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Effect of storageenvironment of pollens on fruiting in Date palm (*Phoenixdactylifera*L.) cv. Halawyunder hot arid conditions

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Date palm (*Phoenix dactylifera*L.; Family- Arecaceae) is an important fruit tree of semi-arid and arid regions for their nutritive fruit and economic returns. It grows well under poor desert soils due to its hardy plant characteristics, deep root system and salt tolerance. It requires dry hot climate for growth and development of fruits. The areas of date cultivation are increasing day by day in the country, especially, in the states of Rajasthan, Gujarat, Punjab, Haryana and parts of Tamil Nadu. Date palm is highly cross-pollinated due to its dioecious nature. In commercial plantation, mechanical or hand-pollination is done. About 5% male trees are required for pollinating female trees. Availability of pollen in time and proper pollination plays important role in fruit production in date palm. At present, growers are facing problem of pollens shortage, which has emerged as one of the major constraints of date production. Earlier there were no known male cultivars, however, Ghanami and Madsari (Al-in-City) male is available, presently. In general, pollens of local male palm are used for pollinating female spathe. The quality of date fruits, particularly fruit size and time of ripening are influenced by pollens. Under Indian condition, early ripening is desired to avoid losses due to rains. If the male spathes open earlier than female, the pollen is dried and stored for use on a later date. Under climate change scenario, flowering in female palm is early than male. Therefore, storage of pollens is necessary for their use in next season. The present study was conducted to find out the effect of storage environment of pollens on fruit set. Hand pollination was done using fresh pollens of cv. Halawy and pollen stored under ambient temperature and refrigerated conditions (4-5^0 C) for a period of one year during the year 2017-18. The study revealed that pollination with fresh pollens registered the maximum fruit set (89-91%) followed by refrigerated pollens (70-84%) and pollens stored at ambient temperature (53-66.6%). Low fruit set percentage may occur due to decrease in viability of pollens. It may be concluded that the pollens of date palm can be stored for about one year in air tight vials under refrigerated conditions, which can be used in next season for pollination under scarcity of pollens.