

Value-adding usage of by-products from steam-distillation for essential oil production

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Essential oils derived from medicinal and aromatic plants are widely used in pharmaceutical, cosmetics and food industry. In the process using steam distillation for essential oil production, large amounts of by-products occur that actually have only minor value and/ or are not well defined concerning their composition and potential areas of application.

Plant based products and extracts bear a variety of health promoting, pharmacologically and biologically active compounds. Thus, by-products of plant distillation can add further value to the raw material and enhance the sustainability of the production process. The aim of our project is to evaluate residual fractions of essential oil production for establishment of an economical resource-efficient extraction of plant material.

The main part of by-products of plant distillation comprise the aqueous fraction called hydrolate (or hydrosol) and the distilled biomass (pomace). Hydro-

lates are present in large quantities and contain volatile and water-soluble compounds, mostly fractions of the essential oil and further plant metabolites. Floral waters such as from roses are used as ingredient of cosmetics and for flavoring food.

In order to support domestic plant distillation industry, plant species, which are important for essential oil production in Germany, have been selected for further investigation within this project.

This poster exemplifies preliminary results on the composition of selected hydrolates and their potential phytosanitary effects. Promising approaches will be pointed out and discussed.

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