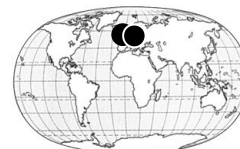


Gabriella WOŹNIAK<sup>1</sup>, Eleanor V.J. COHN<sup>2</sup>, Edyta SIERKA<sup>1</sup>

<sup>1</sup> University of Silesia, Department of Geobotany and Nature Protection, Jagiellońska 28,  
40-032 Katowice, Poland

<sup>2</sup> WV1 1SB, Wulfruna Street, University of Wolverhampton, School of Applied Science,  
Wolverhampton, England



## **BIOTIC (FLORISTIC) AND ABIOTIC CONDITIONS ASSOCIATED WITH *SOLIDAGO CANADENSIS* OCCURRENCE ON POST-INDUSTRIAL SITES (COAL MINE SEDIMENTATION POOLS) (UPPER SILESIA, POLAND)**

Syntaxonomically *Solidago canadensis* is considered as diagnostic species for the Ass. *Rudbeckio-Solidaginetum* R.Tx. et Raabe 1950 (*Artemisietea vulgaris* class). Its phytocoenoses are recorded along wide rivers valleys (e.g. the Vistula river). However, *S. canadensis* is even more widespread in many ruderal habitats (abandoned arable lands and abandoned meadows) in Poland and it has also been recorded on post-industrial sites.

This paper presents a study of the occurrence of this alien species on coalmine sedimentation pools in Upper Silesia. Sedimentation pools consist of a very specific kind of substrate. The plants established there grow on coal dust of high mineral content. Floristic data were collected using Braun-Blanquet methodology from stands where *Solidago canadensis* occurred with a cover abundance of 10% or more. Substratum samples were taken for chemical analysis and other environmental data were also recorded. The types of vegetation in which *S. canadensis* occurs and its most constant associated species are described. Relationships between *S. canadensis* vegetation, environmental features and substratum characteristics are examined using multivariate analysis. Comparisons are made between situations on coalmine sedimentation pools where *S. canadensis* occurs and does not occur.

The analysis of the vegetation samples showed that *S. canadensis* co-occurs along with species typical for meadow of *Molinio-Arrhenetheretea*, ruderal plants of *Artemisietea vulgaris* and some species of *Stellarietea mediae* class. There are some phytocoenoses that are dominated exclusively or co-dominated by *S. canadensis*.

keywords: *Solidago*, spontaneous vegetation, post-industrial sites, Upper Silesia