Effect of pH and cooking time on shelf life of African nightshade leafy-based sauces

Amina Ahmed[1]*, Gudrun Keding[1] and Elke Pawelzik[1]

[1]University of Goettingen, Division of Quality of Plant Products, Department of Crop Science, Germany
*aahmed1@gwdg.de

Abstract
African nightshade is among the traditional vegetables of high nutritional potential in West and East Africa. However, high postharvest losses minimize consumption. Therefore, sauces formulations of African nightshade leaves with tomatoes, carrots, baobab fruit powder and other ingredients were developed. The sauces were cooked at 87±3°C for either 20, 25 or 30 minutes, filled into screw-top glasses and stored at 22±1°C for 28 weeks. To assess the effect of pH and cooking time on the microbiological status, the sauces were analysed after every two weeks. The sauces with pH 5.5-5.9; 20 and 25 minutes cooking time were stable between 6 to 12 weeks while sauces with pH of 5.9; 30 minutes cooking times were stable for 10 to 12 weeks. Formulations with pH below 4 were stable up to 28 weeks regardless of cooking time. To achieve minimal processing and long shelf life without addition of preservatives, lowering the pH below 4 is recommended.

Keywords: African nightshade, postharvest loss, sauce, cooking time, shelf life