PP-69 ASSESSMENT OF HEAVY METAL AND MINERAL ELEMENT CONTENTS OF MULBERRY SAMPLES GROWN IN GUMUSHANE PROVINCE

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Heavy metals are particularly important compared to other chemical pollutants due to present in a large variety of resources, causing wide spread pollution, resistant against environmental conditions, having the potential to always affect biological systems and accumulate increasingly inside the organisms by penetrating easily into the food chain [1].

Gumushane hosts rich mineral deposits and there are extensive mining operations conducted in the province. Owing to the fact that it is surrounded by mountains and thus has limited air circulation, it suffers from intense air pollution. For this reason, it is wondered whether the heavy metal contents of mulberries, which are grown in the province of Gumushane and used in the manufacturing of commonly consumed food products such as molasses, jams, dried fruit rollups, mulberry pulp, fruit ice cream, churchkhela, vinegar and fruit juice concentrate, pose a health risk. For this reason, the present study aims to identify the mineral elements and heavy metal contents of white mulberries (*Morus alba* L.) and black mulberries (*Morus nigra* L.) that are grown in the city center of Gümüşhane province and its neighboring counties. Heavy metal analyzes were performed by using ICP-MS, in the fruits, leaves and soil of the plants after being digested in a closed microwave digestion system by using suitable solvent mixtures. Sample collection was performed twice a year, namely during the ripening period and fully ripening period of the fruits. The results obtained were compared with the acceptable limits of heavy metal for humans as established by the World Health Organization, Turkish Food Codex and the literature and an opinion was submitted as to whether they present any risk in terms of human health.

When the available data is evaluated, the mulberries grown in the city center of Gumushane province and its neighboring counties, were found to have presented a health risk in terms of Pb, Cd, Ni, Cu, Zn, Mn and Co metals.

Keywords: Gumushane, Mulberry, *Morus alba* L., *Morus nigra* L., Heavy metal, Mineral element

References

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