



# Patterns of Weed Sensitization and Internet User Interests suggest a need of public health education in Ukraine

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Ragweed (*Ambrosia*) and mugwort (*Artemisia*) remain key weed-allergenic species in Ukraine. This study aimed to determine regional sensitization levels to these weeds and explore whether inhabitants are genuinely concerned about their allergies.

Data from 20,033 patients who underwent ALEX allergy testing in 17 Ukrainian regions (2020-2022) were analyzed. The data, processed with Excel, was compared with Google Trends statistics for the last five years to assess user interest in words like “ragweed” and “mugwort” in Russian and Ukrainian.

Sensitization to *Ambrosia* alone was found in 30.43% (6097 people) of the sample; 15.70% (3145 patients) were sensitive to *Artemisia*, and 33.84% (6780 people) responded to both weeds. Ragweed sensitization was highest in Southern and South-Eastern regions: Dnipro (55.05%), Mykolaiv (45.45%), Donetsk (44.44%), Poltava (42.63%), Kherson (38.34%), followed by Kharkiv (36.21%) and Odesa (34.59%).

Mugwort sensitization lacked a clear regional pattern, being most common in Northern Zhytomyr (25.00%) followed by Central-Southern (Dnipro 23.99%), Southern (Donetsk 18.52%), and North-Eastern regions (Poltava 18.42%, Kharkiv 17.49%).

Internet search queries are particularly aligned with the regional patterns of sensitization. Despite ragweed allergy prevalence, the search for “mugwort” was more popular than that for “ragweed” in all South-Eastern regions over the last five years. “Ragweed” queries alone dominated in Odesa, Kharkiv, and Crimea, corresponding to higher *Ambrosia* sensitivity in these regions.

High levels of “ragweed” queries were also common for Kyiv, Chernihiv, Sumu and Transcarpatia regions where this type of allergy was not so common.

The term “mugwort” was the most searched again in southern and southeastern regions. Somewhat increased queries were also seen in the northern (Chernihiv, Sumu) and Eastern (Kharkiv) regions.

The data suggests that Internet user interests align with allergy sensitization patterns in Ukraine in particular. This may indicate poor population awareness of the true factors which may cause their allergy, which this person experiences during the season, particularly for *Ambrosia*. Queries about *Artemisia* may reflect people’s interest in this weed as a raw herbal material. This indicates a need for public education about the causal agents of genuine allergy in Ukraine.

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