Title (2)	:	**Assessing wineries' performance in managing critical control points for arsenic, lead, and cadmium contamination risk in the wine-making industry: A survey-based analysis utilizing performance indicators as a results tool**
Journal	:	Heliyon
Document Type	:	Article
Publisher	:	Elsevier Ltd.
UniKL Author	:	Amelia Md Som
Link to Full Text	:	https://www.sciencedirect.com/science/article/pii/S2405844023101708
Link to UniKL IR	:	
Link to Scopus Preview	:	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85179431204&doi=10.1016%2fj.heliyon.2023.e22962&partnerID=40&md5=6d8074f21880ab00548886eb3520cc0c
Abstract	:	Human health hazards appear in wine production. Wineries have implemented food safety management systems to control food hazards through Hazard Analysis Critical Control Point (HACCP). Wine-making industry applies HACCP by evaluating Critical Control Points (CCPs). One of the CCPs that exhibits inadequate control is the potential contamination risk of arsenic, cadmium, and lead throughout the winemaking procedure. Wineries performance level about controlling CCPs related to contamination risk by arsenic, cadmium and lead in the winemaking were analyzed. A sixteen-question questionnaire was made to achieve this research. Three indicators were calculated for training, legislation, and analysis performance components in CCPs control. Results revealed that wineries fault in analysis and legislation components. Identification and updating of legislation about As, Cd and Pb contamination risk is in starting performance level for wineries that produce less than 250,000 L/year wineries. Analysis performance level is even lower than legislation. Only one out of every three wineries possess information regarding the concentrations of arsenic, cadmium, and lead in the soils of vineyards where grapes are cultivated. Furthermore, the availability of data on their available concentrations in the soil solution is even more limited. Those wineries that controlled As, Cd and Pb concentrations make it according to official recommendations using techniques based on atomic absorption spectrometry. However, there is a lack of this spectrometry equipment in the wineries own laboratories.