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"Young people and multidisciplinary
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STINGING AND DEAD NETTLE
PLANTS AS FUNCTIONAL FOODS

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Abstract:

Nettle leaves and stems can easily accepted as functional foods because they can be used as dietary food, providing not only nutrients and energy, but also modulate one or more targeted functions in the body, reducing the risk of diseases. Based on the observations which cover the aspects of functional food we can call nettle plant a potential functional super food. At the same time, the plants show high contents of minerals and vitamins, providing a healthy nutrition, regardless of gender and age of consumers. Using generalized linear model, we managed to identify the ideal proportions of dry stinging nettle and dry dead nettle leaves for creating a tasty and healthy nutrition, regardless of gender and age of consumers. Using generalizes linear model, we managed to identify the ideal proportions of dry stinging nettle and dry dead nettle leaves for creating a tasty and healthy functional tea.

Introduction

The aim of the study was to evaluate the properties of stinging nettle plants (*Urtica dioica* L.) and dead nettle plants (*Lamium album* L. and *Lamium purpureum*) as food and as medicine in order to create innovative foods. Nettles, stinging or dead are used as edible plant and as medicine for over 2000 years but only in the last study century they started to be considered as food with therapeutic properties.

Material and method

- The determinations were performed on stinging and dead nettle plant samples, collected from western part of Romania.
- Determination of micro and macro elements analysis using XRF analyzer;
- Determination of total antioxidant capacity using CUPRAC method and polyphenols using Folin Ciocalteu method;
- Comparative analysis of stinging and dead nettle plant compositions.

Results and discussions

- According to the created database, almost all nettle plants contain active biochemical showing high antioxidant capacity, high content of polyphenols and flavonoids, that help to reduce free radical generation.
- The cumulative effect of different biochemical compounds of various collected samples are presented in figure 1.

Conclusions

- The plants show high contents of minerals and vitamins, high total antioxidant capacity and total polyphenols providing a healthy nutrition, regardless of gender and age of consumers.
- Generalized linear model is a mathematical model which can be easily used to identify the ideal proportions of different dry plants to create healthy innovative functional food products

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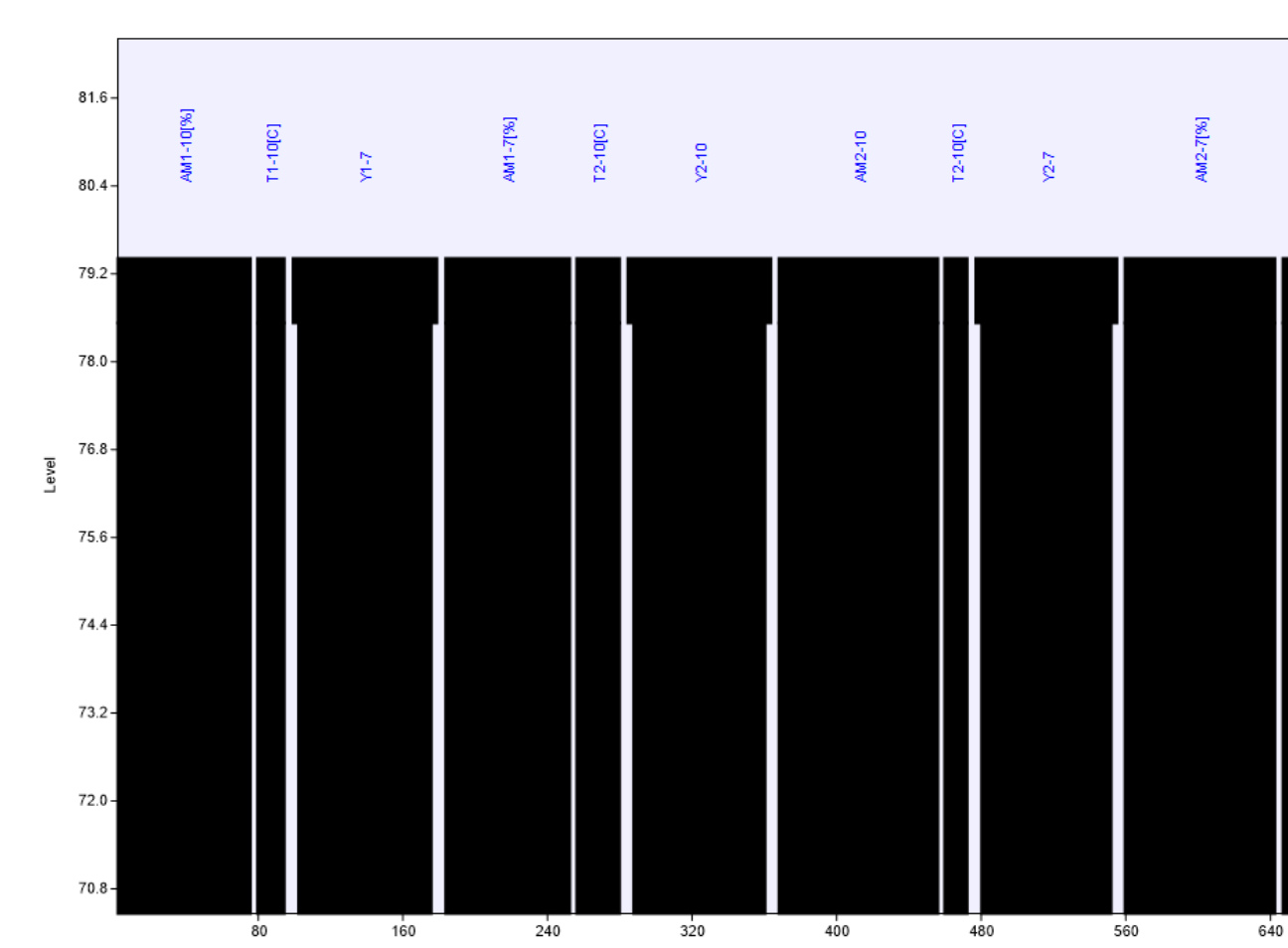


Figure 1 Analysis of cumulative properties of nettle samples

- Based on the chemical composition of the 2 plants species, we managed to identify the recommended proportions of stinging and dead nettles to create a healthy and tasty tea (Figure 2).

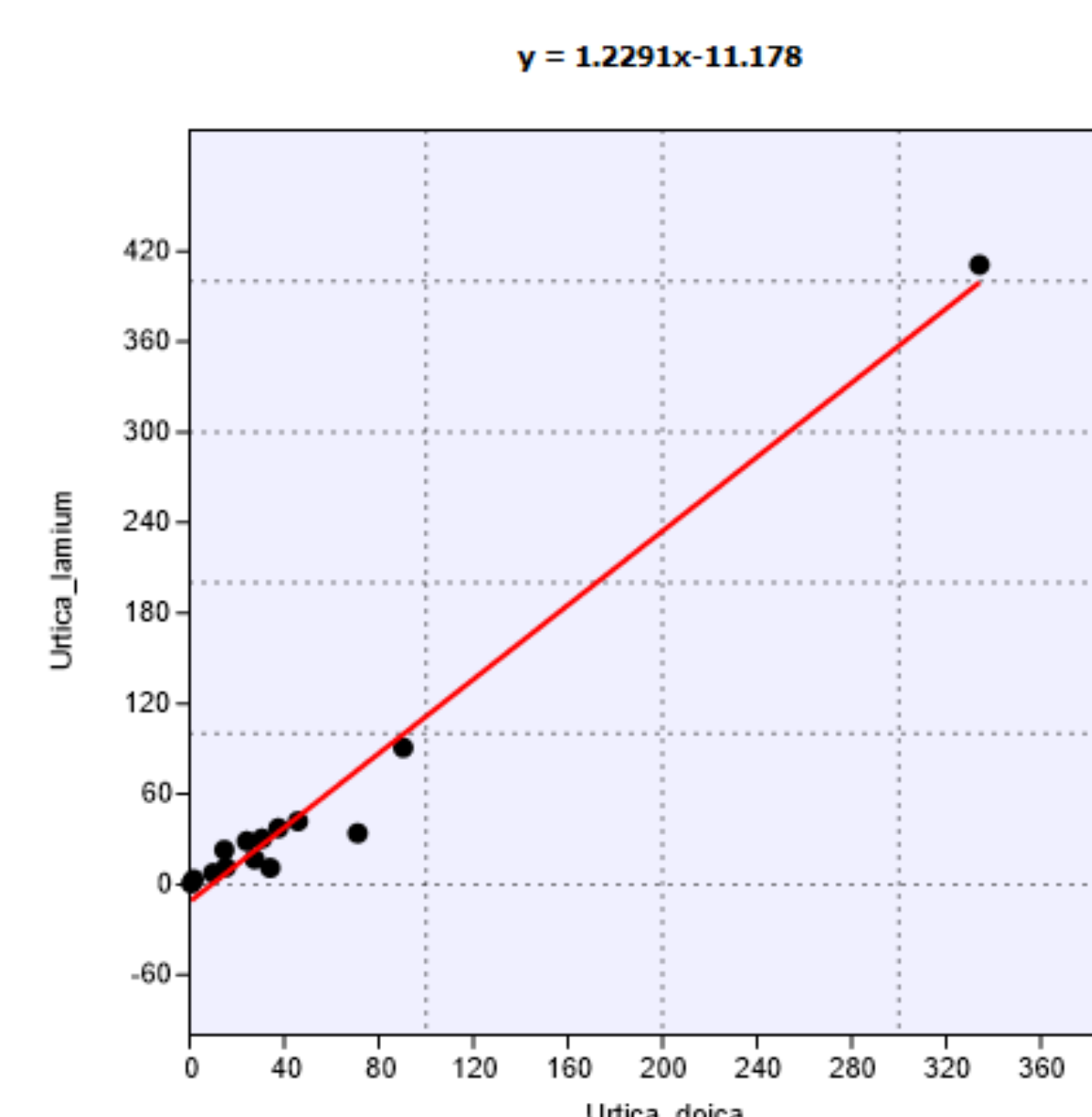


Figure 2 Generalized model applied to establish the proportions of tea components