

Differential gene expression patterns in the autogamous plant *Hordeum euclaston* (Poaceae)

J.E. Georg-Kraemer^{1,3}, C.A.S. Ferreira^{2,3} and S.S. Cavalli³

¹Laboratório da Biodiversidade Vegetal,
Programa de Pós-Graduação em Genética e Toxicologia Aplicada,
Universidade Luterana do Brasil, Canoas, RS, Brasil

²Departamento de Biologia Celular e Molecular, Faculdade de Biociências,
Pontifícia Universidade Católica, Porto Alegre, RS, Brasil

³Departamento de Genética, Universidade Federal do Rio Grande do Sul,
Porto Alegre, RS, Brasil

Corresponding author: J.E. Georg-Kraemer

E-mail: janaina.kraemer@terra.com.br

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ABSTRACT. Sib-seedlings of 95 strains of the strictly autogamous grass *Hordeum euclaston* were analyzed by horizontal polyacrylamide gel electrophoresis for four isoenzyme systems at a specific ontogenetic stage. We found differences in the activity of some genes among individuals of this species. Hence, an ontogenetic analysis was carried out to investigate 12 strains at five ontogenetic stages, to determine the patterns of expression of these genes during development. The differences in the presence versus absence of certain isoenzyme bands may be due to differential regulatory activation in response to environmental differences, as all plants showed the same structural genes, although these genes were active in different tissues and/or times of development. These results indicate the importance of differential gene activation in the metabolic phenotype variability of this strictly autogamous, highly homozygous species. The same structural alleles for isoenzymes showed

the active form of the enzymes (phenotypic expression) to be present in different tissues and/or stages of development. Differential isoenzyme gene activation was shown to be directly responsible for the enzymatic variability (metabolic phenotype) presented by the plants, which seem to possess almost no heterozygosis.

Key words: Gene expression; Ontogenetic stages; Genetic variability; Isoenzymes