursery trade
<i>Argyresthia trifasciata</i> *	1988	<i>Chamaecyparis</i> , <i>Juniperus</i> , <i>Thuja</i>	tree-nursery trade
<i>Quadrastipidiotus perniciosus</i> *	pre- 2000	<i>Malus domestica</i>	tree-nursery trade
<i>Campylopus introflexus</i> #	1967	dunes, edge of forest	?
<i>Heracleum mantegazzianum</i> #	1974	farm/grassland, private gardens, field margins	food production; ornamental plants
<i>Reynoutria japonica</i> #	post- 1970	private gardens, river banks, field margins	bomb sites; soil/waste tips etc.
<i>Phytophthora alni</i> †	1997/ 1998	<i>Alnus glutinosa</i>	hybridization; surface water
<i>Guignardia aesculi</i> †	1980	<i>Aesculus</i> × <i>carnea</i> , <i>A. hippocastanum</i>	tree-nursery trade
<i>Erwinia amylovora</i> †	1972	fruit trees and other Rosaceae	tree-nursery trade, birds, bees, traffic
Plum Pox Virus †	1961; 1978	<i>Prunus</i> spp.	tree-nursery trade

In the past, most ‘classical’ invasive (primarily glasshouse) species have arrived in eastern Germany from Asia or America via the Netherlands, western Germany and the UK. In recent years, however, invasive species arriving from or via the Balkans and other East-European states have gained in importance.

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