

## **Characterization of the rediscovered *Cyperus papyrus* L. dominating a stand on the bank of the Damietta branch of the Nile Delta, Egypt; based on isozyme studies**

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**Abstract** – *Cyperus papyrus* L. (Cyperaceae) was rediscovered dominating a stand on the eastern bank of the Damietta Nile branch, Egypt by the second author in July, 2000. Isozyme variation among twelve *Cyperus papyrus* accessions were studied to evaluate the probable origin of the rediscovered stand. Among the studied accessions four were natural and eight cultivated. Three of the cultivated accessions represented the different genomic *C. papyrus* populations in Egypt – Egyptian, Ethiopian, and French. The other, five, accessions are represented by different soil type and water regime. Six enzymes were screened, three of which showing polymorphism between the studied accessions. The studied enzymes are: esterase (EST), peroxidase (PRX), and glutamate oxalo-acetate transaminase (GOT). The genetic variability components were studied by the Statistica computer program based on the variability on isozyme pattern. The results supported that the origin of the rediscovered natural *C. papyrus* stand is Ethiopian. However, divergent variations were observed between the rediscovered accessions and both of Egyptian and French genotypes. Although tremendous morphological diversity exists between the studied twelve *C. papyrus* accessions, no infra-specific grouping was recommended based on isozyme studies. Water stress and soil type are the major limiting factors for the *C. papyrus* growth.

**Key words:** isozyme, papyrus, Egyptian flora, esterase, peroxidase, glutamate oxalo-acetate transaminase.