TIMBER AND WOOD QUALITY FROM SILVOPASTORAL AGROFORESTRY AND FORESTRY SYSTEMS IN N.IRELAND

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With an atmosphere of ever changing agricultural support mechanisms, there has been a renewed interest in the UK and Ireland in silvopastoral agroforestry systems, where widely spaced, protected trees are grown in grazed pasture. It is well documented that such systems provide a wide range of environmental, landscape, animal welfare and financial benefits, in addition to their sustainability and impact at the social level.

A major factor restricting the uptake of these systems in the UK and Ireland relates to the potential financial returns from such long-term investments. However, despite the fact that economic evaluations for silvopastoral systems are favourable and predict it to be a good financial investment, surveys and questionnaires of farmers/landowners have highlighted their caution to change land use type and invest in growing trees. With increasing constraints and pressure on the farming industry the question of how much will the timber from such systems be worth remains unanswered. This research is aimed at quantifying wood quality and examines the options for timber from agroforestry systems. It makes a tentative estimate of timber value depending on the end use/product.

An existing 16-year-old silvopastoral experiment (originally part of the UK Agroforestry NNE) was utilized to measure timber quality characteristics (utilising St300 acoustic instrument and Pilodyn). The trial has three replicates of Sycamore and Ash grown at wide spacing (400 trees/ha) and in forestry lots (2500 trees/ha). Results will be presented from a sub-sample of trees measured for changes in wood quality at 1.5 m, 2.5 m and 3.5 m above ground level. Additional trees (core trees) were used to obtain wood quality at 1.5 m above ground level. A supplementary study of Ash trees showing stem and branch splitting were also measured to compare with healthy trees. Timber Correlations with other growth parameters (e.g. stem form, tree height and girth) were investigated.

The research also has implications for existing management guidelines for thinning agroforestry systems and the potential threat of wind damage (tree snap) and tree instability. The results may influence the choice farmers have in marketing their timber for a range of end products and provide greater incentive for uptake of silvopastoral options in Ireland and the UK.