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Author: Helena Sovová Marie Sajfrtová Roumiana P. Stateva

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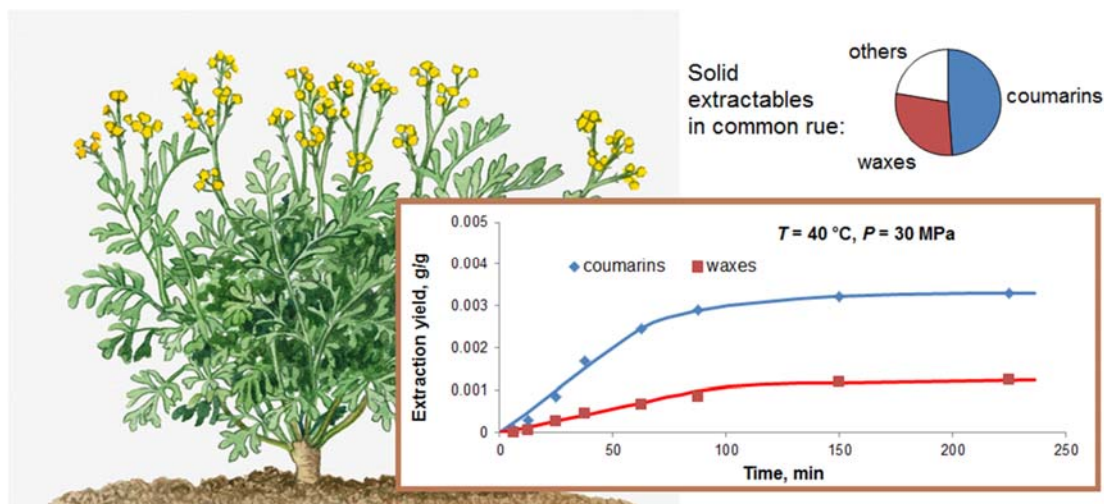
Helena Sovová^{a,*}, Marie Sajfírtová^a, and Roumiana P. Stateva^b

^aInstitute of Chemical Process Fundamentals of the Czech Academy of Sciences, v. v. i., Rozvojová 135, 16502 Prague, Czech Republic

^bInstitute of Chemical Engineering, Bulgarian Academy of Sciences, Acad. G. Bontchev str., bl.103, 1113 Sofia, Bulgaria

* Corresponding author. *E-mail address*: sovova@icpf.cas.cz (H. Sovová).

Graphical abstract



Highlights

- Extraction of 2 samples of rue different in contents of coumarins (C) and waxes (W)
- Solubility of xanthotoxin (one of common rue furanocoumarins) in CO₂ was measured
- C+W mixture solubility in CO₂ was modeled applying a thermodynamic framework
- Extraction curves were calculated using the results of thermodynamic modeling

Abstract

In this work, a multicomponent model for understanding the relationship between the chemical compositions of an extract and extracted plant is developed and presented for the first time. Its robustness and efficiency were validated on the example of furanocoumarins and waxes extracted from aerial parts of common rue with supercritical CO₂ at pressures and temperatures (12-30) MPa

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