

STELLARIA MEDIA AS A PLANT FOR CHICKENS IN PASTURES OPEN AREAS?

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Forages are essential for the successful operation of animal production systems. With the growth of global human population the importance of researching forages that are preferable for growing species in a particular climate and resources has increased. Grassland and forage crops are recognized for their contribution to the environment and efficiency of meat and milk production (Bras, 2008). Thus, it is pertinent to improve the nutritive value of grasses and other forage plants in order to enhance animal production to obtain food quality. It is also important to develop new forages which are efficiently utilized and less wasted by involving efficient animals (Sumanta et al., 2014).

Stellaria media is an annual or biannual flowering plant (*Caryophyllaceae*) which is native to Ukraine and Europe. It is common in lawns, meadows, waste places and open areas of Steppe, Forest-steppe, and Polissya, in acid, neutral and basic soils, nitrogen-loving. The plant has weak slender stems with length 5–50 cm and leaves during all year because it is not frost tender. Species is very easily grown in full sun or semi-shade from early spring till autumn frosts; yields 2–3 generations in growing year. *S. media* is edible and nutritious and it is used as vegetable and a preferred feed for birds, chicken and geese. Upground parts contain protein, carbohydrate, triterpenoid saponins (Hu et al., 2009), tannins, fibers, and vitamins A, B₁, B₂, B₆, C; macroelements Ca and K, microelements (M. Howard, 1987; W. Hensel, 2008). Other constituents are less investigated. *S. media* is best harvested between May and July; it can be used fresh or be dried and stored for later use. Carotenoids and chlorophylls are excellent beneficial food sources for gut health and blood system. Our aim was to calculate carotenoids and chlorophylls contents in herb of *S. media*.

S. media Chlorophyll a (Chl-a), chlorophyll b (Chl-b), and total carotenoids (Car) were measured from the fresh and dry material harvested in the outskirts of Lviv city. 0.500 g of chopped fresh or 0.200 g of dry plant material samples was homogenized in the presence of calcium carbonate (0.2 g) and different extract solvents (100 % acetone; 96 % ethanol) in ratio 1:20 and 1:100 (m:V). The mixtures were subjected to filtration using a Whatman paper and analyzed for Chl-a, Chl-b, and Car content in spectrophotometer CF-46. Optical density was read at 440.5, 644, 649, 662, 665 nm. Values of optical densities have been used to compute Chl-a, Chl-b, total Chl, and carotenoids' contents without their previous division, using the formulas as described in M. M. Musiienko, T. V. Parshykova, P. S. Slavnyi, 2001.

The results obtained with these methods indicate that the *S. media* concentration of Chl-a, Chl-b and Car is in the range 0.72–1.05; 0.30–0.66; 0.50–0.88 mg·g⁻¹ DW, respectively. These results were consistent with results reported in various plants such as lettuce, spinach, mustard, nettles (Duma et al., 2014), kale (Korus, Kmiecik, 2007), chicory, dandelion, wild rocket and garden rocket (Žnidarčič et al., 2011). *S. media* contains number of different phytochemicals which have a high nutritional value. Good pasture with access to supplemental plant species containing these compounds will provide much of them the poultry needs. *S. media* contains high amounts of carotenoids and chlorophylls and it could become preferred feed for birds, chicken and geese, especially at pasturing poultry as a source of many essential ingredients of feed. Chickens can be allowed to pasture *S. media* or this plant can be harvested, dried, and stored for chickens at later time. *S. media* can be planted in cover crops such as clover, mustard, rape, alfalfa. So as *S. media* store saponins which can be toxic, their quantities must be controlled.