

SOY ISOFLAVONES IN SOY FOOD CONSUMED IN SERBIA

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INTRODUCTION & AIM

The global consumption of **soy-based food** has increased in the last decades due to its nutritional value and the link between consumption and health benefits of **soy isoflavones** such as their anticancer, hepatoprotective, cardioprotective, and beneficial effects on osteoporosis and menopausal symptoms.

The **aim** of the current study was to determine the profile and content of isoflavones in soy-based food available on the Serbian market.

RESULTS & DISCUSSION

Isoflavone content: great variations across the soy-food groups, due to the differences in the raw materials and production techniques.

Soy food group	Mean ± SD (range) isoflavone levels (total aglycone equivalents, mg/kg)
I soy (soybeans, flakes, flour)	1787.1 ± 113.3 (440.4-2546.9)
II meat substitutes	692.7 ± 175.0 (0-2344.8)
III milk substitutes	136.5 ± 22.9 (29.5-605.6)
IV tofu and related products	327.8 ± 36.2 (65.4-811.6)
V soy sauces	14.6 ± 3.63 (0.38-40.0)
VI uncategorized products (oil, sprouts)	45.5 ± 26.2 (0.08-141.2)

METHOD

94 soy foods. **Sample preparation:** homogenization, if needed, degreasing with hexane, and extraction with 80% methanol.

Analytical determination: HPLC-DAD.

Quantification: aglycones daidzein, glycitein and genistein (construction of calibration curves), glucosyl, acetyl and malonyl glycosides (calibration curves of the corresponding aglycone, correction for aglycone-glucoside difference in molecular weight).

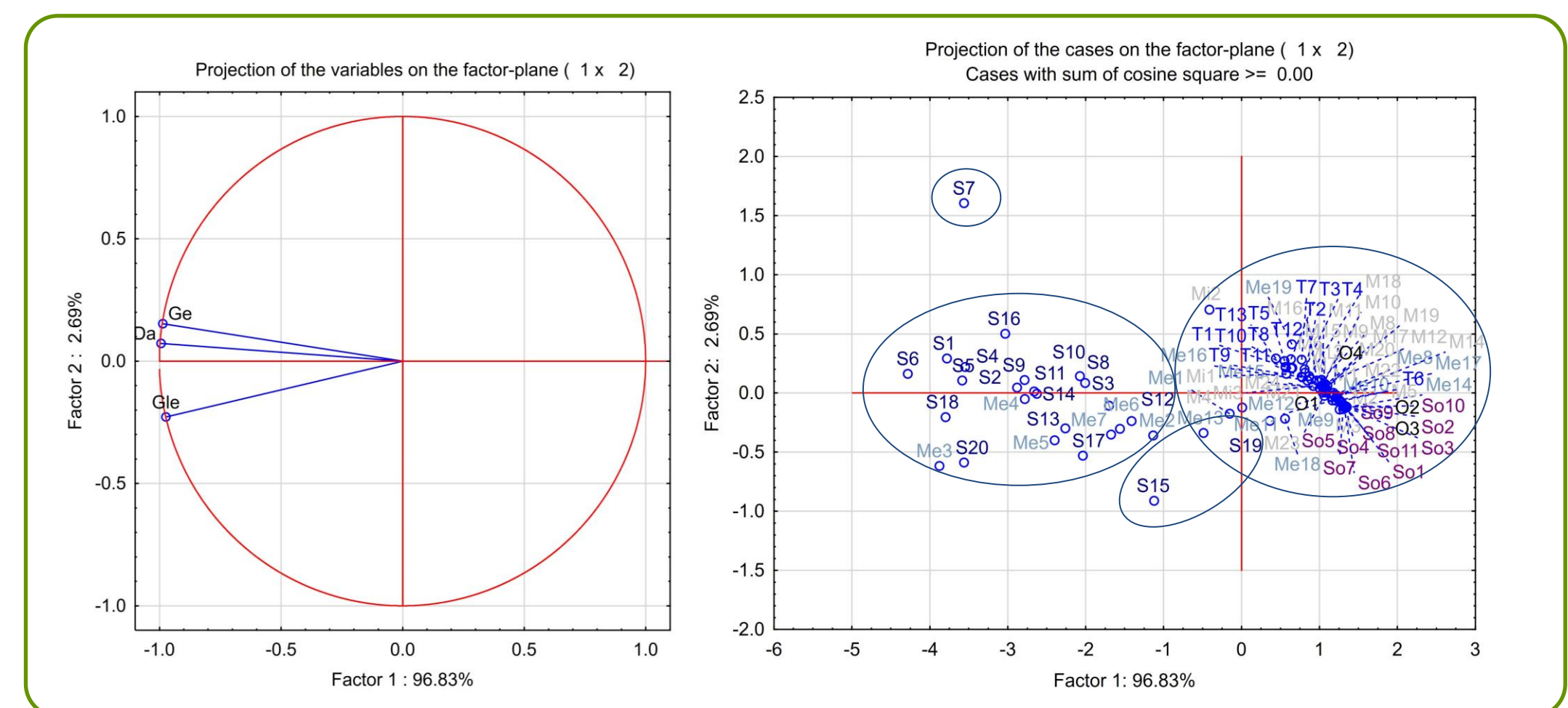


Figure 3. Principal component analysis

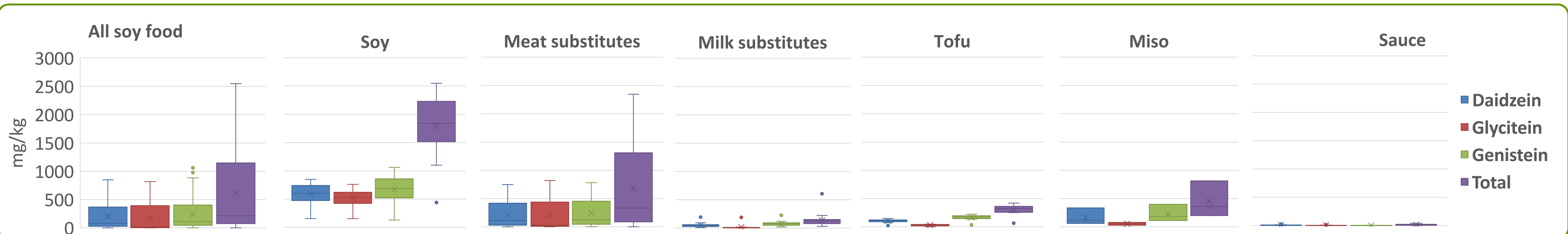


Figure 1. Box-Whisker plot of distribution of isoflavone aglycone concentrations in categories of soy-based foods (whiskers extend from min to max, □ interquartile range, – median, × mean)

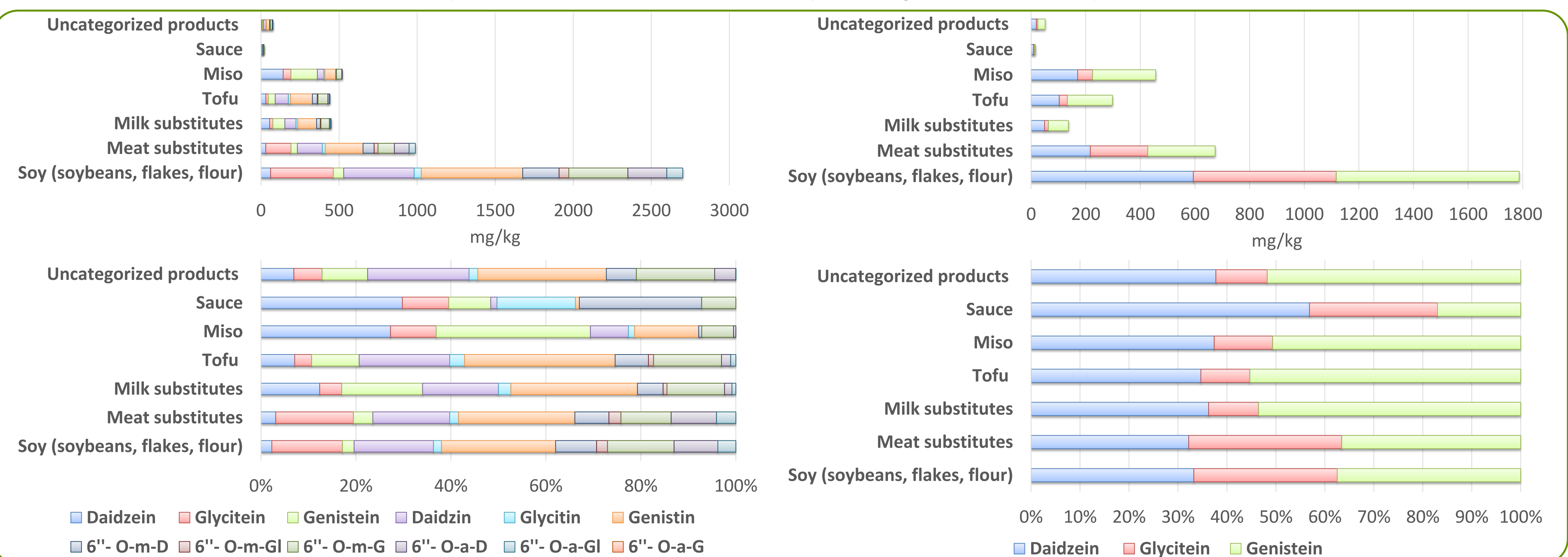


Figure 2. Mean content and composition of individual isoflavones in soy food, by food category (A) concentration, (B) % share in total isoflavones (m-malonyl, a-acetyl, D-daidzin, Gl-glycitin, G-genistin)

CONCLUSION

Isoflavone profiles/content substantially influence their dietary intake and impact on consumers health - the study provided detailed compositional data regarding their most important nutritional source, soy-based food.

FUTURE WORK / REFERENCES

Assessment of human health benefit of soy isoflavones intake through soy food.