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EVALUATION OF SUPERABSORBENT AND MULCH IN RAINFED ALMOND ORCHARDS AND DETERMINATION OF COMPATIBLE ALMOND CULTIVARS IN ALBORZ PROVINCE OF IRAN

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One of the fundamental aspects in each country is considering the proportion of development according to available inputs especially in agricultural section. Since Iran is located in arid and semi-arid area with average rainfall less than 247 mm, development of rainfed orchards play an important role in sustainable development of agriculture. Considering the development programs in the country and lack of water resources, it is necessary to reconsideration on selected plant species and methods of orchard establishment. In this regard, this study was conducted to evaluate some almond cultivars (Shahrood 10 and 12 were grafted on bitter almond seedling and GF677 rootstock) and integration of organic material mulch with superabsorbent in order to establishment of rainfed orchards during two years. In this study, we made an attempt to investigate rainfed orchards efficiency affected by integration of superabsorbent and mulch of organic material and choose the most compatible almond among these varieties for semi arid lands. The results showed the highest soil moisture was related to mulch which were treated with 200gram superabsorbent. In addition, almond sapling growth index increased as a result of superabsorbent and mulch integration compared to other treatments. It also seems that hybrid rootstocks of almond and peach, GF677, might be compatible with rainfed conditions.

Keywords: Almond, Rained Orchards, Superabsorbent Polymer, Vegetative Growth, Mulch, Drought stress, Osmoregulation, Drought resistance