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Study of some morphological and biochemical characters of *Rumex acetosa* L.

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Abstract: Sorrel (*Rumex acetosa* L.) is a perennial, dioecious plant found as a plant in the wild flora, then cultivated for its medicinal properties containing many biochemical compounds. Sorrel is also a tasty herb and its leaves are a good source of macro and micronutrients. Consumer demand for fresh or minimally prepared vegetables encourages the introduction of this species on the market as a fresh product. In our study we followed three cultivars: (Pallagi Nagylevelu, Bloody Dock, de Lyon) obtained from ecological cultures in the Cluj area. The chemical determinations were carried out at the Faculty of Horticulture and Business in Rural Development, Horticultural Products Technology discipline. The average of the leaf surface recorded values between 104.09-148.01 cm². The lowest amount in acidity (oxalic acid) was obtained in the cultivar Bloody Dock, (0.236%). Results on C vitamin were obtained values in the range of 19.88-23.11 mg/100g f.s.

• Introduction

Rumex is a genus with about 200 species, which belong to the *Polygonaceae* family and are distributed in Europe, Asia, Africa and North America, primarily in the Northern Hemisphere [18]. The common names of *Rumex* species are varied and even confusingly overlap between species. The etymological origin of the genus name *Rumex* probably comes from the Greek word for spear or arrow, due to the spear-shaped leaves of the plant [10]. The species name *acetosa* is derived from *acetum*, the Latin word for vinegar, referring to the sour taste [12].

• Material and method

The biological material analysed was harvested from a privately owned greenhouse culture, and from the didactic greenhouse of the vegetable growing discipline at the University of Agricultural Sciences and Veterinary Medicine in Cluj-Napoca.

• Results and discussions

The realization of the morphological characters is different from one variety to another, and within the same variety, from one plant (rosette) to another. The number of leaves that form in the rosette is determined by the biological nature of the variety. They are usually large, but their size can fluctuate depending on age and growing conditions.

The main physical properties of *Rumex acetosa* L.

Cultivar	Average values of the morphological characters				
	Leaf length [cm]	Leaf width [cm]	Petiole length [cm]	Number of leaves in the rosette	Leaf surface [cm ²]
'Pallagi Nagylevelü'	17.27	10.28	9.14	38.45	111.43
'Bloody Dock'	14.25	8.69	7.91	26.42	104.09
'de Lyon'	19.35	12.95	8.52	49.21	148.00

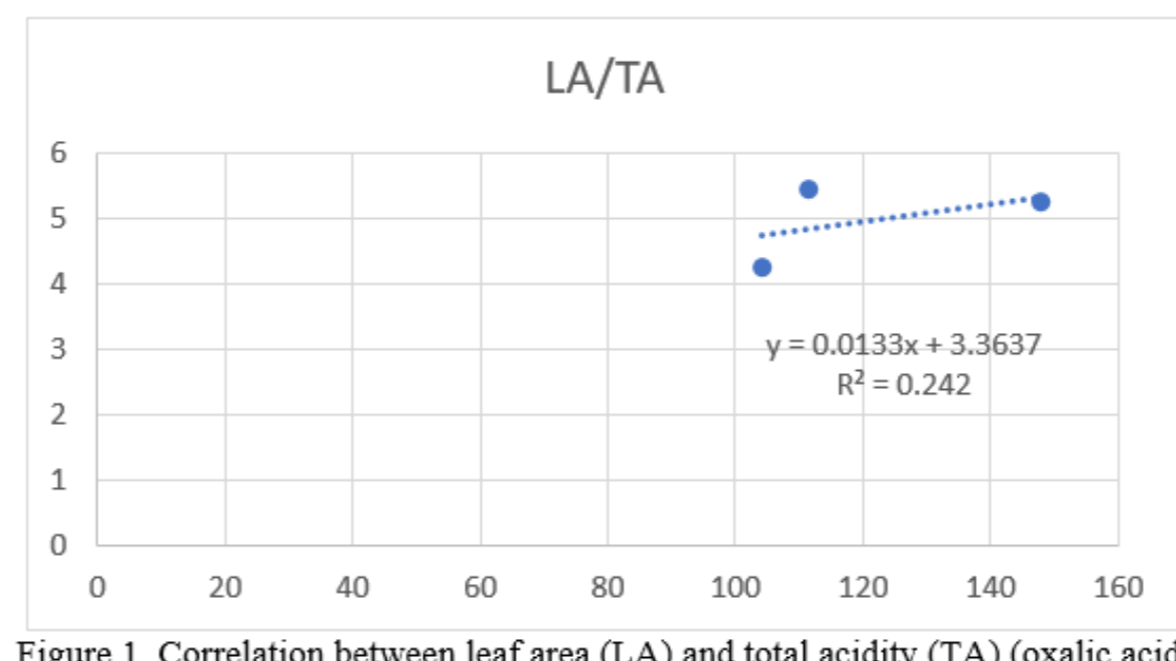


Figure 1. Correlation between leaf area (LA) and total acidity (TA) (oxalic acid)

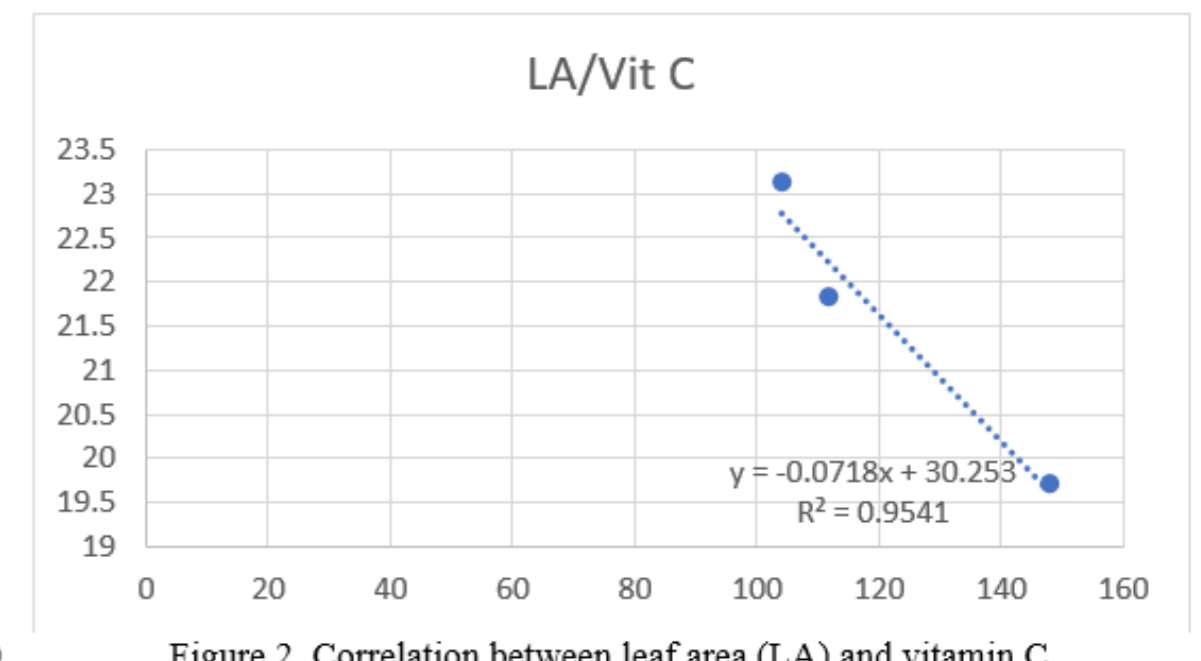


Figure 2. Correlation between leaf area (LA) and vitamin C

Experimental variants (cultivar)	Aspects of leaves during plant maturation	Cultivated plants in the form of a bush
'Pallagi Nagylevelü'		
'Bloody Dock'		
'de Lyon'		

• Conclusions

The forced/protected cultivation of this species in greenhouses or solariums, makes it possible to consume it fresh all year and contributes to the diversification of the assortment of green vegetables for a healthy diet.

The introduction of this species on a large scale through its use in the production of food supplements beneficial to the body due to the properties and chemical compounds found in all the component parts of the plant is still an objective in the expansion of cultivated areas in Romania.

It should be noted that following the determinations made in this study, the influence of the interdependence of experimental factors (genetic, biological, ecological, technological) is essential on the analysed quality parameters.