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EVALUATION OF COLD TOLERANCE OF ALMOND GENOTYPES AND VARIETIES IN OPEN FLOWER STAGE

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Frost damage to the flowers and early developing fruits is one of the most limiting factors in almondcultivation regions of the world. This study was undertaken to help understand almond response to frostdamage at different phenological stages, in order to develop criteria for the selection of cultivars withimproved resistance to frost on the basis of lab experiment with temperature fall (-2.5°C)was occurred controlled. In this stage, most early, medium and late flowering almonds damaged, but damageseverity was different. Obviously, there was genetic diversity for cold resistant among genotypes andvarieties of almond. Frost damage percentage of cultivars and genotypes after frost was measured at least100 flowers of each cultivar with 3 replications. Results showed that the severity of frost damage wasinfluenced by genotypes of almond and stage of flower bud development and other indices such as leafingstage. After the evaluating the 30 almond selections, based on flowering time and late frost spring resistance, they were divided into high cold resistant; medium cold resistant; low cold resistant and very low coldresistance. Also, it was found that Genotypes that had the more resistant to frost damage had less ion leakage. It is suggested that ion leakage may serve as indicator of frost tolerance in almond breeding material.

Keywords: spring frost, frost damage, flower hardiness, ion leakage, almond