ANALYSIS ON THE BITTERNESS AND ASTRINGENCY OF SOYMILK PROCESSED FROM DIFFERENT SOYBEAN CULTIVARS

Shuntang Guo and Chen Chen
China Agricultural University, China

The soybean products especially soymilk is getting more and more popular globally nowadays. However, most consumers may not accept the undesirable taste of soymilk described as bitterness and astringency. The influences on the soymilk taste of soyasaponins and other soybean constituents in soybean were investigated in this research by analyzing the relationships between their contents and sensory evaluation. The soymilk samples processed from 24 soybean cultivars were clustered into three groups depending on the bitterness and astringency sensory evaluation scores of panelists, including 6 at high level (8.83 bitterness and 9.12 astringency on average), 13 at middle level(7.15, 9.03) and 5 at low level(7.11, 6.81). The correlations analysis indicated that the bitterness showed significant positive correlations with the content of soysaponin, protein, phosphorus and potassium, negatively correlated with the content of calcium. The astringency had perfect positive correlations with the content of saponin, protein, oil and negative correlations with calcium and sodium. The total variation of soybean compositions was explained 79.70% by first three components in the principal component analysis. Samples in the space map of components scores coordinating PC1 and PC2 assembled like the clusters in principle. The loading plot showed the most important variables were the content of saponin, protein, phosphorus, potassium and sodium. The multiple linear regression equations of bitterness and astringency depending on the constituents highly correlated presented the R respectively of 0.786 and 0.878. It would help to evaluate and select specific soybean cultivars for less bitter and astringent soymilk or to improve the taste of soymilk by adjusting the compositions of raw materials.

sxdtcc.cool@163.com