

The Effect of *Trifolium*, *Raphanus*, and *Cistus* Pollen Grains on Some Blood Parameters and Mesentery Mast Cells

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Z. Naturforsch. **61c**, 421–426 (2006); received September 6/December 14, 2005

Three kinds of pollen taxa belonging to 3 families (Fabaceae - *Trifolium* spp., Brassicaceae - *Raphanus* spp. and Cistaceae - *Cistus* spp.) and commonly collected by honeybees were fed to mature male rats separately, in the form of 60 mg/animal/day for a 30-day period. The objective of this study was to investigate any positive effects or possible side effects of the use of pollen on the immune system. This was achieved through blood analysis and cell count on blood, hemoglobin, erythrocyte and immune system cells. The cell concentration of mast cells, degranulization and cell localization were investigated in prepared mesentery tissue samples. Histological investigations of the stomach and duodenum sections of pollen-fed rats were carried out to learn the reason for eosinophil gastroenteritis in the alimentary canal.

The eosinophil and lymphocyte levels of rats fed with pollen of *Trifolium* spp., *Raphanus* spp., and *Cistus* spp. were observed to have increased blood cell counts, while neutrophil and monocyte levels decreased; different values were found in basophil leucocytes between the pollen groups. Differing reductions in mesentery mast cell concentration, degranulization and cell localization were found. Within the three separate pollens, the rats having been fed with *Cistus* spp. pollen were observed to have higher blood lymphocyte, eosinophil, hemoglobin and hematocrit values than those fed with the others, as well as low mesentery mast cell concentration. Hemoglobin values were determined to increase at a proportion of between 10.0–11.3%. No difference was found in other blood parameters.

The fat proportion of the male rats fed with the three taxa was between 4.03–8.75%, while that for protein proportion was between 16.11–24.25%. Male rats receiving these taxa did not experience allergic reactions and it is possible to argue that the low protein and fat content of these pollens have a strengthening effect on the immune systems by the increase in lymphocyte content and the amount of hemoglobin leads to an increase of oxygen transport capacity in the tissues.

Key words: Pollen, Cell Blood Count, Mast Cell