# Long term storage trials Pieter D. Kofman

## Purposes 1

 Find out how wood dries in piles under Irish conditions

- Find a relationship between simple climatic factors and drying rate
- See what starting date means for drying
- Compare drying in forest with drying outside forest

## Purposes 2

Look at covered versus uncovered
Look at different assortments (3 m pulpwood versus 4.3 m energy wood)
Look at storage duration over two summer periods

#### Method

8 big metal bins with each one truckload of timber on weigh cells
Piles of timber, life size, in each of the 5 harvesting trial sites
Chipping at the same time for comparison





## Overview trial

Bin	Assortment	Cover	Side cover	Loaded	Emptied	Reloaded	Emptied	Storage period
1	3m pulp	yes	No	April 07	September 07	September 07	September 08	5 and 12 months
2	3m pulp	yes	No	April 07	December 07	December 07	September 08	8 and 9 months
3	4.3m energy	yes	Yes	April 07			September 08	17 months
4	3m pulp	yes	Yes	April 07			September 08	17 months
5	3m pulp	yes	No	April 07			September 08	17 months
6	4.3m energy	yes	No	April 07			September 08	17 months
7	3m pulp	no	No	April 07			September 08	17 months
8	3m pulp	yes	No	June 07			September 08	15 months

## Start and finish dates

April 2007
June 2007
September 2007
December 2007
All bins to be chipped in August/September 2008

## Weight loss

- Each bin is weighed every hour for 1.5 years
- Climatic data are collected at the same interval: windspeed, wind direction, temperature, relative air moisture content, percipitation
- Graph is the average weight per week from start until ca 15<sup>th</sup> november



## Data collection 1

From each bin, for 20 (40) logs the following data are collected:

- Dimensions, length, diameter at foot, middle and top
- Bark presence and thickness
- Branch stubs: presence, length and diameter class

## Data collection 2

Weight with and without branch stubs
Each log is chipped separately and the chips sampled for moisture content
For each five logs, the chips are pooled and mixed to measure bulk density

## Results 1

- The trial is still running until September 2008
- No preliminary data available yet for publication

## Results 2

 Very good drying in the bins, not as good in the forest

- Bins very exposed to sun and wind
- Wood off the ground in the bins
- Covered piles in the forest dried better than uncovered

## **Recommendations storage**

Store initially in the forest, but in an exposed site with sun shining on the face of the stack and free admission for wind Store clearly off the ground Cover the piles with either paper or plastic Keep the piles free from sods, stones and logging residues that hinder air movement and damage chippers