

Development of pre- and post-harvest drying technologies for selected raisin grape cultivars in Uzbekistan

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The objective of this work is to determine the most appropriated and effective methods to be used to dry four cultivars of local grapes (‘Sultoni’, ‘Kora Janjal’, ‘Katta Kurgon’ and ‘Husayne’) for raisin production. The experiment was conducted in Samarkand Province of Uzbekistan. Three types of drying techniques, including sun-drying, greenhouse solar dryer and convective drying chambers, were applied. The calculated drying times showed that ‘Sultoni’ grape was found the most time-saving option among others cultivars, but it was generating significantly lower volume of production, when dried with conductive drying chambers. Meanwhile, ‘Kora Janjal’ grape variety would not be recommended to dry in greenhouse dryer, yet obtained highest production when dried in conductive drying chamber. Both non-traditional methods are preferable to the classic sun-drying technique which is simple and cost-effective, but it takes 2–6 times longer compared to the other tested technologies. If the goal of producers is to increase their income then drying period of grapes must be reduced as much as possible without compromising the quality of the final product, which can be achieved by drying the grapes in controlled chambers with hot dry airflow.

Cultivar	Method					
	Sun dry		Greenhouse		Drying curve	
	Period (day)	Dry mass (kg)	Period (day)	Dry mass (kg)	Period (day)	Dry mass (kg)
‘Sultoni’	30	22.6	13	23.8	5	24.5
‘Kora Janjal’	30	20.8	19	23.0	6	25
‘Husayne’	32	19.2	16	24.3	6	25.6
‘Katta Kurgon’	32	20.6	14	24.1	7	24.6

Keywords: drying chamber, raisins, quality, sun-dried grapes