



CHEMICAL COMPOSITION AND MEDICINAL PROPERTIES OF MANDARIN PEEL

Mamurova Mohlaroyim Ma'rufjon qizi

PhD Student, Department of

Chemistry, Andijan State University

Ibrohimjon Rahmonovich Asqarov

Chairman of the Uzbekistan Academy of Medicine,

Doctor of Chemical Sciences, Professor

Qirgizov Shahobiddin Mirzaraimovich

Doctor of Chemical Sciences, Professor, Department of

Chemistry, Andijan State University

Abstract. *The chemical composition of "mandarin peel" and "mandarin pulp" was compared and analyzed. Mandarin peel was found to be rich in macroelements such as potassium (133 mg) and microelements like selenium (2.58 mg). In mandarin pulp, calcium (17.9 mg) was the most prevalent macroelement, while zinc (0.08 mg) was the dominant microelement.*

Mandarin has been cultivated by humanity for thousands of years, initially in China, Southeast Asia, and Africa. Europeans became familiar with mandarins approximately 300 years ago. In recent years, interest in mandarin cultivation has increased in Uzbekistan, especially in subtropical regions such as Andijan, the Fergana Valley, Surkhandarya, and Kashkadarya provinces.

The fruit is rich in sugars, fiber, proteins, fats, essential oils, organic acids, and phytoncides. It contains a high amount of group V vitamins, B-group vitamins, and especially a large quantity of vitamin C. Among macro- and microelements, it contains potassium, calcium, magnesium, sodium, and phosphorus [1]. The table below presents the macro- and microelement content of mandarin peel and pulp.

Table 1


Macro- and Microelement Composition of Mandarin Peel and Mandarin Pulp

	Substances (µg, mg, g per 100g)	Mandarin Peel	Mandarin Pulp
Macroelements	Potassium	133 mg	166 mg
	Calcium	30.1mg	17.9 mg
	Phosphorus	17.9 mg	18.4 mg
	Magnesium	11.1 mg	12 mg
Microelements	Zinc	0.26 mg	0.08 mg
	Copper	0.04 mg	0.04 mg
	Manganese	0.07mg	0.03mg
	Selenium	2.28mg	0.09 mg

Potassium (K) helps maintain the balance of intracellular fluids, regulates heart function, and ensures the proper functioning of muscles and the nervous system. Potassium deficiency can lead to muscle weakness and heart rhythm disturbances. Calcium (Ca) ensures the strength of bones and teeth, participates in blood clotting processes, transmits nerve impulses, and controls muscle contractions. Calcium deficiency can lead to osteoporosis (bone damage) and muscle disorders. Magnesium (Mg) is involved in energy production processes, supports heart and muscle function, regulates the nervous system, and helps manage blood glucose levels [2].

Microelements (trace elements) are required by the body in small quantities. Despite being present in very small amounts, they perform essential functions, and their deficiency can lead to serious health problems. Iron (Fe) is a component of hemoglobin and enables the blood to carry oxygen. Iron deficiency can result in anemia (a condition where the iron content in the blood is reduced). Zinc (Zn) plays an important role in strengthening the immune system, speeding up the wound healing process, activating enzymes, and supporting growth. Iodine (I) ensures the proper functioning of the thyroid gland, plays a key role in the production of the hormone thyroxine, and regulates metabolism. Copper (Cu) aids in the absorption of iron in the body, supports antioxidant systems, and contributes to the functioning of the cardiovascular system. Manganese (Mn) is involved in metabolic processes, is important for bone development and the prevention of bone damage, and also supports antioxidant activity.

Macro- and microelements play a vital role in various physiological processes such as energy production, muscle and nerve system function, cell regeneration, and strengthening of the immune system. They provide the necessary substances to supply the body with energy, nutrients, and protection from harmful agents. Therefore, obtaining all essential



elements in a balanced manner is crucial for maintaining health and preventing diseases. While dietary supplements can help eliminate deficiencies, the best results are achieved through a balanced and diverse diet [3].

Conclusion: Food supplements rich in macro – and microelements play an important role in maintaining the normal functioning of the body. They support the health of bones and teeth, ensure the proper functioning of the muscular and nervous systems, strengthen the immune system, and promote overall well-being. Additionally, they help in the prevention and treatment of various diseases. It is essential to maintain a proper balance of macro- and microelements in the body, as both deficiency and excess can negatively affect health. Timely and balanced use of food supplements can help strengthen the body.

REFERENCES

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