

SUMMARY

Key words: Rust fungi, Puccinia, Uromyces, Ranunculus, Ficaria verna, molecular identification, rDNA

The usability of morphological and molecular markers for the identification of rusts (*Uredinales*) with the aecial stage on *Ranunculus* spp. and *Ficaria verna* was studied. The next aim was to evaluate the taxonomic status of these rust species. Fresh and herbarium material of aecia together with uredia and telia on specific grass hosts were used for analysis.

Phylogenetic analysis of nuclear ribosomal DNA sequences from 42 (ITS) and 30 (LSU) collections grouped into distinct clades supporting separation of aecial collections into distinct species: *Puccinia perplexans*, *P. magnusiana*, *Uromyces dactylidis* and *U. poae*.

All aecia collected on *Ficaria verna* belong to *U. poae* and aecia collected on *Ranunculus acris* belong to *Puccinia perplexans*. Aecia from *R. repens* were more diversified.

Some other molecular methods (RAPD, rep-PCR, PCR-RFLP, ISSR) were proved for identification of rust species. The best results gave ISSR method.

Moreover the morphological variation in aeciospores ornamentation and dimension was studied using the scanning electron and optical microscopy. No special features were found in spore ornamentation. Only *U. poae* differs significantly from aeciospores of other species. The molecular characters are more useful and precise for the determination of the aecial stages belonging to studied rust species.