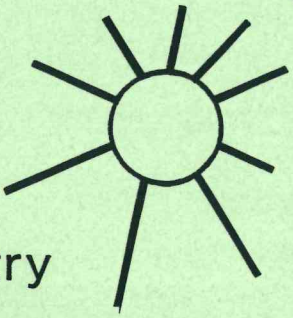
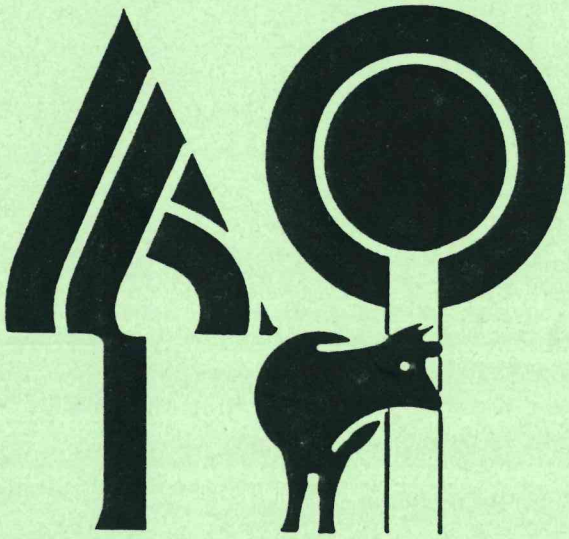
Agroforestry Update



Newsletter for Agroforestry

Researchers and Practitioners



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BRANCHES NOT NUTS FOR THIS "SQUIRREL"

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Agroforestry, the combination of agriculture and wide-spaced P. radiata, is being actively researched in the south west of Western Australia, by the Department of Conservation and Land Management (CALM). One requirement for growing P. radiata in this way, is that trees should be pruned to about 10m. This high pruning is required to increase both the amount of knot free wood in the tree and the amount of light reaching the pasture.

A machine for high pruning these wide-spaced P. radiata has been developed by Crendon Machinery of Donnybrook, Western Australia, in association with CALM. In 1982 a Crendon orchard machine, (trade name "Squirrel") designed for fruit picking and tree pruning, was hired by CALM and its potential for high pruning of pine was assessed. After consultation between Crendon Machinery and CALM, the modified "Squirrel", which was more suited to agroforestry operations, was built.

This self propelled machine is triangular, with an open ended frame which supports an elevating platform. It incorporates a higher ground clearance, increased traction, and higher platform elevation than the orchard machine. It is powered by a 16 HP Briggs and Stratton motor, and is operated by two foot pedals located on the operator's platform. This allows complete freedom of hands to safely operate the hydraulic pruning tools. The maximum height of the platform floor is 6m and the overall machine width is 3m. Crendon Machinery estimate the cost of the agroforestry "Squirrel" in 1985 at $11,000 including pruning equipment.

Time trials showed that pruning with this "Squirrel" is up to nine times as fast as with polesaws, while actual operating costs are only twice those of polesaws. For example, pruning between 2.5 and 5.0 m, up to 37 trees per hour can be pruned using the "Squirrel", compared to 5 with polesaws. Pruning between 5 m and 7.5 m cost 56c per tree using the "Squirrel" and $1.45 per tree using a polesaw. The higher the pruning height, the more cost efficient the "Squirrel" is, compared to the polesaw.

Trials with this "Squirrel" have showed that it could be modified to operate in steeper terrain and to allow more efficient pruning between 7.5m and 10m. A machine to meet these requirements has been built and is being field tested.

Editors note: Since this article was written in 1986, there have been several developments including;

(i) The new "Squirrel", with its higher platform and better traction has proved successful.
(ii) The manufacturers estimate that the agroforestry "Squirrel" would cost from $20,000 (basic model) to $30,000 (top of the range model) in 1990.
(iii) Diesel motors are being used on the later models.