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Title: Microcellular foaming of arabinoxylan and PEGylated arabinoxylan with supercritical CO<sub>2</sub>

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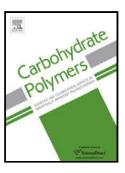
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### ACCEPTED MANUSCRIPT

Microcellular foaming of arabinoxylan and PEGylated arabinoxylan with supercritical CO<sub>2</sub>

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# Highlights

- Polyethylene glycol of various molecular weights were successfully coupled to arabinoxylan.
- The PEG chains act as an internal plasticizer, as indicated by a reduction in  $T_g$  by up to  $25^{\circ}C$ .
- Foaming experiments were conducted in a batch foaming process with supercritical CO<sub>2</sub>.
- The unmodified arabinoxylan sample was found to produce the best foam morphology.

#### **ABSTRACT**

In this study, arabinoxylan extracted from barley husks was reacted with polyethylene glycol (PEG) of various molecular weights to introduce an internal plasticizer into the polymer

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