

Total sulphur and organosulphur compounds in garlic and ramsons plant organs at the end of vegetative period

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In this study was analysed total sulphur and content of organosulphur compounds such alliin, diallyl disulfide (DD), reduced glutathione (GSH) and L-cysteine in the bulb and leaves of garlic and ramsons at the end of vegetative period. Total sulphur content was determined by ion chromatography in the form of sulphate ion. Analysis of alliin, DD, GSH and L-cysteine was performed by HPLC using UV-VIS, electrochemical and fluorescence detectors. Sulphur content (mg/g) in leaves and bulb of garlic was: bulb 0,63 and leaves 0,66. Content of alliin: bulb $4,8 \times 10^{-2} \mu\text{g/g}$, leaves $3,8 \times 10^{-2} \mu\text{g/g}$, and DD: 12,97mg/g, but in the leaves of garlic DD was below of the limit of detection. Content of L-cysteine in the bulb of garlic was 15,82mg/g, leaves 2,31mg/g, while the content of GSH in the bulb of garlic was 21,9mg/g and leaves 12,69mg/g. Total sulphur content (mg/g) in leaves and bulbs of ramsons at the end of vegetative period was: bulb 0,93 and leaves 0,74. Content of alliin: bulb $23,2 \times 10^{-2} \mu\text{g/g}$, leaves $7,3 \times 10^{-3} \mu\text{g/g}$. The content of DD in the bulb of ramsons was 1,78mg/g, while in the leaves content of DD was below of limit of detection. L-cysteine in the bulb of ramsons was 14,51mg/g and leaves 0,94mg/g, GSH in the bulb of ramsons was 14,51mg/g and leaves 8,94mg/g. In general the contents of total sulphur and organosulphur compounds in the bulb of garlic and ramsons are higher than in leaves.