Cost Comparison of Harvesting Grapes for Wine (Mendoza, Argentina)

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Among the activities necessary to conduct a vineyard, the fruit harvest or "vintage" is one that consumes the greatest amount of physical and monetary resources producer, accounting for between 29% to 41% of the direct cost, depending on destination end of the grapes. In turn represents an activity generating labour for locals and neighbouring provinces. Mostly it is a manual activity that requires 15-20 temporary workers about to perform the harvest of one hectare of vines intended for the production of varietal wines and basic wine respectively. The main problems of manual harvesting, declared by farmers is lack of manpower, sustained conflict by wage increases and the growth of labour disputes that lead to lawsuits. Mechanized harvesting is used by 6,000 hectares in the country, accounting for 3% of the area cultivated with vines. Considering that the machines used in high trellis the relative amounts to 8% of the 68,000 hectares currently leading in this system and its cost is USD $400 per hectare and say the cost of harvest of a vineyard with a production of 120/150 quintals by hand is equal to mechanically.

The objective of this paper is to present a scheme for the calculation and evaluation of harvesting costs and provide tools for decision making. We conducted the survey of farm data for three types of grape harvest: manual mechanized and bins. Period of analysis: harvest 2012. In the survey data manual harvest data were obtained from 7 (seven) cooperatives and farms belonging to two (2) non-integrated companies. In mechanical harvesting took rental values for the period of analysis. At harvest in bins provided data through informants wineries that use the system.

In the analyzed farms harvesting costs were obtained over the reference value set for the price of grapes, because most of the area is for the production of varietal wines. The price average is $ 4.16 and $ 4.60 unassociated. The differences between types of companies are mainly attributed to grape yield and their health. The price of rental services combine additional cost including infrastructure maintenance support was $ 4,400 per hectare. It has been estimated the cost of harvest equivalent / kg for a range of performance that starts at 10,000 kg / ha to 30,000 kg / ha, yield Mendoza usual.

Mechanization has reduced costs when the machine is primarily own and is used to its maximum capacity. In the manual type crops is performed in bins has lower costs compared to the traditional manual. It is observed that the variable "performance" is crucial to decide on the methodology of crop choice. Where rental machine harvest bins and took a single value for each yield per ha.

An analysis from the perspective of potential yields obtained and the fate of the grapes, for 10,000 to 15,000 kg / ha lower cost is obtained with harvest bins, but stresses that it is not feasible to implement in all vineyards due investment and vineyard design requires, it would be advisable to optimize handpicking. The turning point in unit costs is seen almost 25,000 kg per hectare since the values are similar in any system. For higher yields 30,000 kg case has the advantages of mechanization is observed for any type of machinery. When comparing hectare level shows that the mechanized harvested for rent is one of the greatest, so their decision should be linked to performance feasible to obtain.

In cost of harvesting, vineyard yield is key. Comparing hand harvest versus mechanical harvester hire, it appears that the latter would be justified from the 25,000 kilograms per hectare. When the comparison is made between manual and combine acquired from the 15,000 kilograms per hectare is lower than the cost per pound of the second long as the maximum hours use (1200) per season. When using the minimum number of hours per season (500) newly justified from 300 kilograms per hectare. For the case of bins versus manual harvest yields in all analyzed its cost is
higher because the cost per kg must appended the part corresponding to the use of bin and tractor tractoelevator. When compared with mechanical harvesting bin, the bin when yields should be less than 15,000 kg per hectare.

In terms of performance shows that 15,000 kg / ha begin to approach the unit values for manual and mechanized harvesting. From the 20,000 kg per hectare machining options have any advantage over manual crop (manual or bins).

The decision to purchase a combine must be associated with the ability to work it in the maximum capacity possible. Vineyard design and performance are the key variables for the decision of the harvest system to implement, but also influences the social context in which there is increasingly fewer staff available to carry out field. In turn, 80% of the vineyards are located in the lower extensions 15 hectares fact that makes it difficult to mechanize the harvest.

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