Effect of the extraction ethanol and maceration time on phenolics of Finnish propolis

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Background

- Propolis, the bee glue collected by honeybees, contains a large variety of phenolic compounds and thus is used in apitherapy and traditional medicine.
- Different concentrations of ethanol and maceration times are suggested for the preparation of ethanolic extract of propolis (EEP) (1,2).
- The purpose of this study was to determine the ethanol concentration for the largest yield of phenolic compounds in the propolis collected in Finland.
- In order to conclude the optimal maceration time for EEP the amount of the phenolic compounds was followed over the maceration time of 12 months.

Materials and methods

- The ethanol concentrations used were 20, 40, 60, 70, 80 and 96%.
- The amount of phenolic compounds in EEPs was analyzed after 0.5, 1, 2, 3, 4, 6, 9 and 12 months using HPLC-DAD (3).
- The antioxidant capacity of the samples was determined using DPPH method (4) after 12 months.

Results

- The largest yields of phenolic compounds for the EEP were obtained with 70 or 80% ethanol concentration.
- Highest total amount of phenolic compounds was obtained within two months.
- There are differences in the optimal maceration time for the solubility of individual phenolic compounds.
- EEPs of 40-95% ethanolic concentration had high antioxidant capacity.
- These results indicate that the optimal maceration time for Finnish propolis is no more than two months.
- With shorter maceration time the best-before date of the EEP products can be set longer.

Conclusions

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References