

Evaluation of the sensitivity of detection of helminthes eggs in lettuces (*Lactuca sativa*) to assess the contamination of vegetables derived from conventional and organic culture systems in Curitiba and Metropolitan Region.

Roberta de Lima<sup>1</sup>, Gislaine Aparecida Teixeira<sup>2</sup> e Diego Averaldo Guiguet Leal<sup>3</sup>.

<sup>1</sup>Departamento de Nutrição, Universidade Federal do Paraná, UFPR, Curitiba, Paraná, Brasil.

<sup>2</sup>Setor de Ciências da Saúde, Centro Universitário Autônomo do Brasil, UniBrasil, Curitiba, Paraná, Brasil.

<sup>3</sup>Departamento de Patologia Básica, Universidade Federal do Paraná, UFPR, Curitiba, Paraná, Brasil.

Currently, the consumption of organic vegetables has been increasing worldwide. Fresh produce is a potential vehicle of transmission of a variety of microorganisms such as protozoa and helminthes. The use of contaminated water as well as contamination throughout the food venue chain has been strongly correlated as the main sources of outbreaks of diarrhea and other foodborne diseases. The main goals of this study were to evaluate the efficiency of the recovery of helminthes egg through artificial contamination of lettuce samples, using *Ascaris suum* eggs as a model and, to evaluate the natural contamination by parasites and light debris in lettuces commercialized in supermarkets, free fair markets and organic fairs from Curitiba and Metropolitan region. A known number of *A. suum* eggs obtained from the dissection of parasite females was used for the experiments of artificial contamination (n = 3). For egg recovery, the leaves were placed in a clean plastic bag, and 200 mL of 1 M glycine solution, pH 5.5, was added. Manual stirring of the sample was performed for three minutes, and the resulting liquid was sieved and subjected to spontaneous sedimentation, kept at rest for 2 hours. The supernatant was carefully removed with the aid of Pasteur pipette and the resulting pellet (10 mL) centrifuged at 1120 x g for 5 minutes. Glass slides were made of all remaining sediment - 1 mL (20 slides/ sample) for counting and identification the recovered eggs. The analysis of natural contamination of vegetables by parasites (n = 74 samples) obeyed the same procedures mentioned above, except for the stage of artificial contamination. The average recovery efficiency of *Ascaris suum* eggs was 52.4 % in the artificial contamination experiments. From the total of 74 samples, i.e, 52 harvested from the conventional culture system, 17.0% presented contamination by parasites. *Entamoeba coli* cysts was the most commonly detected parasite (9.0%), followed by eggs (5.0%), larvae and free-living adults (3.0%) of the *Strongyloididae* family. Intestinal Coccidia oocysts similar to *Isospora* sp. (1,9%), was also detected. Among the 28 lettuce samples harvest from the organic culture system, 36.0% presented contamination by parasites: *Ascaris* sp. (25.0%), followed by *Entamoeba coli* cysts (7.0%), larvae of the family *Strongyloididae* and eggs of Ancylostomatidae family (4.0%). The results show the applicability of the methodology employed to recovery and detect helminthes from vegetables, considering control trial experiments. In addition, denote contamination by human or animal feces and poor hygiene sanitary quality of lettuces that will be destined for human consumption at both types of cultures systems. Indeed, highlights the need for quality control standards, to ensure sanitary quality and minimize the risks inherent in public health.