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CLONING OF PUTATIVE SEED STORAGE PROTEIN GENES OF PEARL MILLET (*Pennisetum glaucum*)

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Gene prospection is an important strategy of biotechnology for the identification of genes, promoters and regulatory sequences for the potential use in the improvement of biological processes in plants. In this work we report a prospection study on storage genes and promoters in Pearl Millet. Better knowledge about storage polypeptides and their genes in graminea species can lead to the identification of genes potentially useful for the manipulation of grain quality in economically important cereal species. In previous studies at EMBRAPA/CNPMS, comparative analyses of seed proteins of maize, sorghum, pearl millet, teosinte and tripsacum showed that there are similarities amongst the polypeptides of these species. These results were reinforced by immunological analyses ("western blotting") with polyclonal antibodies raised against maize proteins (alpha-, beta- and gamma-zeins), that showed cross-reactions between polypeptides with equivalent *Mr* and solubility in the species analysed. Based on these similarities we initiated the isolation of storage protein genes in a Pearl Millet genomic library using cDNA probes coding for alpha-, beta-, gamma- and delta-zeins from maize. Putative storage protein genomic clones have been isolated and they have been characterized by restriction enzymes. The results will help to direct our work on identification, cloning and characterization of genes and regulatory sequences potentially useful for the improvement of cereal grain quality through genetic engineering.

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