

Title            Selective Picking Head for Citrus Harvester  
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### **Abstract**

When harvesting citrus, the ability of the harvester to select the harvested fruit by size is very important because there are two fruit crops present on the Valencia orange tree. Only the largest mature fruit is to be harvested and the half-size immature fruit crop must remain on the tree to mature for the following season. The conical-disc picking head described in this paper has the additional capability of mechanically harvesting fruit selected by size within a small size range which is within the wider normal size range of the mature crop.

A small-scale self-powered prototype picking head was constructed which could be mounted either on a utility or forklift for performance trials in an orchard. The picking head has slowly rotating spindles arranged in groups of four at 100 mm centres. Nine rubber conical-discs are mounted on each spindle to grip, rotate, and thus pick any fruit between 70 and 86 mm in diameter that is gently pushed between the elastic discs. The picked fruit is retrieved from the tree and deposited into a delivery chute by the picking head.

The picking head tested is suitable for installation on a mobile harvester to pick the fruit from an area of tree foliage, alternatively a small group of four spindles could be used to pick individual pieces of fruit.