

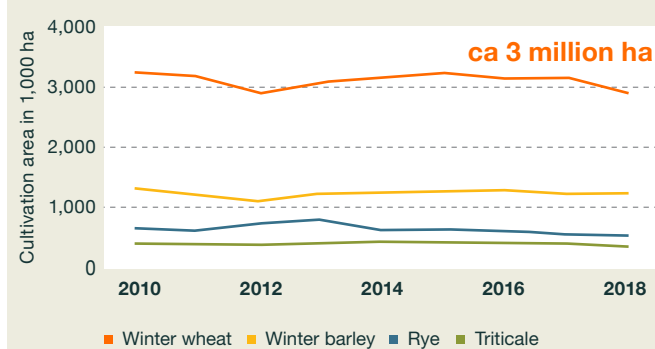
Winter Wheat in Germany: strong yielding, versatile, advanced

SEEDING
THE FUTURE
SINCE 1856

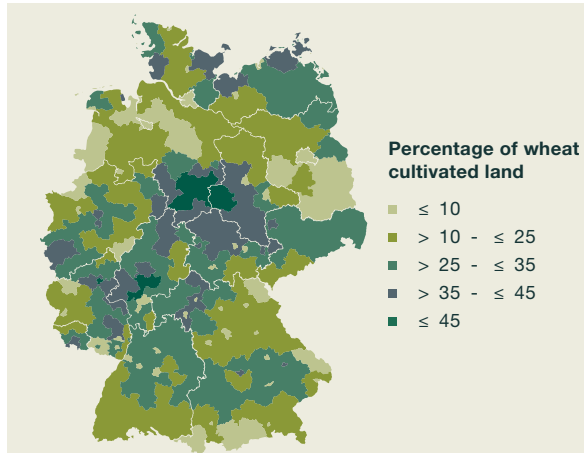


1 Yield development

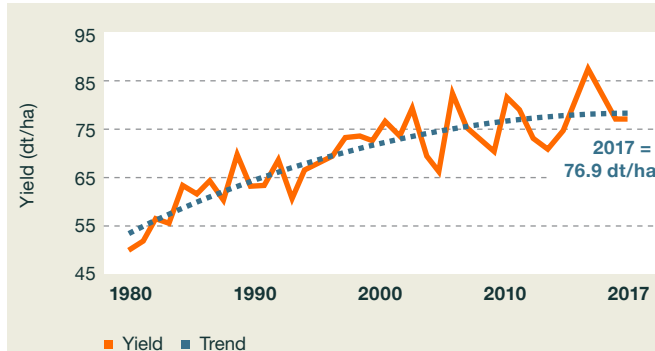
Winter wheat – The number 1 cereal



Wheat cultivation in Germany

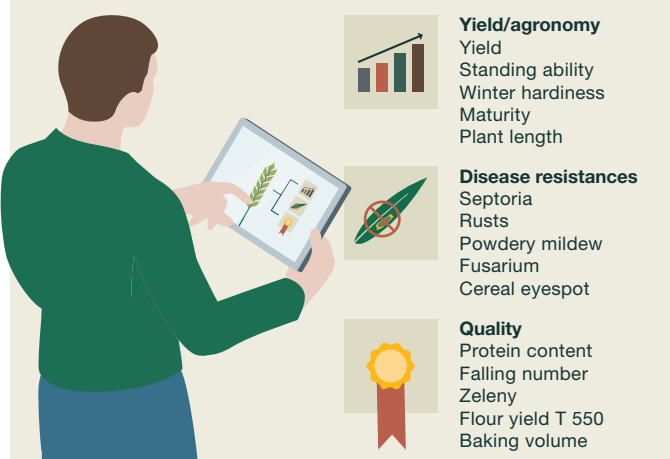


Yield increase more than 50 % since 1980



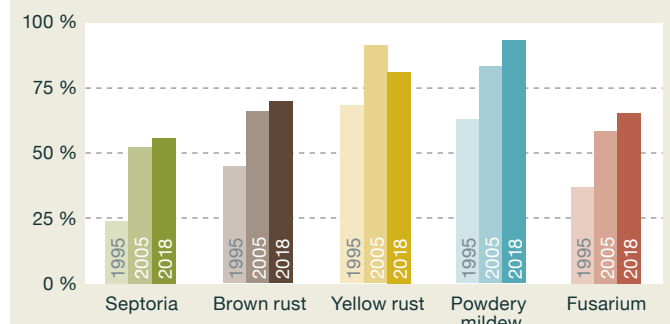
2 Breeding progress

Versatile breeding goals



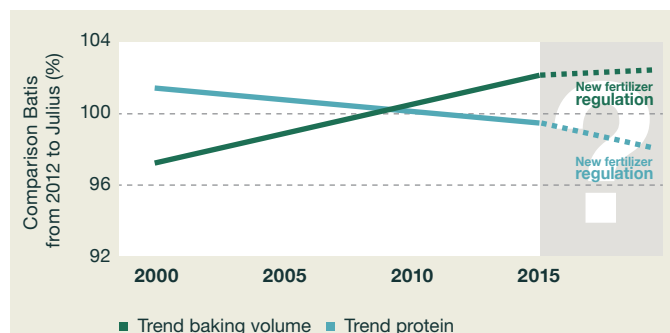
Progress in resistance breeding

Percentage resistant varieties of all registered varieties (Susceptibility ≤ character 4)



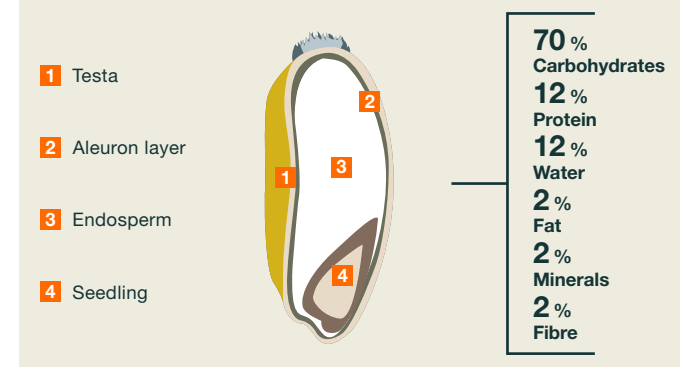
Relation of baking volume to protein content

Nowadays high baking volumes can be achieved with less protein.



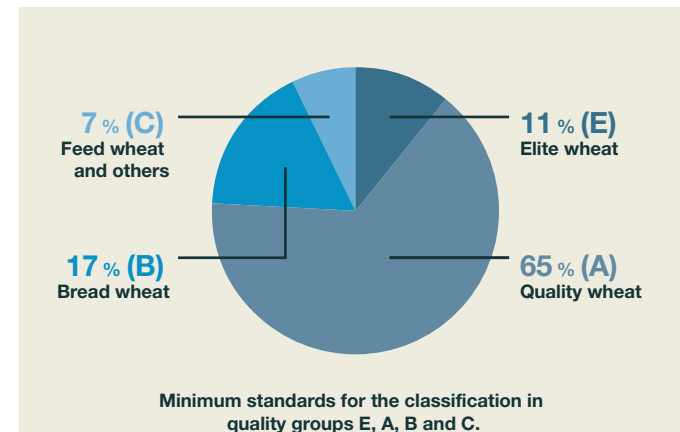
3 Quality of raw material

Structure of a wheat grain

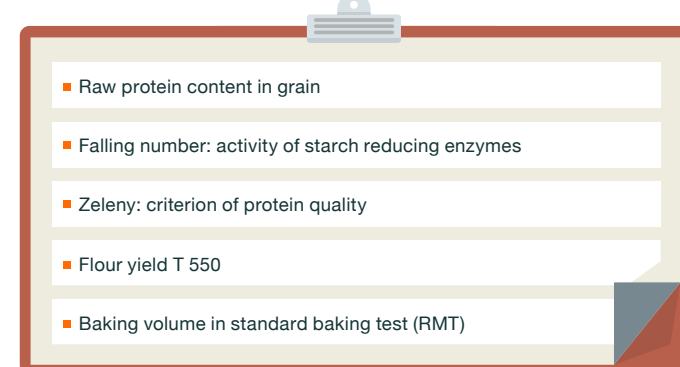


Quality group: A wheat dominant

Acreage at harvest 2018 in %

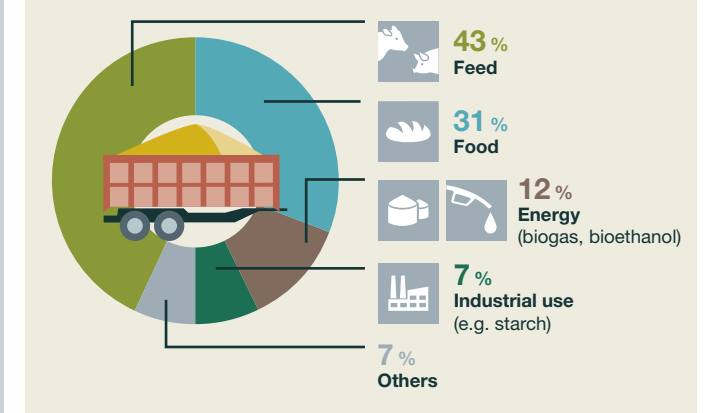


Important quality characteristics

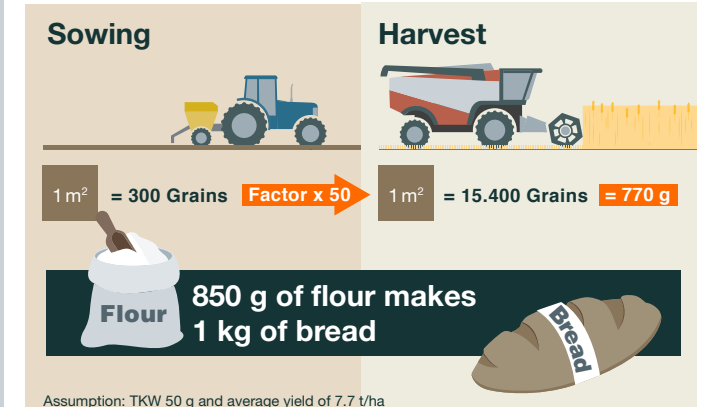


4 Productivity

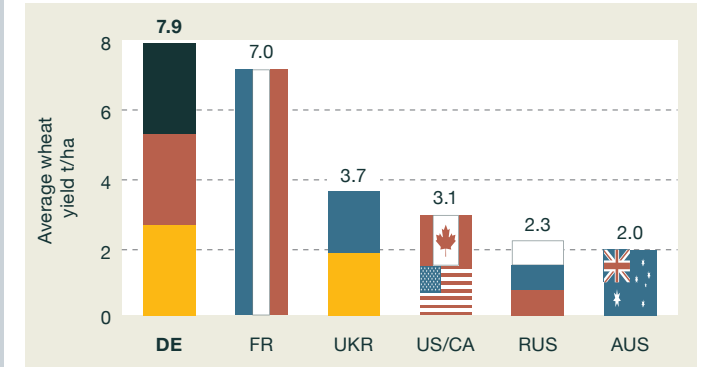
Possible use



Sowing to harvest



Productivity in international comparison (average 2012 – 2016)



Highest efficiency for a sustainable wheat cultivation in Germany

1) Yield development | Winter wheat – The number 1 cereal (Agriculture use of soil 2010 – 2018, destatis 2018); Wheat cultivation in Germany (percentage of wheat cultivated land, own report based on the Agrarstrukturhebung 2016); Yield increase more than 50 % since 1980 (own report KWS LOCHOW, 2018, based on yield development of winter wheat in Germany 1980 – 2017, after 1990 with former Eastern Germany; based on Statistic Bundesamt, 2017)
2) Breeding progress | Versatile breeding goals (own report KWS LOCHOW, 2018, selection of higher ranking breeding goals); Progress in resistance breeding (own report KWS LOCHOW, 2018, Descriptive Variety List 1995, 2005, 2018; percentage resistant varieties of all registered varieties and for the trait described varieties, susceptibility < character 4); Relation of baking volume to protein content (own report KWS LOCHOW, 2018, development of protein content in grain and baking volume of the newly approved winter wheat in relation to the reference varieties: Batis until 2012, Julius after 2012, mean of three years, test report Bundesortenamt)
3) Quality of raw material | Structure of a wheat grain (own report KWS LOCHOW, 2018, ingredient, www.pflanzenforschung.de, 2018); Quality group: A wheat dominant (Kleemann Marktforschung 2018, proportion of the quality group at winter wheat acreage 2018); Important quality characteristics (Descriptive Variety List 2018, RMT = Rapid-Mix-Test, selection KWS LOCHOW, 2018)
4) Productivity | Possible use (own report after supply balance of cereals 2016/2017; BLE 2018); Sowing to harvest (own calculation: 7.7 t/ha = 770 g/m². A thousand kernel weight (TKW) of 50 g gives 15,400 kernel/m², KWS LOCHOW, 2018 and German Farmers' Federation situation report 17/18); Productivity in international comparison (FAO; selection of countries, mean of the years 2012 – 2016, US/CA aggregated)