

عنوان مقاله:

Biochemical, Mineral, and Enzymatic Properties of Date Fruits (Barhee and Piyarom Cultivars) as Influenced by Different Pollen Sources

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خلاصه مقاله:

The present study investigated the effects of five Iranian male palm pollen grains as pollen sources on the fruit quality of two cultivars, 'Barhee' and 'Piyarom' (offshoot-derived and tissue culture-derived). The biochemical and enzymatic properties of fruit dates at the Tamar stage (full maturity) enabled the evaluation of pollen source effects on fruit quality. The research location was Jahrom Research Station, Fars Province, Iran, from ۲۰۱۸ to ۲۰۱۹. The pollen sources were genotypes '۷۰۰۷' (control), '۷۰۰۵', '۷۰۱۳', '۷۰۳۰', and 'B۱۱'. Pollinated with ۷۰۱۳ pollen, Offshoot-derived (OFS) trees of the 'Barhee' cultivar had the highest fruit flesh pH (۷.۰۷). In contrast, the lowest pH value (۵.۸۴) occurred in fruits of Tissue Culture-Derived (TCD) trees of the 'Piyarom' pollinated with the ۷۰۳۰. In the OFS 'Piyarom' the pollen source ۷۰۰۷ caused the highest fruit TSS (۶۸.۸۳%). When pollinated with the B۱۱, 'Barhee' had the lowest fruit TSS (۴۴.۹۰%). In TCD 'Piyarom' trees, the ۷۰۳۰ pollen caused the highest TSS (۶۲.۵۳%). By receiving pollen from B۱۱, the 'Barhee' produced fruits with the lowest TSS (۴۴.۲۳%). Regardless of being OFS or TCD and of the pollen source, on average, 'Barhee' produced fruits with more moisture content than fruits of the 'Piyarom'. In OFS 'Piyarom' trees, pollen from the ۷۰۳۰ caused the highest Fruit Dry Matter (FDM) (۸۷.۴۰%), whereas the 'Barhee' pollinated with the ۷۰۰۷ produced fruits with the lowest FDM (۶۷.۱۵%). In TCD 'Piyarom' palms, pollen from the ۷۰۳۰ caused the highest FDM (۸۵.۱۹%), compared to the 'Barhee' pollinated with the ۷۰۱۳, which showed the lowest FDM (۶۷.۸۷%). Pollen from the ۷۰۳۰ caused the highest total sugar content in the fruits of OFS and TCD 'Piyarom' trees. The fruits of OFS 'Piyarom' trees had more Fe and Polyphenol Oxidase (PPO) activity than TCD 'Piyarom' trees.

کلمات کلیدی:

Artificial pollination, Fruit quality, Pollen germination, Phoenix dactylifera L

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