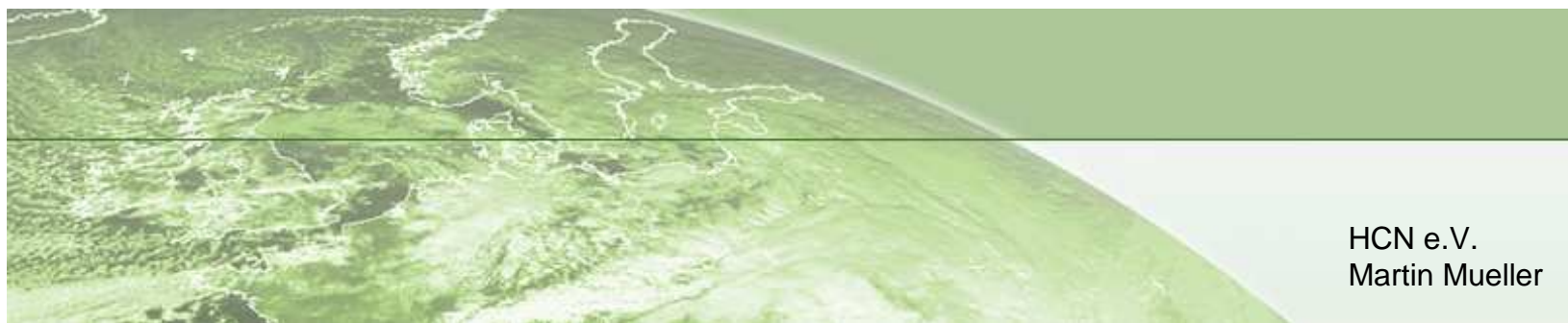


Web-based wood classification systems



Web-based wood classification systems

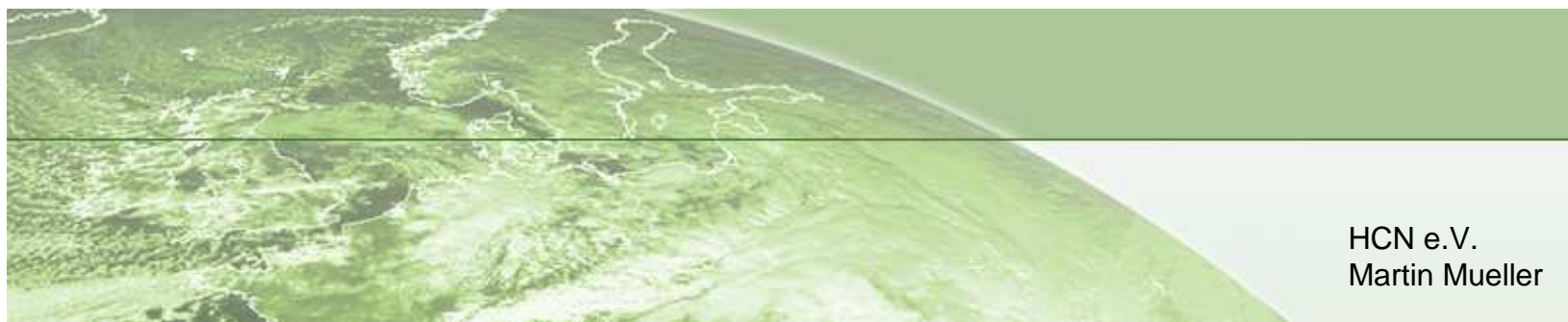




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Communication along the Wood Value Chain

„Entrepreneurial collaboration along the Wood Value Chain in the South Baltic Region“

The shift from a regional to an international business and the new "dynamic" of the sector lead to many structural transformation processes within the wood industry and have changed most of the static relationships between the process partners.

The value added of wood production and processing as a whole is created by complex and highly interrelated operating and exchange processes between forestry and wood industry.

A competitive production aligned with the demand of the costumers, as well as efficient logistics and clear communication processes define the economic success of companies.

In order to assess the efficiency of the value added, networking and an optimal communication between forest owners and companies from the forestry and wood industry, are major issues. In this respect, there are great differences to be found both at regional and transnational level.

Especially, the optimised information flow has become the main element of the value chain, thanks to modern information technologies.

Source: Unternehmerisches Handeln in der Wald- und Forstwirtschaft, 2003 Deutscher Betriebswirte-Verlag GmbH, Gernsbach



Wood Grading Conversion – National Classifications

- National agreements about the measurement and quality assessment of round wood
- National timber grading rules / wood classification standards are not compatible on EU level

- Early efforts to simplify round wood trading inside the EU by European Economic Community (EEC):
 - 1968 Guideline EEC 68/89
 - 2008 cancellation of EEC in case of deregulation processes (no cause to generate a new EU guideline because of the already existing EN)

- 1997 European Committee for Standardisation (CEN) - European Standards EN 1315-1 (dimensional sorting) and the EN 1316-1/2/3 (quality sorting)
- Published in each country – but no legislation

- Purchasing round wood abroad is still difficult
- Several non compatible classification systems in Europe



Wood Grading Conversion – National Classifications

Situation in Germany

- Forst-HKS (Trade-Class-Assortment):
 - Regulated the round wood trading in Germany (since 1968)
 - Based on EEC/68/89
 - Regional additional regulations (loss of transparency)
 - Lost its formal basis at the end of 2008 (lift of the EEC/68/89)
- RVR – Rahmenvereinbarung Rohholzhandel (Agreement on Trade of Round Wood):
 - Initiated by leading organisations of forest and timber industry
 - Agreement of private law
 - National basis for transparent trade of round wood (dimensional and qualitative classification)
 - Will include proven elements of Forst-HKS and EN European Standards



Wood Grading Conversion – National Classifications

Situation in Sweden

- Guideline by VMR (Timber Measurement Council):
 - General basis for the measurement of round wood
 - Broad description of characteristics
 - Difficult to make general classifications of hardwood logs
- Company specific guidelines:
 - Depending on further processes
 - More specific for some characteristics
 - Easy to highlight important or ignore unimportant characteristics
 - Optical/visual representation

STOCKAR



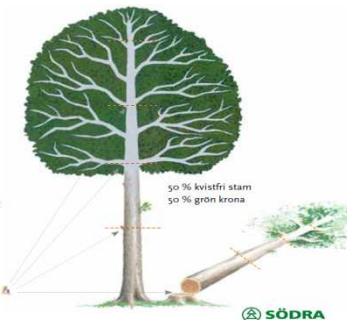
EXEMPEL PÅ BJÖRCKSTOCKSKVALITEER			
Objekt	LQ ₁	LQ ₂	LQ ₃
KVIST			
Frisk kvist	Inga tillåten	Tillåtet max diameter 5 cm	Tillåtet max diameter 10 cm
Torr och ruten kvist	Inga tillåten	1 per meter max diameter 4 cm	1 per meter max diameter 10 cm
SPRICKOR	Djupet för aj överliga toppdiameter.		
Solspäckor	Tillåten med avräkning av volym påverkad av sprickor och misstärkning.		
RÖDKÄRNNA	Upp till 15 % av diameter		
MAJKEÖTA	Inga tillåten	Inga tillåten	Upp till 2 cm diameter
BÖJ			
Långkrök	Diameter < 20 cm: max 1,5 cm per meter stock. Diameter > 20 cm: max 2,5 cm per meter stock.		
Tvåkrök	Inga tillåten	Inga tillåten	Inga tillåten
Spårkrök	Inga tillåten	Inga tillåten	Inga tillåten
SKADOR OCH DEFEKTER	Tillåten. Nedräkning av skadade volymer.		
DIAMETER	18-50 cm mätt på toppdiameter under bark.		

Björk Guide IKEA of Sweden

Apteringsinstruktion EK till Kährs, Nybro. Tel 0481-460 90.
Sortimentskod 0480 min leverans = 3 mto ub.



- Overkvista hela stammen – gå tillbaka till rotänden
- Rotskar** Dubbelsplint mörk – Kährstimmer
Fällkam – jämna av
Rotben – jämna av
Spricka – tillåtet men ger avdrag
Genomgående spricka – energived
- Diameter** Mindre än 50 cm Energived
Minst 20 cm Kährstimmer
Minst 30 cm Blockstock
Minst 50 cm Diamantstock
- Kvist** Frisk, torr eller røtkvist – vänd på bladet
Största och sämsta kvist – kapa mitt i kvisten
- Krökar** Skarp ändkrök – lumpa en kort bit för rakare stock
Slängkrök – energived
Långkrök pilhöjd högst 5% – annars energived
- Skador** Stormskada, lyra, hackspethål
I stockändan – lumpa en bit och höj kvaliteten
I mitten – energived
Metall, svart ved – lumpa en bit, lämna i skogen
- Tillredning** Skotarföraren kappar kvarbliven kvist på stockens undersida samt korrigerar övriga fel vid bilväg



Kährs and Södra



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3rd Project Conference / 13. September 2012

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Wood Grading Conversion – National Classifications

Situation in Lithuania

- LST EN 1316-1:2002, LST EN 1316-2:1999 and LST EN 1316-3:2001:
 - Lithuania Technical Committee responsible for wood (Lithuanian Standards Board LST TK 17 „Woods“, 1993)
 - European Standards EN 1316 transferred into a national standard
 - LST developed own national standard for birch (1609:2001 & substitution 1609:2001/1K:2007)

Situation in Poland

- PN-D-95000:2002 ; PN-92/D-95008 and PN-92/D-95018:
 - PN-D-95000:2002: general measurement instructions for round wood and growth characteristics (e.g. crosscutting and measuring instruction, volume calculation ...)
 - PN-92/D-95008 & PN-92/D-95018: standards for broadleaves (e.g. veneer and plywood)
 - Detailed specifications allow a description of the dimension and the quality of round wood in a uniform and precise way



Wood Grading Conversion – National Classifications

Situation in Russia

- GOST:
 - GOST (Russian: ГОСТ) refers to a set of technical standard, maintained by the Euro-Asian Council for Standardization, Metrology and Certification (EASC)
 - Broadleaved saw logs for the export are sorted based on the Russian State Standards (GOST)
 - GOST 22299-76: general technical requirements for imported and exported production (hardwood round saw-timber)
 - GOST 9462-88: specifications of round timber / broad-leaved species (log requirements for specific purposes)
 - GOST 2140-81: measuring methods
 - GOST 2292-88 & GOST 9014.0-75: round timber marking, grading, transportation, methods of measurement as well as storage instructions

Situation at EU level

- European Standards initialized by European Committee for Standardisation (CEN) (no European law after 2008):
 - EN 1315-1: Dimensional classification – Part 1: Hardwood round timber
 - EN 1316-1/2/3 : Hardwood round timber, Qualitative classification – Part 1: Oak and beech; Part 2: Poplar; Part 3: Ash, maple and sycamore
 - Planned revision of EN 1316 until end of 2011 (CEN/TC 175 WG4 Round wood)
 - No standard concerning the grading of birch round wood



Wood Grading Conversion

- Generated knowledge has been conditioned, consolidated and transferred into an integrated concept for a wood grading conversion system
- Parameters with usable statements within all considered national norms have been selected
- Process modeling and development of mathematical algorithms, that enables electronically supported conversions by means of a background knowledge-base

Evaluation

- Information gaps within the national standards (definite description of parameter)
- More parameters should be considered (number and size of knots, fungus)
- Different preferences regarding the relevance of parameters
- Request regarding the possibility to build an own user-defined parameters configuration (company adopted conversion function)

“... but it demands further development to be really useful!”

WOOD GRADING Conversion

Start Classification

Parameters Classification Compare

Tree species: European Beech - Fagus sylvatica

diameter: 37 cm (without bark)

top diameter: 35 cm (without bark)

length: 4 m

simple curvature: 1.5 cm/m

spiral grain: 5 cm/m

red heart: max 20% of diameter

Convert

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Woodpicker

- Problem: in some cases regions and companies have their own specifications and guidelines regarding the classification of round wood
- Need to communicate individual hardwood quality characteristics
- Prototype of a visual assessment tool
(Swedish industry research project - Business System Development for Solid Hardwood)
- Communication of quality characteristics between timber trading partners
- Communication of crosscutting instruction to instruct forestry service provider (logger, skidder)

System has been improved and adapted to the international requirements within the Hardwoods Are Good project (language, log photos)

“Although the approach to sort wood by visual characteristics is similar to the original wood classification systems, the evaluation of the characteristics does not happen by defined values but on photographs or illustrations. In this way the system is detached from national or regional standards.”

The screenshot shows the Woodpicker web application interface. It includes a navigation menu on the left, an image upload section, and a main content area with text and images related to birch wood quality and HKS (Forest-HKS) classification.



Dipl.-Ing. Martin Mueller
Tel.: +49 (0)3841 / 460 013
Fax: +49 (0)3841 / 460 014
m.mueller@hcn-group.de
<http://www.hcn-group.de>

HCN – High Competence Network e.V.
Poeler Straße 85a
23970 Wismar, Germany
Headquarter Wismar
Register Wismar VR 709



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