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OBTAINING AND CHARACTERIZATION OF SOME SUGAR-FREE RED BEET AND APPLE JELLIES

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Abstract: Making sugar-free jellies is a way to diversify and meet the demands of the consumer market, which is increasingly looking for quality products, especially with a high nutrient content and lower caloric value, whether for aesthetic, physiological reasons or health restrictions. Fruit jellies prepared with natural sweeteners with low or zero calories are healthier and can also be consumed by people suffering from diabetes as they do not affect blood sugar levels. A first objective of this work was to obtain innovative assortments of natural, vegan, sugar-free, agar-agar gelled jellies in four variants: golden golden apple juice jelly, plain (AJ1) and with added cinnamon essential oil (AJ2), respectively red beet juice jelly and golden apple juice, plain (RBAJ1) and with added mandarin essential oil (RBAJ2). The second objective of the work was the analysis of apple juice, red beet juice and finished products in terms of total polyphenol content and antioxidant activity, and the analysis of proximate composition, energy value and organoleptic characteristics of the finished products. Red beet juice was richer in total polyphenols and had stronger antioxidant activity (9.07 ± 0.15 mg gallic acid/g, respectively $\text{RSA} = 48.82 \pm 0.32\%$ for 1:1000 dilution) than apple juice (4.82 ± 0.04 mg gallic acid/g, respectively $\text{RSA} = 44.64 \pm 0.28\%$ for 1:1000 dilution). Also RBAJ1 and RBAJ2 had a higher amount of total polyphenols and higher antioxidant activity than AJ1 and AJ2; within the same category of jelly, those with added essential oil were richer in total polyphenols and with better antioxidant action. Organoleptic analysis using the 5-point hedonic scoring scale method resulted in scores above 4 on all sensory characteristics for both categories of jellies.

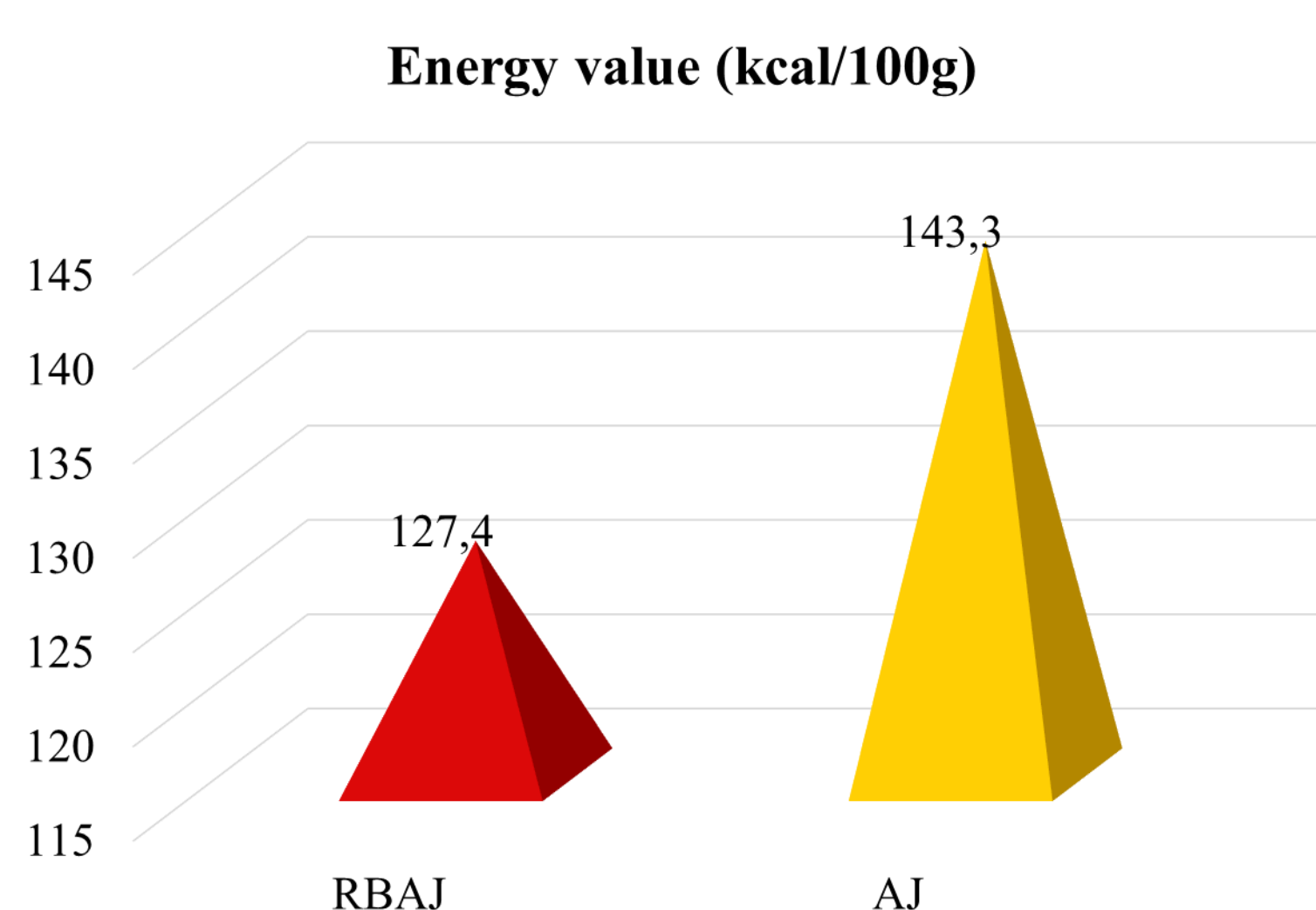
Results and discussions

Sample	Total polyphenols content (mg gallic acid/g)
Apple juice Idared variety	4.82 ± 0.04
Red beet juice	9.07 ± 0.15
RBAJ1	35.02 ± 0.22
RBAJ2	36.41 ± 0.27
AJ1	28.93 ± 0.18
AJ2	30.95 ± 0.21

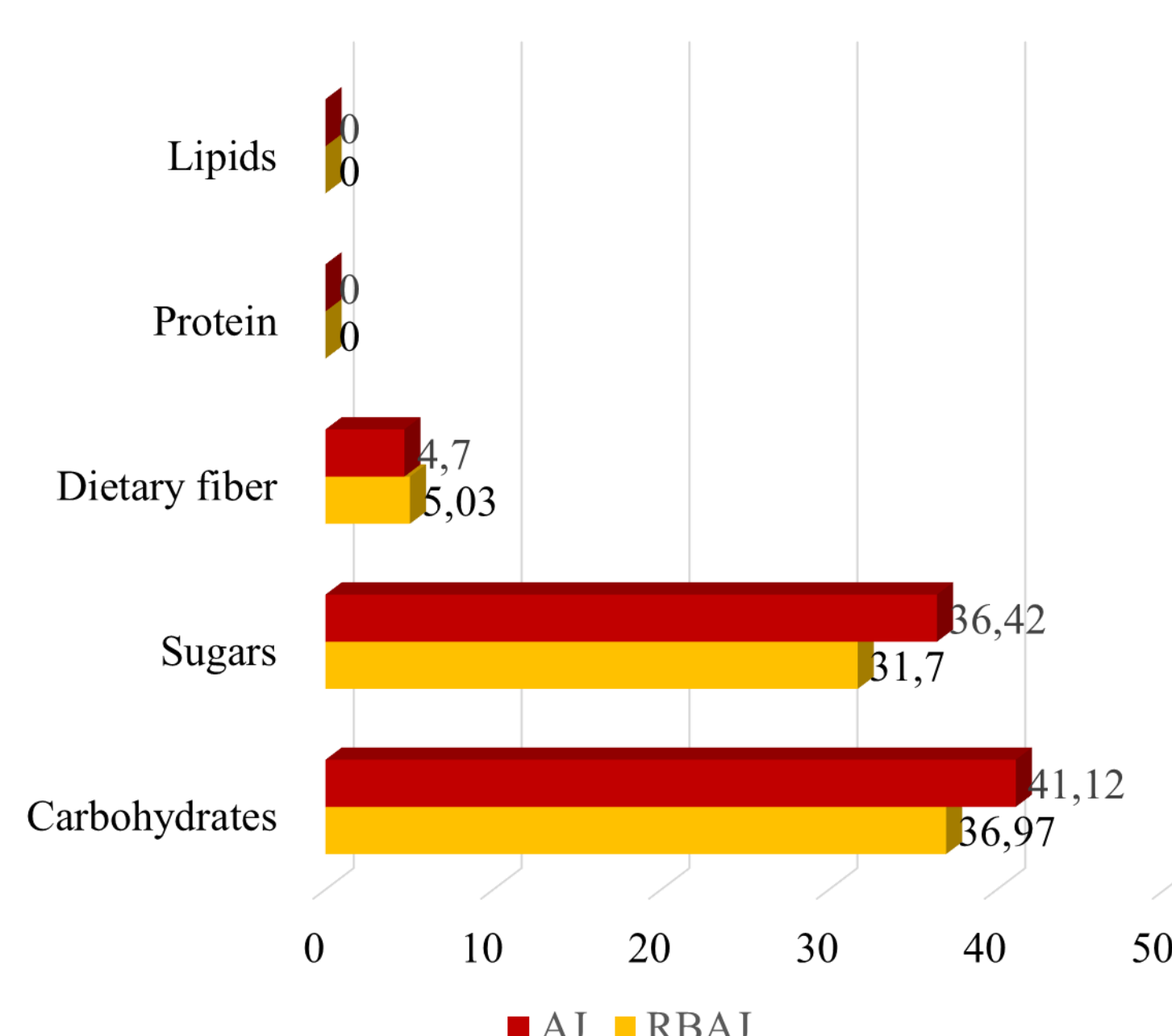
Sample	Dilution	RSA (%)
Apple juice Idared variety	1:1000	44.64 ± 0.28
Red beet juice	1:1000	48.82 ± 0.32
RBAJ1	1:1000	38.92 ± 0.27
RBAJ2	1:1000	40.92 ± 0.30
AJ1	1:1000	35.37 ± 0.13
AJ2	1:1000	37.24 ± 0.23



Sugar-free red beet and apple jellies



Proximate composition of sugar-free jellies (g/100g)



Sensory evaluation scores of jellies

