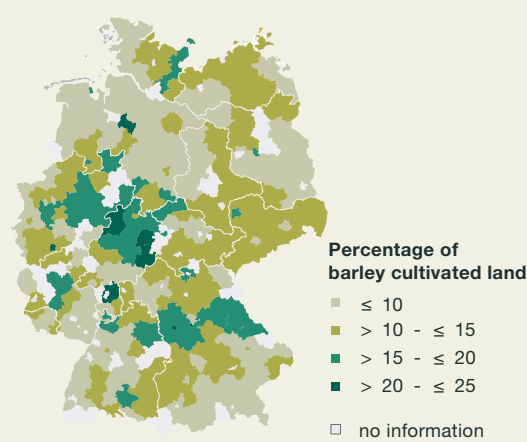


Barley – more versatile than ever

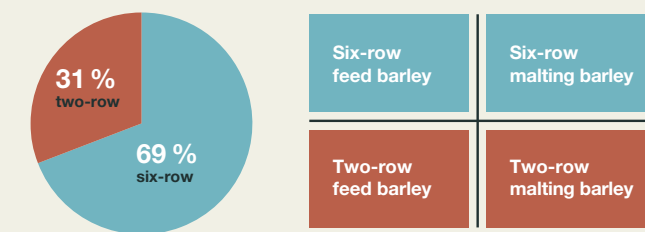
1 Cultivation

Barley cultivation in Germany



Six-row and two-row winter barley

Cultivated land harvested 2018



Spring barley – the base of our beer

approx. 370,000 ha spring barley under cultivation

approx. 80 % of them are malting barely varieties

Advantages of barley in crop rotations

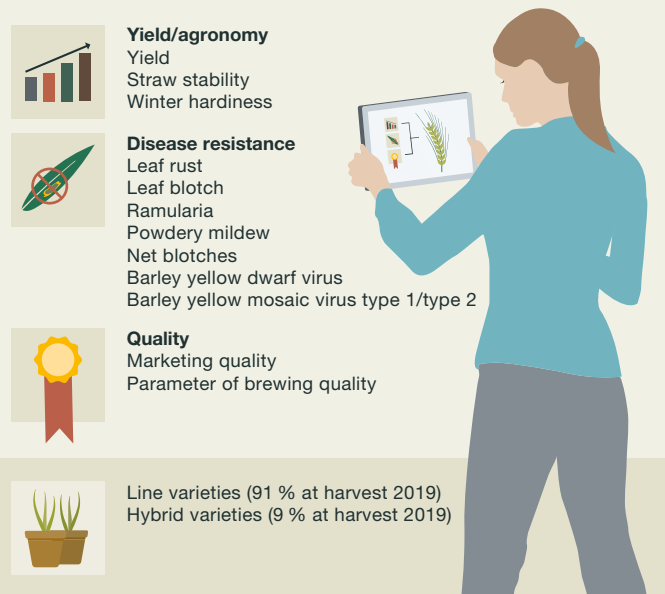
- Ideal previous crop to produce oil seed rape, which benefits from early harvest
- Working intensity is lower than in wheat production
- Labor economy: escape peak in the harvest
- Phytosanitary effect of spring barley due to stretched crop rotation
- Good sales opportunities
- Tolerates early summer drought better than wheat



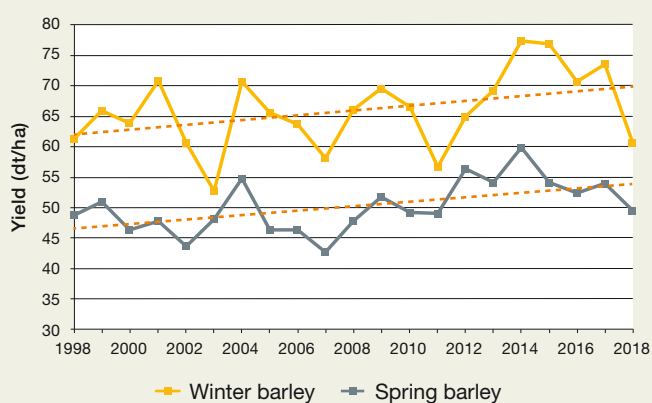
Winter barley
Ø Harvest 2012 - 2018
1.21 million ha/y
8.56 million t/y
Ø 70.4 dt/ha
(destatis 2012 - 2018)

2 Breeding

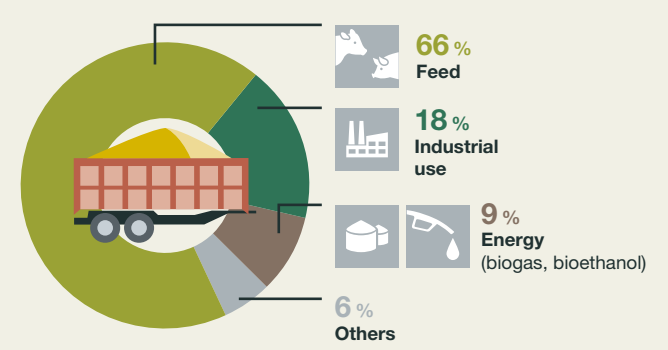
Breeding goals of winter barley



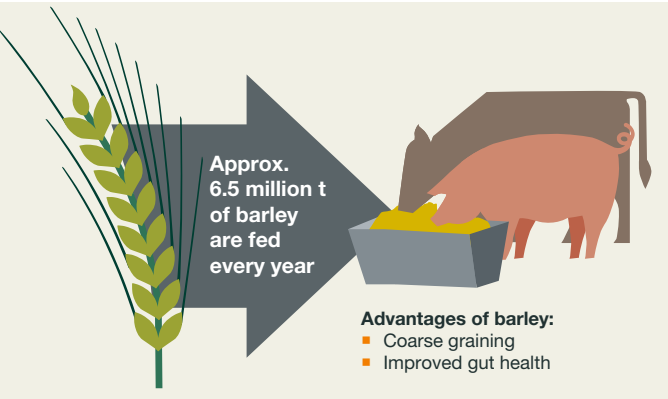
Yield increase of winter barley and spring barley



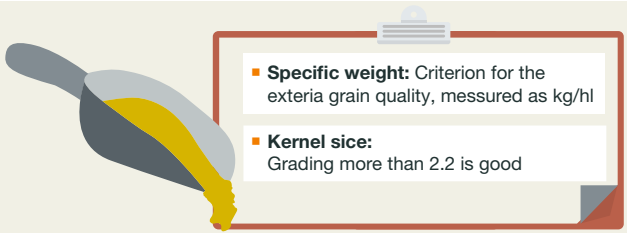
3 Possible uses



Barley: an important feeding component



Quality criteria for feed barley

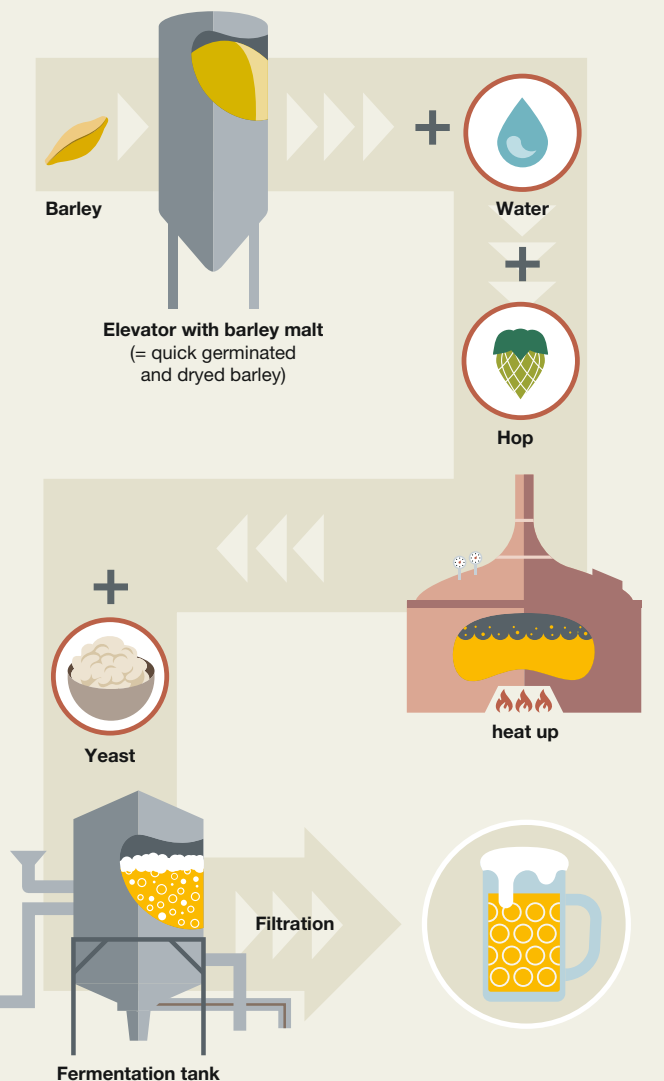


Industrial use of barley by breweries

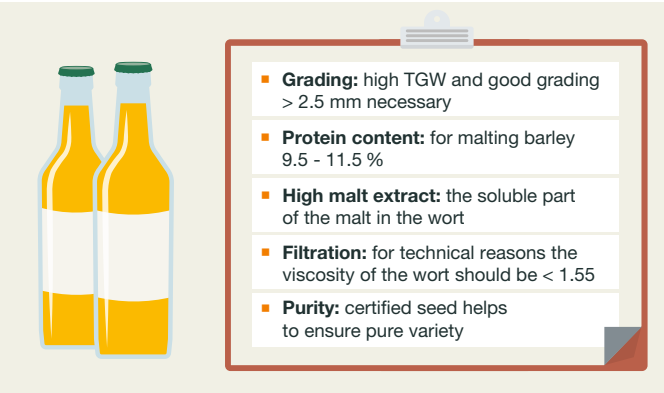


4 Quality

Brewing process: from barley to beer (simplified)



Quality criteria for malting barley



© Cultivation | Barley cultivation in Germany (percentage of barley cultivated land, own report based on the Agrarstrukturhebung 2016); Six-row and two-row winter barley (own report based on Kleffmann Marktforschung 2019); Spring barley – the base of our beer (own report based on agricultural land use destatis 2014 - 2019 and multiplication area, Descriptive Variety List 2018); Advantages of barley in crop rotations (own report KWS LOCHOW 2019)
© Breeding | Breeding goals of winter barley (own report KWS LOCHOW, 2019, Selection of higher ranking breeding goals, Percentage of line and hybrid varieties based on Kleffmann Marktforschung 2019); Yield increase of winter and spring barley (own report based on agricultural land use, destatis 1999 - 2019)
© Possible uses | (own report based on supply balance of cereals 2016/2017; BLE 2018); Barley: an important feed component (own report based on supply balance of cereals 2016/2017, BLE 2018 and KWS LOCHOW 2019); Quality criteria for feed barley (own report based on Descriptive Variety List 2018); Industrial use of barley by breweries (own report based on supply balance of cereals 2016/2017, BLE 2018; beer sales, destatis 2019)
© Quality | Brewing process (own report simplified by KWS LOCHOW, 2019); Quality criteria for malting barley (own report based on Descriptive Variety List 2018 and KWS LOCHOW 2019)