

**Survey of Allergenic Airborne Pollen and Spores in the Dead Sea region
1999-2002, Prof. Yoav Waisel, Tel Aviv University.**

Summary

A. Objectives

- Identification of the airborne flora (pollen and mold spores) in the southwestern Dead Sea region.
- Establishment of the time course of their concentrations.
- Evaluation of changes in composition and concentration of airborne pollen and spores in different places along the Dead Sea coast.
- Delineation of the "safe periods" at the Dead Sea for patients suffering from allergy.

B. Sites of air monitoring

- Roof of Tsell Harim hotel, Ein Boqeq
- Sea shore, Ein Boqeq
- Public park, in front of Petra shopping center, Ein Boqeq
- Roof of a cabin, Mineral beach
- Roof of the Regional Council building, Megilot

C. Methods

- 30 minutes every 2 hours, 5 to 6 sample collection during day and night using the "Rotorod" instrument.
- Continuous sample collection, with tape replacement every 7 days using the "Burkard" instrument.

D. Results

- Even in these remote desert sites, 50 species of pollen and 43 species of molds were identified.
- Significant differences, in the concentration of airborne pollen and spores,

were found throughout the year.

- Some differences in composition and concentration were found between the five sites of measurement. The magnitude of the differences was seasonally depended.
- The composition and concentration of the airborne flora are greatly influenced by the intensity and the course of the prevailing winds.
- Autochthonous plants released most of the airborne pollen grains.

E. Annual changes

- The lowest pollen concentration was found during the months of December, January and February.
- The highest concentrations were recorded between March and June
- Climatic conditions (humidity, wind intensity, wind direction and temperature) have influenced the pollen and spore concentrations.
- Lowest spore counts were found between December and March.

G. Daily changes.

- Significant changes in pollen were found during the day-night cycle.
- Depending on the wind and temperature regime, only small changes were recorded between mid-day and mid-night concentrations of airborne pollen.
- No significant changes in mold spores occurred during the day, yet higher concentrations were found during the night.

F. Conclusions

- The concentration of the airborne pollen is six times lower in the Dead Sea region than that in Tel Aviv.
- The airborne flora concentration at the Dead Sea is lower than that reported for most of the sites in Europe.
- The differences were not equal throughout the year.
- Pollen of wild Chenopods are the most important constituents of the airborne flora, followed by that of the ornamental garden plants.
- Airborne pollen concentrations differ along the Dead Sea shores, decreasing from the north southward.
- Due to the low airborne pollen concentration this resort area is particularly suitable for pollen allergic persons.