VTT Biobased Material Solution for Food Packaging

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Plastic – a societal necessity that destroys the environment
Our solutions looks like plastic, it performs like plastic, but it is compostable and made from nature’s very own raw material - cellulose.
VTT Biobased Material Solution

3 layer barrier film structure

- Thermoplastic cellulose
- Nanocellulose film
- Thermoplastic cellulose

Moisture & water vapour barrier

Oxygen, gas & grease barrier

- COMPOSTABLE
- RECYCLABLE in extrusion
- 100 % RENEWABLE
- CUSTOMIZABLE
- HEAT SEALABLE
- Accepts MULTIPLE BIOBASED RAW MATERIALS – use of local resources
- Processable with EXISTING MACHINERY
Global Food Barrier Market and Applications

<table>
<thead>
<tr>
<th>Material</th>
<th>WVTR [g/m²/day]</th>
<th>OTR [g/cm²/day]</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain polyolefin films</td>
<td>10</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>PA, metallized PP</td>
<td>1</td>
<td>10</td>
<td>Nuts, Chocolate, Cheese</td>
</tr>
<tr>
<td>PA, EVOH, PVDC multilayered</td>
<td>0.5</td>
<td>0.5</td>
<td>Crisps &amp; Crackers</td>
</tr>
<tr>
<td>Aluminium foil, SiO₂</td>
<td>0.5</td>
<td>0.5</td>
<td>Coffee, Spices, Snacks, cookies</td>
</tr>
</tbody>
</table>

VTT Material Solution has the potential for 15% market share of multilayered foils

1,2 Mtons $3.6B
Our Current Prototype

100 % biobased, recyclable and compostable packaging solution for dry foods

Our solution will never become plastic waste