

Sensitization to *Oryzaephilus surinamensis* in selected suburban population of South Poland

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Storage insects cause not only very high economic losses but also occupational allergies in humans. Allergic reactions are caused by proteins from bodies, faeces, eggs and secretions from some species. The exposure to insects, particularly in workplaces can lead to inhalant allergies which can manifest with asthma, atopic dermatitis, conjunctivitis, rhinitis and may also be a cause of such occupational diseases as eczema or itching in persons connected with agriculture and food industry. The aim of this study was to identify important antigens from the sawtoothed grain beetle – *Oryzaephilus surinamensis* [OS]. Sera of 30 patients from a suburban population of Upper Silesia (South Poland) were tested for the presence of IgE antibodies to antigens from larvae, pupae and both adults of the beetle. To determine specific antigens whole protein extracts were obtained. The proteins collected from four life stages of OS were fractionated by SDS PAGE and identified by Western blot. The patients' antibodies against particular antigens were identified using anti-human anti-IgE monoclonal antibody. Air dried probed membranes were analysed in Omega 10 Analyzer and the results were processed in the Total Lab computer program.

The conducted research showed the existence of many protein fractions for each life stage of OS which give positive reactions with IgE antibodies. The largest number of allergenic potential fractions was shown in females (23 protein fractions) and pupae (22 protein fractions) while smaller amount was shown in larvae (18 protein fractions) and males (14 protein fractions). Majority of the sera (25/30) showed positive reactions to protein fractions 25-29 kDa and 30-34 kDa from pupae of OS. The obtained results may indicate the existence of many protein fractions with an allergenic properties in OS. It also should be stressed that all life stages of this storage insect may provoke allergic reactions in exposed subjects.