

Economic assessment of various cultivation technologies of the hulless barley variety ‘Kornelija’

In year 2019, as part of the field trials at the Stende Research Centre, Institute of Agricultural Resources and Economics, 15 different cultivation technologies of hulless barley variety "Kornelija" were tested, experimenting with sowing rates, fertilization rates and regimes, and the use of plant protection products (retardants and fungicides).

The calculation of gross profit margin based on standardized costs of agrotechnical measures and materials, and the results of field trials (yield and quality) identified two cultivation technologies with the highest economic efficiency (refer to the table below). Cultivation technology with the application of retardants and fungicides (planned yield 4 t/ha and seed sowing rate of 350 seeds per m²) has shown both high yield potential and the lowest cost per tonne of grain yield and yield quality composition (protein and β -glucan yield). On the other hand, cultivation technology with a planned yield of 3 t/ha (sowing rate of 400 seeds per m² and without the use of fungicides and retardants) is considered as suitable in conditions when farming is carried out with the lowest possible investment in fertilizers and plant protection products.

Parameter	4t/350+FR	3t/400
Grain yield (t/ha), moisture 14%	5.16	4.25
Protein content in the dry matter, %	17.5	16.1
β -glucan content in the dry matter, %	4.8	4.9
Cultivation costs, EUR/ha	514	410
Cultivation costs in EUR per tonne of grain	100	97
Cultivation costs in EUR per tonne of protein	662	697
Cultivation costs in EUR per tonne of β -glucan	2,414	2,291
<p>Comments: Cultivation technology performance indicators from field trials at Stende in 2019 Stende Research Centre, Institute of Agricultural Resources and Economics. A description of the research methodology and results for yield and grain quality can be found on the website www.kornelija.lv: https://kornelija.lv/wp-content/uploads/2020/02/Kornelija_conventional-farmins-2019.pdf In calculation of cultivation costs, information from the calculation of the gross margin by Latvian Rural Advisory and Training Centre for year 2019 has been used.</p>		

The results of the field trials and the calculation of the gross margin and the break-even price of the cultivation indicate the following:

- Hulless barley variety "Kornelija" has a very high potential as an economically viable food raw material.
- With cultivation costs per 1 tonne, which are comparable to the cultivation costs of winter wheat, it is possible to obtain grain products that are significantly higher in terms of their qualitative properties (protein and β -glucan content).