

Abstract

Harvesting of fruit is an Labor-intensive operation, worldwide, which accounts in many cases for about 50 percent of total production costs. In addition, it is a tedious, stoop type job, which is needed to be performed on a seasonal basis during a relatively short time. These combined factors, in addition to the costly operation may contribute detrimentally to the issues of safety, health and quality of picking.

While in many less developed countries with, still, cheap and abundant labor, the issue of fruit harvesting does not present yet a major problem, the declining labor availability and increasing labor costs in the developed countries, combined with more awareness to health and safety issues, make it mandatory to mechanize the fruit harvesting operation. Many mechanized solutions already exist and even commercially used. However, they are utilized primarily for harvesting fruit, which are destined for processing, or are not mechanically damaged during the harvesting operation. In addition to the end use differentiation, terrain, topography, mode of fruit plantation, type of labor availability, size of trees, and characteristics of the fruit affect the mechanical solutions. Thus, no universal solution (“one size fits all”) should be considered. Rather, the approach of a site-specific solution (“tailor-made”) should be considered for optimal results.

The paper will discuss the myriad factors, which are necessary for the selection of the desired, most suitable solution and illustrate the proposed concept through relevant examples.