INTRODUCTION
Starch is a polymer consisting residue of α-D-glucose units. It consists of unbranched amylose and branched amylpectin. Starch can undergo numerous modifications, including oxidation. Controlled periodate oxidation of polysaccharides results in partial oxidation of the hydroxyl groups on carbons 2 and 3. The partial oxidation of these groups leads to the rupture of bond between carbons 2 and 3 and to the formation of two aldehyde groups in each oxidized monomeric units.

Dialdehyde starch has found wide application in tissue engineering (design of implants), the food industry (preparation of films for food packing), and in biomedical applications (immobilization of bioligands), where they perform the function of cross-linking agent.

DETERMINATION OF UNITS CONTAINING ALDEHYDE GROUPS

<table>
<thead>
<tr>
<th>Sample</th>
<th>ALD, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAS-C_1</td>
<td>25</td>
</tr>
<tr>
<td>DAS-C_2</td>
<td>29</td>
</tr>
<tr>
<td>DAS-C_3</td>
<td>37</td>
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<td>DAS-C_4</td>
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<tr>
<td>DAS-C_5</td>
<td>45</td>
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<tr>
<td>Sample</td>
<td>ALD, %</td>
</tr>
<tr>
<td>DAS_P_1</td>
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<tr>
<td>DAS_P_2</td>
<td>25</td>
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<tr>
<td>DAS_P_3</td>
<td>29</td>
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<tr>
<td>DAS_P_4</td>
<td>33</td>
</tr>
<tr>
<td>DAS_P_5</td>
<td>33</td>
</tr>
</tbody>
</table>

As can be seen, the highest oxidation degree can be achieved at equal proportions of starch and periodate (1:1). Moreover, corn starch, at the 1:1 ratio, is more susceptible to oxidation than potato starch, which was confirmed by the highest percentage content of dialdehyde groups (67%). It can result from different content of amylose in two starches. A higher content of amylose in corn starch than in potato starch promotes the modification process.

SUMMARY
Dialdehyde starch with different content of dialdehyde groups was obtained by chemical oxidation of native corn or potato starch. Spectroscopic results showed a systematic increase in the amount of functional groups for DAS, what is causes a further oxidation due to the further oxidation of these groups. The SEM images of the exposed potato starch exhibit altered structure with numerous holes. Higher magnification allows us to observe sticks and plates scattered in disordered polysaccharide bulk. Some of these plates are arranged parallel, forming packages. This partially ordered structure may be a result of photodestruction of amorphous phase in the sample.

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