

**GERMINATION OF GRASS AND PAPILIONACEOUS SEEDS UNDER  
CONDITIONS OF WATER EXTRACTS FROM *POA PRATENSIS* LEAVES  
SAMPLES AT DIFFERENT DEVELOPMENT STAGES.****Lipińska H., Harkot W.***Department of Grassland, Agricultural University, 15 Akademicka St, 20-950 Lublin, Poland.*

Floristic impoverishment of meadow habitats is mainly attributed to intensive performance systems or giving up the cultivation. However, also unfavorable environmental changes including biochemical interactions of plants (allelopathy) are important cause of such situation. Allelopathic agent levels in plants genetically determined affect their amounts to be released. Species allelopathic potential varies during a year, mainly due to wide range of outer stress factors, but also plant's age or its organs have an important effect on its level. Thus, undertaken studies were aimed to explain whether and to what extent allelopathic substances present in water extracts from *Poa pratensis* leaves collected at various development stages, since spring till autumn, affected the initial growth and development of some grass and papilionaceous species seedlings.

In three-year laboratory study, allelopathic activity was determined on a base of inhibition or stimulation of *Lolium perenne*, *Phleum pratense* and *Trifolium repens* (often sown in mixtures with *Poa pratensis*) seed germination and evaluation of root system length as well as seedling height.

Tests revealed negative influence of water extracts from *Poa pratensis* leaves on seed germination, root elongation and seedling growth of studied grass species. Their sensitivity towards water extract action was different. Values of threshold concentrations of extracts from *Poa pratensis* leaves, after application of which inhibition of initial growth and development of tested plants took place, were different as well.

Achieved results point out to great differences of seedling height and root length at tested species depending on the date of *Poa pratensis* leaves collection. Therefore, it can be concluded that weather conditions and plant's development stage can significant influence on accumulation and release of phytotoxins from plant's tissues.