IN VITRO SELECTION OF MODIFIED FATTY ACID COMPOSITION IN ANTHER-DERIVED EMBRYO CULTURES OF B. CAMPESTRIS AND B. NAPUS

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ABSTRACT

Fatty acid content was determined on microspore-derived embryo cotyledons, filament callus, seeds, seedling cotyledons, leaves, stems and anthers from low and high erucic acid cultivars of B. campestris and B. napus. Erucic acid was detected in the seeds, seedling cotyledon and microspore-derived embryo cotyledons of the high erucic acid cultivar. This indicated that a differentiated cotyledonous structure was a prerequisite for erucic acid biosynthesis. Anthers from F_1 plants (yellow seeded, high erucate X dark seeded, zero erucate) were cultured on a modified B5 medium and a single cotyledon from the resulting embryos was analyzed for fatty acid composition. Plantlets were regenerated from selected double haploid genotypes and grown to maturity. Analysis of seed from these plants confirmed the microspore origin and homozygosity of anther-derived plants in culture. The efficiency of the anther culture method in selecting new recombinants will be considered by comparing segregation frequencies in F_1 anther cultures with F_2 individuals originating from crosses involving B. campestris and B.napus.