

Characteristics of Food Residue in Accordance with Catering habits

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Abstract

Food residue is receiving increasing attention because of its large quantity of production, wide generation and potential environmental hazards. In order to study the composition characteristics of food residue, and to determine the reasonable treatment technologies, ten types of catering habits in Shanghai were sampled, and experimental research was conducted by means of analyzing the variation of moisture content, C/N ratio, salt content and metal elements. The results showed that moisture content varied greatly in accordance with catering habits. The C/N ratio and salt content fluctuated with the change of catering habits. Among the four metal elements, Mg had the highest content, followed by Al, and both Fe and Zn accounted for little content in food residue.

Introduction

Food residue, as one of the most abundant and problematic organic solid waste, is receiving increasing attention in China. It has been the major source of odor emanation, vermin attraction, toxic gas emission and groundwater contamination in collection, transportation and landfill of municipal solid waste due to the high organic concentration. The composition characteristics of food residue varied greatly with catering habits. The aim of this study is to provide a detailed description and statistical assessment of the composition characteristics of food residue generated at restaurants from different catering habits in Shanghai, as a typical city of China.

Method

Ten types of catering habits were sampled, including western-style, local cuisine, Hunan cuisine restaurants and so on. Each type was selected three points randomly and each point was continuously sampled for three days. After pre-treatment, five characteristic parameters (moisture content, C/N ratio, salt content and metal elements) were analyzed.

Results

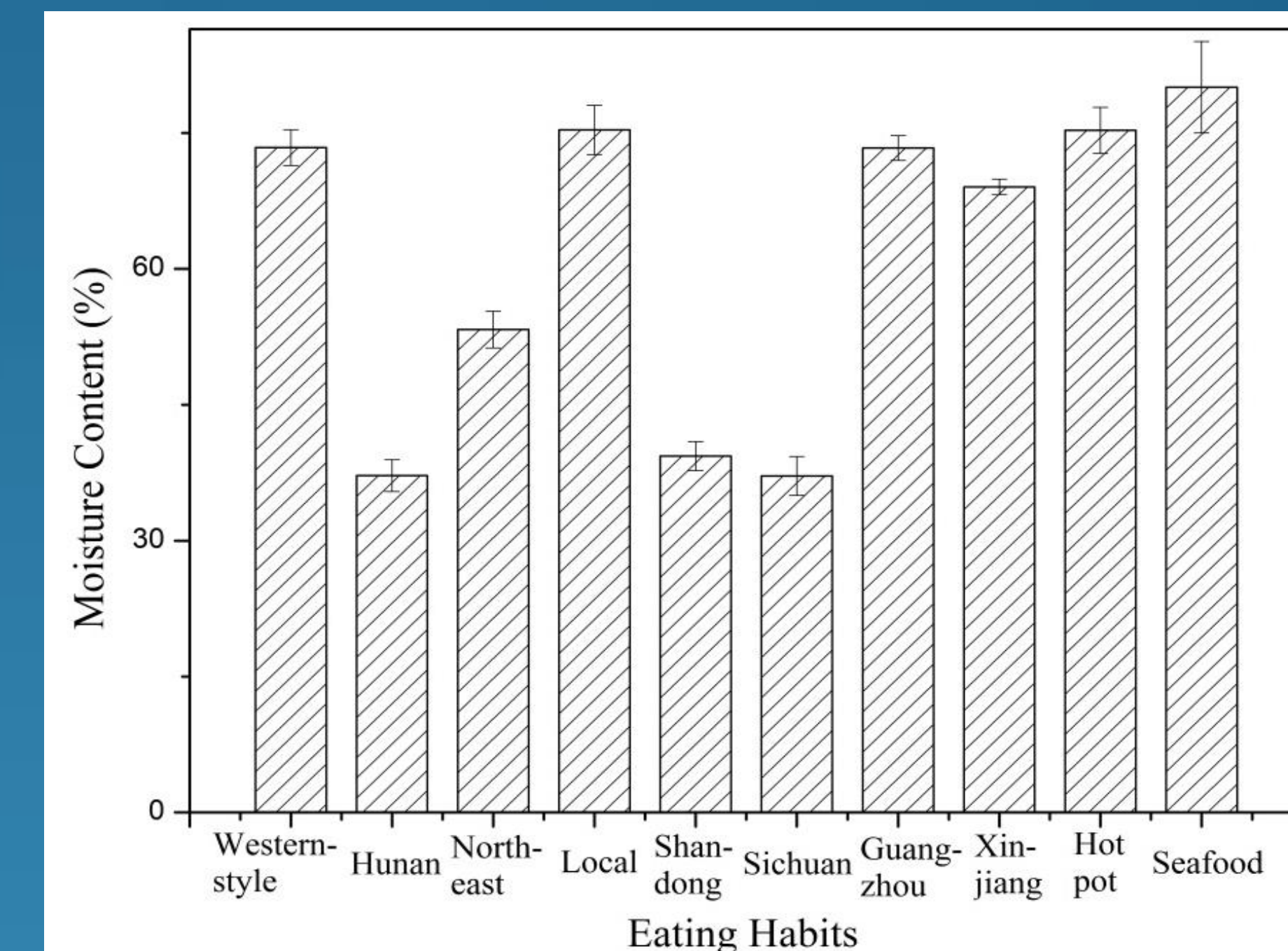


Fig. 1 Moisture content of food residue from different catering habits

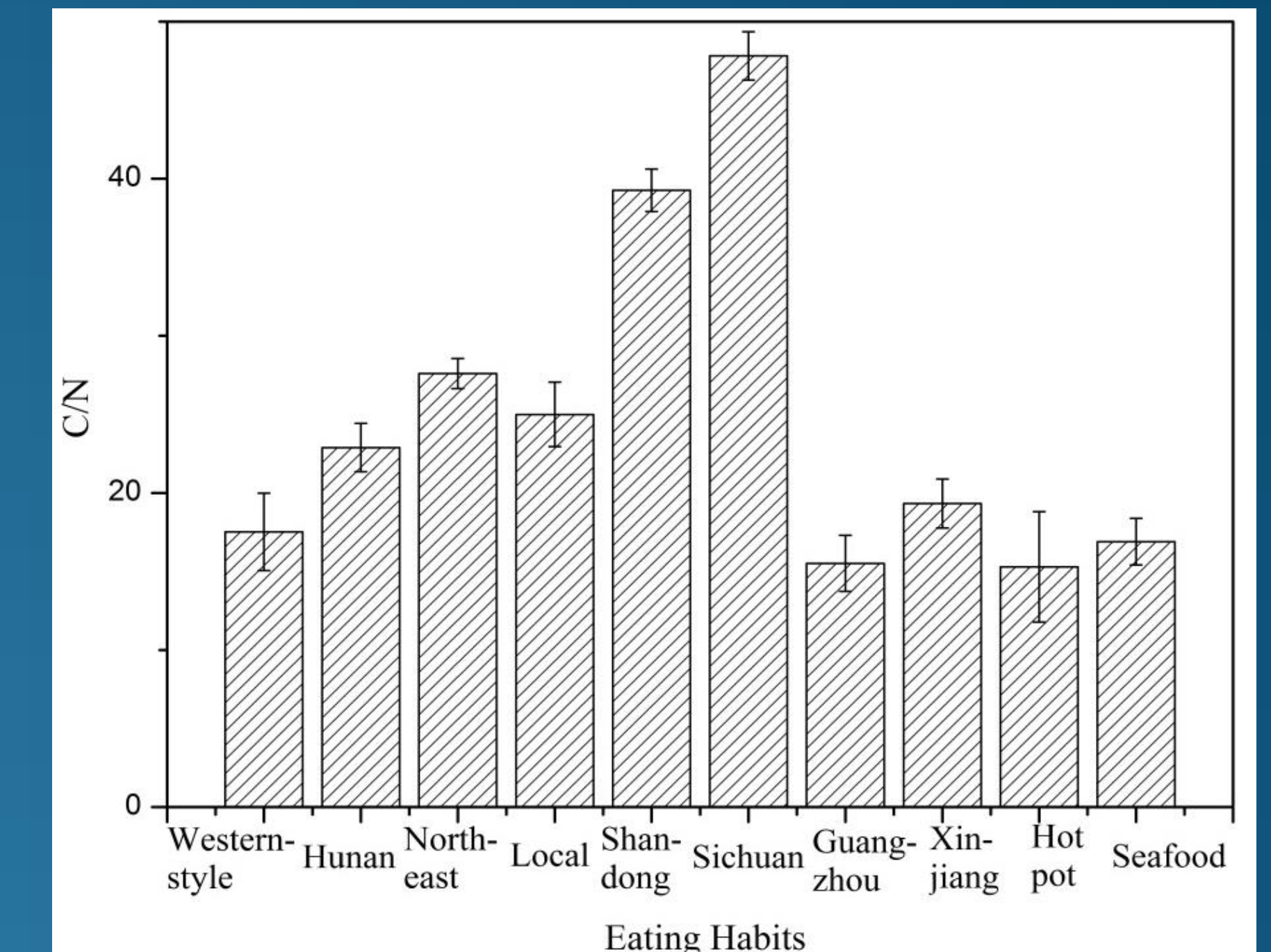


Fig. 2 The C/N ratio of food residue from different catering habits

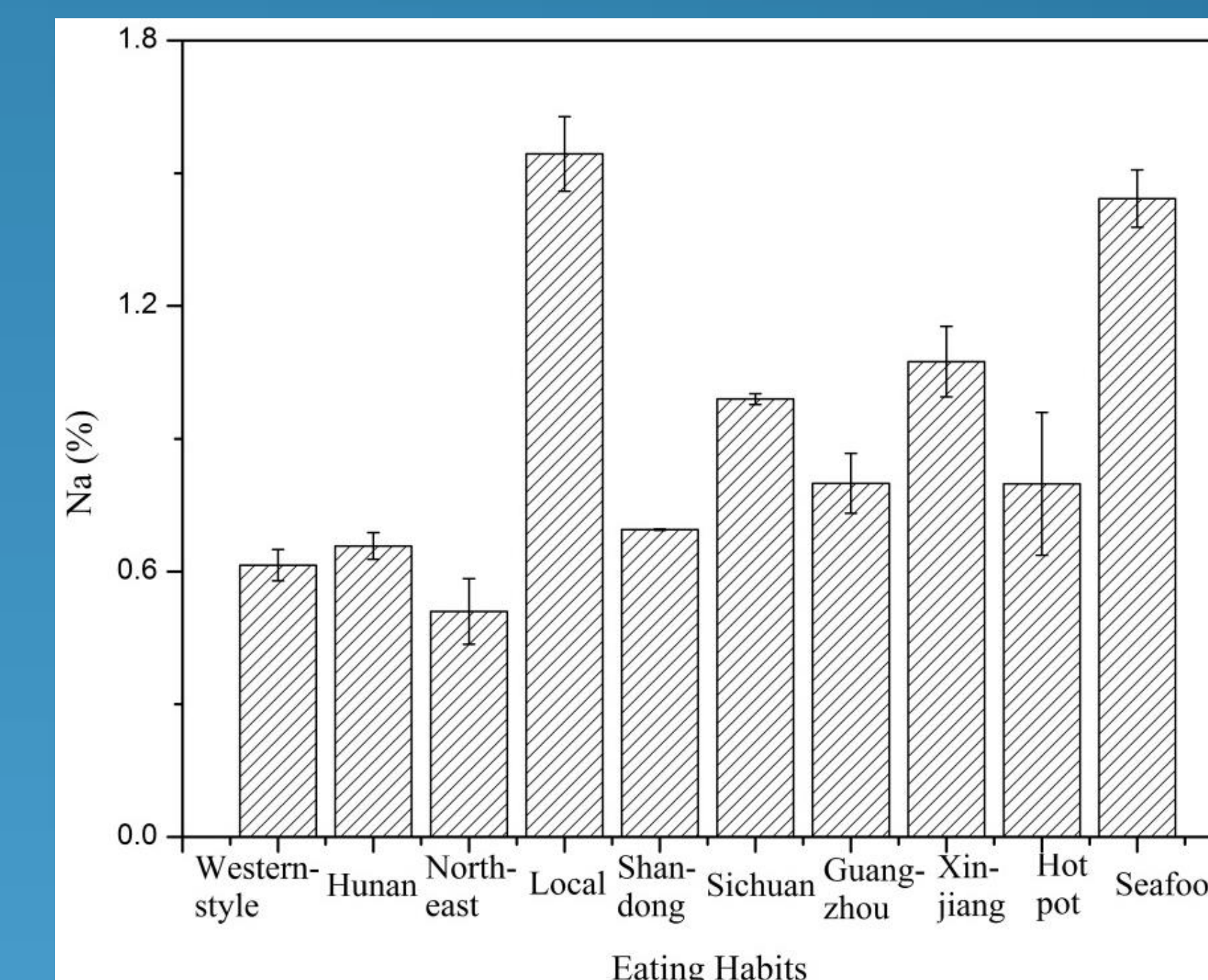


Fig. 3 The salt content of food residue from different catering habits

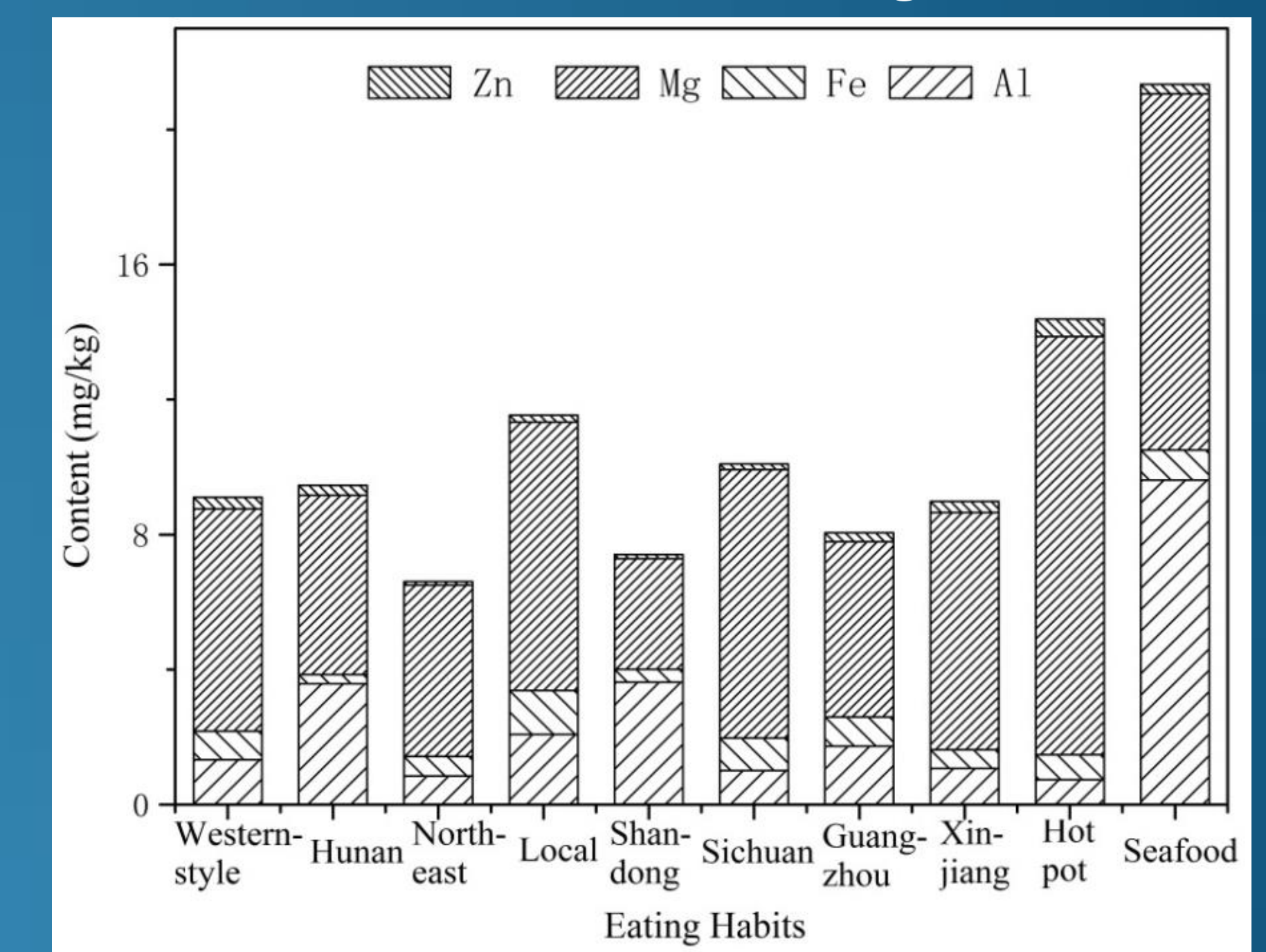


Fig. 4 The metal content of food residue from different catering habits

Conclusions

By physicochemical analysis of food residue, we found that moisture content of food residue varied greatly in accordance with catering habits. Most restaurants had the C/N ratio under 30 and salt content for each type was lower than 1.6%. Among the four metal elements, Mg accounted for the largest proportion, and seafood restaurants seemed to have the highest total value.