

عنوان مقاله:

Design and manufacturing a date palm harvesting machine and comparing it with traditional method of date harvesting

محل انتشار:

دوفصلنامه پژوهش های میوه کاری، دوره 5، شماره 1 (سال: 1399)

تعداد صفحات اصل مقاله: 10

نویسندگان:

Danial Mahmoodabadi - فارغ التحصیل کارشناسی ارشد، دانشگاه آزاد

Mohammad Ali Rostami - استادیار پژوهشی، بخش تحقیقات فنی و مهندسی

خلاصه مقاله:

To evaluate the traditional harvesting and machine harvesting from the ground method without a need for climbing the tree, a machine was manufactured and evaluated. The maps were plotted using Rhinoceros 3D software and the device was made based on these maps. The main parts of the machine included a telescopic handle, a cluster lever, a date transfer shot, a ring and a telescopic handle. To evaluate the performance of this machine, tests were performed in a date palm orchard with three replications. Experimental treatments consisted of, date palm harvesting using the machine made in this study and traditional (manual) harvesting methods. The studied parameters were: time needed for harvesting date palm, amount of date palms felled on the ground, amount of date palm lost, total date harvested, and amount of date packed in three folds (three stages of date harvest). Result of t-student test showed that date harvesting method had a significant effect on the time taken for harvest, the amount of date spilled on the soil and wasted dates ($p \leq 0.01$). Harvesting the dates with the machine made in this study resulted in a 43% reduction in harvest time. The amount of wasted dates in machine and manual methods were 0.7 and 2.68%, respectively, indicating a 57% reduction in the dates spilled on the ground and a 75% decrease in the wasted dates. Harvesting capacity by workers was 274.7 kg or 45.3 cluster in one hour and 474.9 kg or 80.2 cluster in hour by machine

کلمات کلیدی:

برداشت خرما، ضایعات، ماشین، نخل

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1139937>

