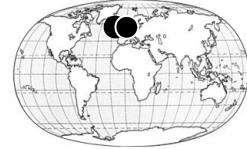


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GENETIC DIVERSITY, CYTOLOGY AND MORPHOLOGY IN THE INVASIVE ALIEN COMPLEX *FALLOPIA* ADANS. (POLYGONACEAE) IN BELGIUM

We undertook a morphogenetic and cytological study of the Genus *Fallopia* in Belgium. The objectives were to highlight the morphogenetic variability of clones and to specify the taxonomic relationships between species and hybrids. 139 samples of rhizomes were collected in five regions in Belgium and set in culture. The studied species were *Fallopia* × *conollyana*, *Fallopia japonica*, *Fallopia baldschuanica*, *Fallopia* × *bohemica* and *Fallopia sachalinensis*. The cytological study was undertaken in order to know the chromosomal number of the species and was used as a basis for a flow cytometric analysis for the determination of the DNA ploidy level of a great number of clones. This cytological study was undertaken on roots tips in mitotic division. 13 parental species (5 *F. japonica*, 7 hybrids, 1 *F. sachalinensis*) and 12 seedlings resulting from the germination of the seeds (11 on *F. japonica* and 1 on *F. sachalinensis*) were studied. The results showed that all the clones of *F. japonica* are octoploid. *F. sachalinensis* is tetraploid and the hybrids are hexaploid. Two shapes of seedlings are observed on *F. japonica*, *Fallopia* × *conollyana* and other seedlings with a variable chromosomal number ($2n = 77-110$). The flow cytometric analysis was undertaken on 75 clones (32 hybrids, 39 *F. japonica*, 2 *F. sachalinensis*, 2 *F. baldschuanica*). *Fallopia sachalinensis* was the reference clone. The results showed a heterogeneous repartition of cytotypes with a greater dominance of hybrids. The mean ratio individual reference clone was 0,75 for *F. baldschuanica*, 1,6 for hybrids and 2,17 for *F. japonica*. Currently, the genetic study undertaken will highlight the polymorphism at the genetic and genotype level and give the number of introduction to Belgium. The techniques used were of type RAPD, PCR-RFLP on cpDNA. A morphological study will make it possible to differentiate the species thanks to measurement from features on a series of individuals.

keywords: *Fallopia*, cytology, morphology, RAPD, PCR-RFLP on cpDNA, flow cytometric analysis