



SASRI's

Mechanisation Reports



ABOVE : SASRI Agricultural Engineer, Peter Tweddle, updating the Mechanisation Reports.

Each year, SASRI updates its Mechanisation Reports which are designed to assist farmers establish the total cost of operating individual machines or complete machinery systems.

MECHANISATION REPORT 1: COSTING MACHINERY SYSTEMS

This report contains cost curves for different machinery systems, and tables showing field efficiencies, operating speeds and performance standards for typical cane handling operations.

Costs include those for interest on investment, depreciation, licences and insurance, fuel (based on a rebated fuel price), repairs and maintenance, tyres and the operator costs. There are separate cost curves for agricultural tractors, haulage tractors, trailers, loaders, implements, attachments, road haulage vehicles - trucks and transloading cranes.

To use these graphs, a grower must have a reasonably accurate estimate of the number of hours a machine will operate per year. In the case of road haulage trucks, the total distance travelled per vehicle per year must be known.

MECHANISATION REPORT 2: SYSTEMS AND COSTS OF LAND PREPARATION, PLANTING AND RATOON MANAGEMENT

The costs given in this report are based on a 200 hectare farm with a replanting programme of 20 hectares per year and using new equipment with 60 kW 2WD tractor costs based on an annual usage of 1000 hours.

Since some expensive implements are only required during replanting operations, they are typically under-utilised, resulting in high implement costs. It may therefore be more cost effective to outsource operations in some instances, for example on smaller farms or with low-use equipment operations. The larger the area to replant or manage, the greater the utilisation of the implement – resulting in reduced cost per unit area.

Further consideration should be given to matching tractors and implements in a fashion that results in the highest productivity at the lowest cost.

The costs for alternative practices are compared throughout the report. A summary table in the report covers a range of infield operations for a sugarcane production system, with equipment use based on 20 hectares (per pass) per year and 180 hectares (per pass) per year for ratoon management operations. These are specified separately for light and heavy soils. The operational costs are given per hectare per single pass only and include the costs of the 60kW tractor. Alternative equipment options are provided to show the combined impact of purchase price, alternative equipment swaths and assumed performances as indicated on per hectare operational costs. These prices are updated annually.

The examples in this report serve as a guide and growers should carefully compare the operations included and adjust these to suit their systems, if necessary.

PRODUCTS AND SUPPLIERS

This report takes the form of a table of typical products that are commonly found in the industry, including a range of tractors, harvesters, cane handling equipment and implements. Up-to-date website addresses for both products and suppliers have been included in the table.

Specific technical information regarding products and pricing can be sourced directly from the local suppliers. Please check with the local dealership on the availability of specific products. Backup service and product support must be considered when comparing similar products from various suppliers.

The Mechanisation Reports can be accessed through the SASA website at www.sasa.org.za. Follow the link to 'Publications' and then 'SASRI publications'

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