

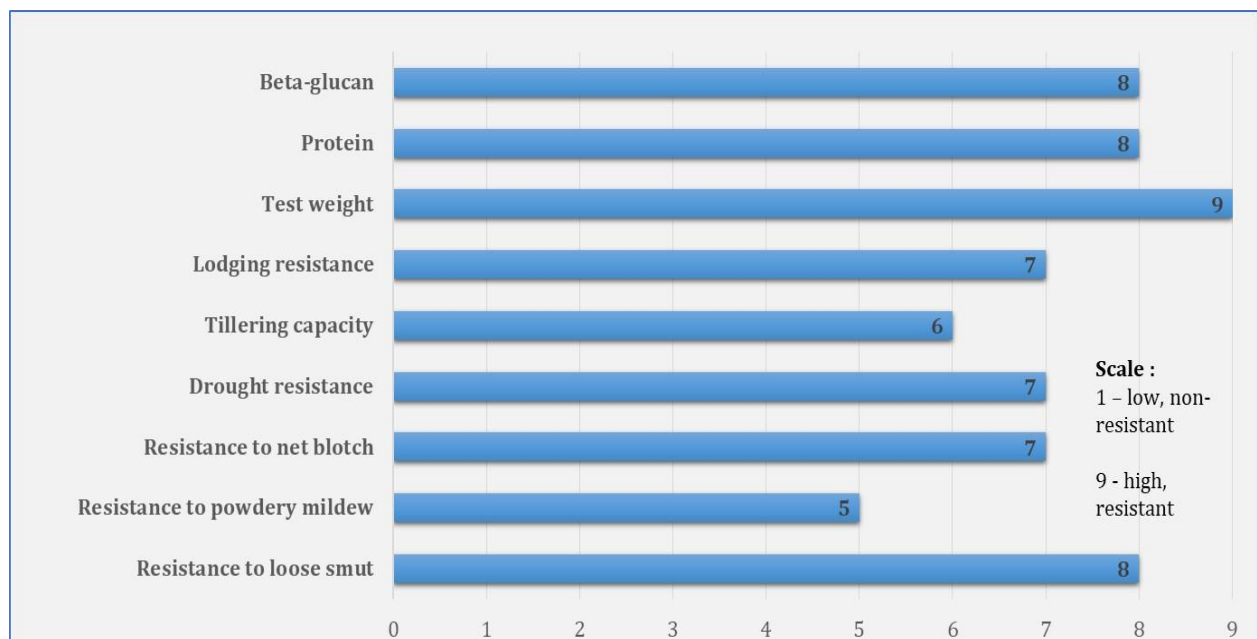
Commercialisation proposal – hulless barley variety ‘Kornelija’

Commercialisation subject

The hulless barley variety ‘Kornelija’ is offered for commercialisation. The hulless barley variety ‘Kornelija’ was developed at Stende Research Centre, Institute of Agricultural Resources and Economics, Latvia. Institute of Agricultural Resources and Economics holds the plant breeder's rights (PBR) in respect of the hulless barley variety ‘Kornelija’: since 2014 the PBR has been granted in Latvia and Estonia, since 2019 – in Lithuania, and since 2020 – in the entire European Union, as well as in the United Kingdom. By Decision No. EU55819 of the Community Plant Variety Office of June 15, 2020, the community plant variety right (plant breeder's rights) has been granted within the area of the EU (Community) for a period expiring on December 31, 2045. This protection of PBR also applies to the United Kingdom.

Since 2014 the ‘Kornelija’ is included in the Latvian Catalogue of Plant Varieties (Official Variety List) and, accordingly, in the EU common catalogues of varieties of agricultural plant and vegetable species. This makes possible to certify, propagate and market seed material of ‘Kornelija’ in all EU Member States.

‘Kornelija’ is a medium-intensive spring cereal variety with a yield of 5.5 t/ha under conventional farming conditions and up to 3 t/ha under organic farming conditions. Productivity of the variety is very early – its growing season is about 85 days, which is significantly less than other barley varieties. Grains of the "Kornelija" variety possess a unique chemical composition and an excellent dietary value, they are a high source of protein and beta-glucans.



Use and advantages of the hullless barley variety 'Kornelija'

'Kornelija' variety grain are suitable for development and improvement of nutritional value of classic whole-grain products like flakes, pearls, bread, and other products, and are especially favourable for development of new niche product recipes (especially for people who have to follow specific diets), as well as for development of new (innovative) functional foods – muesli, energy bars, germinated grain, extruded products, drinks and other products.

The variety 'Kornelija' provides the following advantages for the processing producers:

- provides the grain processor with a purchase price for protein of at least 15% lower than for wheat, and a beta-glucan purchase price of 25% lower than for oats.
- 10-12% higher product yield from 1 t compared to hulled barley varieties.
- Threshability: 97-100% of the grain hulls removes during threshing, eliminating the need for mechanical peeling to provide cheaper and faster processing
- Coarse and uniform grain structure: average test weight 810 g for L⁻¹; weight of 1000 grains approx. 49 g.

For the end-users, the 'Kornelija' ensures the following:

- A high-quality and functional source of nutrients for a healthy diet;
- An opportunity to produce whole-grain products high in protein, beta-glucans and fibre;
- Use as dietary products for disease prevention and diets:
 - for the prevention of inflammatory bowel diseases;
 - for regulation of cholesterol levels;
 - to reduce the risk of cardiovascular diseases;
 - for glycemic index reduction, for diabetes prevention and diet;
 - for strengthening of the body, and prevention of some forms of cancer.

For farmers:

- Very early ripening: takes place simultaneously with winter wheat varieties, excellent pre-crop for winter crop species, ensures diversity of species in crop rotation;
- 'Kornelija' is suitable for the implementation of different cropping and farming strategies: A) high protein content in grains; B) Low cultivation costs per tonne of grain.
- Variety 'Kornelija' ensures increased grain biochemical quality also in organic farming systems.

The agronomic properties of 'Kornelija' have been tested in many field trials using a variety of agro-technologies. The biochemical composition of "Kornelija" grains has been analyzed in the laboratory setting, and compared with other varieties of hulled and hullless barley, as well as with wheat and oats, in order to gain confidence in benefits of the variety. The suitability of 'Kornelija' grains for production and improvement of various foods (and their content) has been tested in industrial experiments. All newly acquired knowledge is summarized and can be found on the website www.kornelija.lv, as well as in scientific and

popular scientific publications. The grain biochemical composition and agronomic and processing advantages of the hulless barley grain variety 'Kornelija' determine the market potential of the variety, especially in geographically and climatically similar conditions to Latvia (in the temperate climate zone in Europe, as well as in the USA and Canada).

Transfer of technology rights

As part of the technology transfer process, the Institute of Agricultural Resources and Economics provides the transferee with:

- Seed of the barley variety 'Kornelija' – "base" (Category B) seed. Minimum amount 50 kg, maximum amount – according to availability at the storage;
- The right to reproduce seed material of the variety by cultivating it for seed with the intention of selling it to grain growers;
- Seed material propagation guidelines;
- Guidelines for growing food grains, including two different technologies – growing for maximum protein content and maximum crop yield;

Technology rights transfer opportunities:

- Transfer of technology rights in the United States and Canada by mutually agreed terms;
- Concluding a license agreement in Europe, under which the fee for the transfer of technology rights consists of 2 components:
 1. Seed material of the hulless barley variety 'Kornelija': Seeds B Category – EUR 60 for 100 kg; Seeds C1 Category – EUR 30 for 100 kg);
 2. License fee of EUR 25 per 1 tonne of seed sold by the right holder to his customers.

In accordance with the procedures provided for in regulatory enactments, grain growers are charged a fee of EUR 2.50 per 1 ha for self-propagated seeds when grown for own consumption on their own farm.

You can get more information and details about the terms of the contract electronically or by calling:

e-mail: kornelija@arei.lv, solvita.survillo@arei.lv

Phone: +371 25 986 504

