Global Movement of Forest Products

Wood Chips
in
Global Trade

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Objectives

- **Outline global movement****of wood chips
  - Exports & Imports – coniferous/hardwood
  - Volumes and Value

- **Differentiate** between wood chip categories
  - Pulp chips
  - Biomass fuel pellets & Biomass fuel briquettes
  - Biomass fibre chips

- **Discussion considerations** re: potential Phytosanitary Risks

World Trade Summary - 2009

- Wood Chips Global **Trade Patterns**
  - Wood chip trade has doubled – since 1990
  - 5% per year growth since 2002
  - 2009 shipments were 20% less than 2008

- *Total Export **Volume** > 23.5 million Oven Dry Metric Tonnes

- Total Export **Valu**e > US $ 1.5 Billion

- *Global **Pulp Chip Survey** estimates:

  - 93% P/P industry chips; 7% Biomass Fuels &Fibre

Coniferous Wood Chip Exports - 2009

- **34+ countries** exported **9.9 million ODMT****
  - Value of exports at port of exit **$735 million US**

- **19 countries ship 96%** of volume & value
  - 6 non-EU countries – 4.63 million ODMT
  - 13 EU Member States – 3.76 million ODMT

- **2008 Exports** totalled 11.2 million ODMT

- Volumes and Values **include Biomass Fuels & Fibre**

****ODMT = Oven Dry Metric Tonnes**

Who Are the Major Chip Exporters – Coniferous

- **United States** – Southern Yellow Pine, Spruce-Pine-Fir, and Douglas fir–2.9 million ODMT
- **Russia** – Larch, Pines, Spruces – 1.2 million
- **Canada** – Spruce-Pine-Fir, Hemlock, - 920,000
- **Australia/**New Zealand – Radiata pine – 785,000
- **Brazil** – Pines – 130,000
- **EU: 22** Member States – Pines, Spruces, True firs, - 4 million

Major Importers – Coniferous Chips

In order of **2009 volumes imported**:

- **Japan** – 1.4 million ODMT
- **Finland** – 1.65 million **Norway** – 380,000
  21 other EU Member States – 4 million MT
- **Canada** – 910,000
- **Austria** – 850,000
- **China** – 105,000

Market Comments

Coniferous Exports/Imports

- **Pacific Rim** Trade accounts for 55%
- **Japan imports** fell by 46%
- China imports softwood chips for the first time in 2009
- **Australia provides 42**% of softwood chips to Asian markets followed by US & Canada
- **Turkish imports** were used for MDF and Particle Board instead of pulp/paper

Hardwood Chip Exports

- **38 countries exported** >13.8 million ODMT
  - Export Values at port of exit $1.54 Billion US

- **17 countries ship 99%** of volume & value
  - 9 non-EU countries – 12.12 million ODMT
  - 8 EU Member States – 661,000 ODMT

- **2008 exports** totalled 17.75 million ODMT

- Volumes and Values **include Biomass Fuels & Fibre**

Who are the Major Chip Exporters – Hardwood

- **Australia**/New Zealand – Eucalyptus - 4.2 million ODMT
- **Chile** – Eucalyptus, other native species – 3.7 million
- **Viet Nam**/Indonesia – Acacia, Eucalyptus, Cajuput, Maleleuca, etc – 2.4 million
- **Congo**/South Africa – Eucalyptus – 2.2 million
- **Uruguay**/Brazil/Venezuela – Eucalyptus, other native species – 1.2 million
- **US** – Eucalyptus, Maples, Oaks, Poplars, etc – 650,000
- **EU: 22 Member States** – Birch, Beech, Oaks, Eucalyptus, Poplars – 725,000
- **Russia** – Birch, Poplars - 160,000

Major Importers – Hardwood Chips

- **Japan** – 9.1 million ODMT
- **China** – 2.7 million ODMT
- **South Korea** – 650,000
- **Spain & Portugal** – 715,000   **Norway & Finland** – 601,000
  22 other EU Member States – 980,000
- **Canada** – 405,000

Market Comments

Hardwood Chips – Exports/Imports

- **Turkish imports** were used for MDF and Particleboard panels
- **China hardwood chip imports** surged 150% in 2009
- **Japan** hardwood chip imports declined by 18%
- **Shortages of hardwood chips** developing in Australia
- **Viet Nam** has increased hardwood chip capacity – lowest price
- **Spain, Portugal**, Norway, Sweden, Finland – primarily focus chips imports on Hardwood species

Biomass Fibre – Exports 2009

- 2009 Exports total **1.65 million ODMT**

- **93%** delivered in wood pellet form
  - Largest export market is the **EU**

- Canada & US shipped >**1.4 million ODMT** into the EU

- **Russia, Australia, New Zealand** shipped > 0.75 million ODMT into the EU

- **14 EU Member States** produce/use/sell 12 million MT amongst themselves

Pulp Wood Chip
<u>Size Categories</u>

- **Wood chip -** traditionally defined as a thin wafer of wood cut at a precise angle to the grain (Random Lengths definition)
- **Size variations** do occur in pulp mills around the world - normally based on acceptability ranges:
  - **Thickness**: 4 to 8 mm }
  - ****Length**: 40 to 45 mm }**90% + of all chips = accepts**
  - **Width**: 15 to 20 mm }

  - **Penalties** for chips that are over-sized, too much bark, or have too many small chips below specs – up to **5% allowance**
  - **Oversize thickness** could range to 10 mm-15 mm – small %
  - **Moisture Content** – target is 25% to 45% species dependent

Biomass Fibre – Fuel/Chips

- **Biomass Fuel Pellets**
  - 65-70% **sawdust (OR** alternative crop products**)**
  - % balance from **ground up** penalty chips, waste, residue
  - **Formed** via moisture reduction, heat, pressure, and sometimes binders
  - **5-6 mm diameter** & 25 mm maximum length*
  - Moisture content range 4% to 8% (max of 10%)

- **Biomass Fuel Briquettes**
  - **"Briquette" name but shapes** of pillow, block, logs, pucks
  - Can be formed up in a fixed **factory** setting or at **roadside** with portable units
  - **Roadside product coarser** - less sawdust

continued →

Biomass Fibre – Fuel/Chips

- **Pillow shaped** briquettes – 50 x 50 x 50 mm
- **Blocks** of 1 or 2 Kilogram ie:100mm x 200x 100mm or 150 x 200 x 150 mm
- **Logs** could be 90 mm diameter x 300 mm long
- **Pucks** could be 25mm x 76 mm
- **Portable Unit Products** may be formed with higher MC , less heat, lower compression
- **Transportation options** may include packaged or bulk

- **Biomass Fibre Chips**
  - Size and Thickness varies – inclusive of waste, residue
  - Sales offers seem to limit maximum thickness and sizes to 50 mm to 100 mm ranges

The Market - Discussion Points

- Global movement of wood chips and biomass fuel products expected **to grow 5% per year to 2020 – primarily in biomass**

- **Reduced Hardwood volumes** from Australia "pending"

- **Increasing levels of hardwood chips** from Viet Nam, Malaysia, Thailand – currently have the capacity to double the existing 2 million MT exports

- **Russia** is a "pending source" of both coniferous and hardwood chips as well as biomass fibre for EU power plants and Asian markets

- **China has a growing appetite** for both hardwood and coniferous wood chips

- Many of the **Hardwood chips are "bark-on" (i.e.: some Eucalyptus)**

The Market - Discussion Points

- **Increasing demand** for biomass fibre:
  - Pelletized fuels or fuel briquettes – home & district heating, power plants
  - Biofuels- Biodiesel/Ethanol
  - Diesel Generator conversions to biomass burning for 5 & 10 MW electrical generation

- **Increasing supply "sources"** for coniferous & hardwood biomass fibre – pellets, blocks, logs, chips – **from non-traditional** chip- producing regions

- **Some countries already impose phtyosanitary requirements** on wood chips and biomass fibre from North America. Will similar phyto rules be imposed on others like Portugal or China where PWN outbreaks are currently expanding or oak species chips are viewed as problematic?

Pathways and Vectors not addressed in this presentation









Regulating for Safe Trade

What are the risks ? **Where are the vectors?**

How will pests move off Pathways?