

# Seasonal Patterns of Airborne Pollen in Ecuador: Influence of Wet and Dry Seasons on Allergenic Taxa Concentrations

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## Background

Outdoor pollen exposure poses significant risks to respiratory health, particularly for individuals with pre-existing allergic conditions. In tropical countries like Ecuador, aerobiology is a growing field. This study seeks to characterize Ecuador's airspora profile by identifying the most abundant pollen taxa, peak flowering periods, and the relationship between pollen patterns and local climatic conditions.

## Method

Continuous sampling was conducted from March 9th, 2023, to April 30th, 2024, using Burkard's 7-day spore trap located in an urban area in the coastal region of Ecuador. Standard NAB protocol was followed for collecting samples. Taxa were classified by allergenicity and pollen type. Seasonal Pollen Integral (SPIn) was calculated as the sum of Daily pollen concentration (DPC) from December to May (wet season) and June to November (dry season). Annual Pollen Integral (APIIn) was also obtained. Data was analyzed using descriptive statistics, Student's t-test used to compare mean pollen between the dry and wet seasons, assessing significant differences ( $p < 0.05$ ).

## Conclusion

Despite the typically stable climate of tropical regions, seasonal patterns in air spora are evident in our area. Preliminary findings suggest that key months for heightened activity are April and September.

