

Accepted Manuscript

Starch and starch derivatives in gluten-free systems – a review

Mariusz Witczak, Rafał Ziobro, Lesław Juszczyk, Jarosław Korus

PII: S0733-5210(15)30038-2

DOI: [10.1016/j.jcs.2015.07.007](https://doi.org/10.1016/j.jcs.2015.07.007)

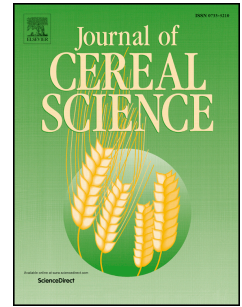
Reference: YJCRS 2019

To appear in: *Journal of Cereal Science*

Received Date: 22 May 2015

Revised Date: 3 July 2015

Accepted Date: 6 July 2015



Please cite this article as: Witczak, M., Ziobro, R., Juszczyk, L., Korus, J., Starch and starch derivatives in gluten-free systems – a review, *Journal of Cereal Science* (2015), doi: 10.1016/j.jcs.2015.07.007.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

1 Starch and starch derivatives in gluten-free systems – a review

2
3 Mariusz Witczak¹, Rafał Ziobro², Lesław Juszcak³, Jarosław Korus^{2*}

4
5 ¹Department of Engineering and Machinery for Food Industry, ²Department of Carbohydrates
6 Technology, ³Department of Analysis and Evaluation of Food Quality, Faculty of Food
7 Technology, University of Agriculture, Balicka 122 Street, 30-149 Krakow, Poland

8
9
10 * Corresponding author. Tel./Fax: +48 12 6624747.

11 *E-mail address:* rrkorus@cyf-kr.edu.pl (J. Korus).

12
13
14 *Abbreviations:* ACWS, air classification wheel speeds; ADA, acetylated distarch adipate; CMC,
15 carboxymethylcellulose; DATEM, diacetyltartaric acid esters of monoglycerides; DE, dextrose equivalent; eGI,
16 expected Glycemic Index; GF, Gluten-free; GFRB, gluten-free rice bread; HACS, high amylose corn starch; HDP,
17 hydroxypropyl distarch phosphate; RDS, rapidly digestible starch; RS, resistant starch; RS1, resistant starch type 1;
18 RS2, resistant starch type 2; RS3, resistant starch type 3; RS4, resistant starch type 4; RVA, Rapid Visco Analyser;
19 SDF, soluble dietary fiber; IDF, insoluble dietary fiber; SDS, slowly digestible starch; TDF, total dietary fiber.

22 **ABSTRACT**

23 A growing demand for gluten-free products is caused by an increasing number of diagnosed
24 celiacs, but also by a trend to eliminate any potentially allergenic proteins in a diet. The removal
25 of gluten from food products traditionally based on wheat, has a significant impact on their
26 structure and texture. It is not an easy task to adjust a recipe for gluten-free products, which
27 would give a product with sensory attributes, nutritional value and consumer acceptance
28 comparable to traditional food. The main raw materials involved in such formulations are
29 starches and flours of various botanical origin in which starch is the main component. Their
30 properties could be additionally modified by appropriate structure- and texture-forming
31 ingredients or additives, including various hydrocolloids, processing aids and stabilizers, as well
32 as nutrients. The role of starch in such systems is always important, as its proper choice and

Download English Version:

<https://daneshyari.com/en/article/6377749>

Download Persian Version:

<https://daneshyari.com/article/6377749>

[Daneshyari.com](https://daneshyari.com)