

#### Abstract:

The olive harvesting faces several problems stemming from first, the unavailability of specialized labor causing a poor product quality and a negative effect on the tree, and second, the low worker's productivity that increases the harvesting duration with an expensive operation cost.

To resolve this problem, Olive-Tree Institute of Tunisia has been trying to introduce a series of harvesting tools. Tools, so far experimented, are plastic combs, small shakers, rotating combs and vibrating combs. These tools were introduced in an olive-harvesting yard (in a medium ripening stage); the average of Fruit Removal Force (FRF) was 300 gF and the mean weight of the fruit was 1.03 g. During this experimentation, the working time, the production weight and the damaged leaf weight were evaluated for four teams of workers using the different tools. We should mention that the insertion of these tools implicates the modification of the harvesting yard organization, that is, a good organization in accordance with the used tool will ameliorate the worker's output.

The worker's productivity, the weight of the damaged leaf and the rate of remaining olives are presented in this article. The worker's outputs were 15, 33, 39.6 and 60.5 kg per hour respectively for the small shaker, the plastic combs, the vibrating combs and the rotating ones. In comparison with the plastic comb, which is the most used tool in the Tunisian olive crops, only the small shaker didn't increase the output per man.

The experimentation resulted not only in the improvement of labor working conditions and the productivity, but also in the adaptation of the forthmentioned tools to farm conditions in our national olive grove. Despite this productivity increase, an economic study should be carried out in order to prove the introduction of such tools in our harvesting yards.