



Figure 1: Blood glucose response to Vitagen and glucose

Vitagen contained $61.12 \pm 0.67\%$ of carbohydrates, $24.79 \pm 0.58\%$ of proteins, $4.39 \pm 0.71\%$ of fat, $3.09 \pm 0.04\%$ of moisture and $7.59 \pm 0.05\%$ of ash. Mean glycaemic index was 22 and categorized as a low GI product (Figure 1). The mean glycaemic load was 11, thus a medium glycaemic load is provided per portion. Peak time was achieved in 30 minutes and the peak reduction was 26%. Therefore, consumption of Vitagen in the recommended

quantity as a food supplement can be recommended for individuals seeking to control blood glucose levels or reduce caloric intake.

Acknowledgement

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### Technical Sessions : A - 17

## Phenolic compounds and antioxidant activity of *Ampelocissus indica* (L.) planch; a wild grape species native to Asia

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Grape is a natural source of phenolic compounds, that contributes to the sensory characteristics and many beneficial bioactivities, mainly antioxidant activity of wines and other processed food products. Antioxidant activity and phenolic distribution of European grape species have been thoroughly investigated due to their popularity as a consumer product and availability all over the world. However, less amount of research has been done for Asian grape species. Hence, in the present study, we analyzed the phenolic content and antioxidant activity of *Ampelocissus indica* (L.) planch, a wild grape species native to Asia. Ripe wild grape berries were collected from Kanneliya rain forest in Sri Lanka. Seed and skin were separated from the berry and skin/seed was extracted using 80% methanol. Phytochemical screening and qualitative HPLC analysis were carried out to identify phenolic groups/compounds present in grape berry. Additionally, two phenolic compound parameters namely total phenolic content and total proanthocyanidin content, and one antioxidant parameter namely DPPH (2,2-diphenyl-1-picrylhydrazyl) radical scavenging

activity were measured, for the extracts. Phytochemical tests indicated that flavanoids, proanthocyanidins, tannis and polyphenols are present in grape berry. Further, HPLC analysis confirmed the presence of gallic acid and catechin in wild grape fruit. Total phenolic content of wild grape seed expressed as gallic acid equivalents (GAE) was estimated as  $56.69 \pm 0.23 \text{ mg g}^{-1}$  while that was  $23.32 \pm 0.13 \text{ mg g}^{-1}$  for the wild grape skin for the fresh weight of sample. Total proanthocyanidin content expressed as catechin equivalents (CE) of wild grape seed and skin were estimated as  $36.81 \pm 0.17 \text{ mg g}^{-1}$  and  $14.68 \pm 0.21 \text{ mg g}^{-1}$ , respectively for fresh weight of sample. The DPPH radical scavenging assay expressed as  $IC_{50}$  in  $\text{mg ml}^{-1}$  of wild grape skin and seed were  $0.34 \pm 0.002 \text{ mg ml}^{-1}$  and  $0.29 \pm 0.001 \text{ mg ml}^{-1}$ , respectively. The results revealed that the wild grapes native to Asia contain a higher amount of total phenolic and total proanthocyanidin content compared to that of European grape *Vitis vinifera* spp. The antioxidant activity of wild grape is comparable with ascorbic acid as well as European grapes. This study demonstrates that the wild

grape species *Ampelocissus indica* (L.) planch, is a good source of nutritional phenolics and that can be utilized as a natural source of antioxidant.

#### References

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Technical Sessions : A - 18

Wood based cologne from neem

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Perfume is a mixture of fragrant essential oil or aromatic compounds with fixative and solvent. They are used to give the human body, animals, food, objects and living species a pleasant odour. Wood extracts are very important in perfumery because they provide mostly fragrance which gives a smell for a long period of time. In this study, we used several wood extracts, *Azadirachta indica* (Neem/kohomba), *Berrya cordifoli* (Trincomalee wood/ halmilla), *Terminalia arjuna* (Kumbuk), *Bridelia retusa* (katakalla), and *Schleichera oleosa* (kone) to determine the one with the best odour for the preparation of the cologne.

To extract the wood essential oil from neem, several methods were experimented with, such as solvent extraction, using Clevenger apparatus and steam distillation. Out of the wood essential oils, the most appealing one was selected by consulting a panel of 15 people for the best odour. Wood essential oil is usually categorized as the base note. To confirm this, test and control solutions were prepared, and these were left at room temperature for 6 hours. After 2, 4, and 6 hours, the smell of the two cotton fabrics, one soaked with Neem extract and the other with the control, were checked by 15 people. They were asked which fabric had the best retention of the fragrance. Fixative property was checked by two methods, selection by a panel of people and weight loss method. Selection of best fragrance combination was carried out by preparing 7 samples using different essential oils from top, middle and base notes, and these were examined by a panel of 15 people. Quality parameters of the cologne were checked

according to specifications for cologne, SLS 534:1981, and pH, alcohol content and turbidity were checked. Alcohol content was determined by GC. Turbidity was measured by Hach2100Q Turbiditymeter.

Neem, rose, jasmin and lime essential oils were extracted. Neem was selected as the preferred wood fragrance essential oil. As the odour of neem retained for six hours, it was categorized as the base note. Neem essential oil had fixative property. The majority of the panel of 15 people preferred the sample which contained neem, jasmine, rose and lime essential oils. Therefore, this combination was developed in to a cologne (Table 1). The pH of the cologne was 6.5, which is within the SLS specifications while the turbidity was 2.52 NTU indicating that neem oil mixes well with the other components.

Table 1 Composition of the cologne

| Ingredients | Volume (mL) |
|-----------------|------------------------------------|
| *Fragrances | 4 |
| Glycerin | 5 |
| 96% Ethanol | 80 |
| Deionized water | Volume needed to make up to 100 mL |
| Total volume | 100 |

According to GC analysis, there was no methanol and only ethanol was present in the cologne. Ethanol content was calculated as 76%.

The best method for the extraction of neem (*Azadirachta indica*) wood essential oil was steam distillation. Solvent