ABSTRACT

In this diploma thesis, rubidium in plant material samples was determined by atomic absoption spectrometry. Determination of plant material rubidium was performed on two different atomic absorption spectrometers (GBC 933 AA and ContrAA 700) for comparison. The selection of a proper method of atomization was essential, therefore optimizations for the flame atomizer and electrothermal atomizer were performed.

On the GBC 933 AA, flame atomization was tested. The flow rate of the acetylene-air, vertical and horizontal flame profile, spectral interval width was optimized for the instrument.

On the ContrAA 700, the conditions for flame atomization were optimized as well as for electrothermal atomization. The optimized parameters included the acetylene-air flow rate and the vertical flame profile again. For the electrothermal atomization, the temperature dependence of pyrolysis and the temperature dependence of atomization were optimized.

Under experimentally determined optimal conditions, the determination of rubidium in fruit and vegetable juice samples was performed by the method of calibration curve.

Rubidium usually accompanies toher alkali metals. In the absence of essential biogenic elements iportant for plant growth, rubidium is able to help out and take on the role of potassium.