



Mechanisation Systems

The increase in minimum labour wage as well as the lack of labour availability or willingness to cut cane, has sparked a renewed interest in mechanical aids to either reduce input costs or provide alternative harvesting options.

Due to their high costs, mechanical harvesters require a large throughput to make them cost effective. The extraction vehicles that support the harvester also need to be taken into consideration. Mechanical harvesting systems also require infield management to minimise field and stool damage due to the high level of infield traffic. The adoption of a fully-mechanised system thus requires careful planning from row spacing through to field extraction roads and routes. With higher levels of infield traffic, more emphasis should be placed on better infield vehicle management practices such as

controlled traffic. SASRI Information sheet 6.7: Factors to consider when implementing mechanised cane harvesting covers a comprehensive list of aspects that should be investigated before implementing mechanised system.

Taking the above factors into account, fully mechanised systems are often unsuitable; semi-mechanical harvesting aids and equipment may then be an option. These options often have other limitations such as the inability to harvest lodged cane, poor base cutting performance or the requirement of a dedicated tractor for the equipment. Some semi-mechanical systems, for example the Thumper®, may have minor advantage in reducing labour numbers, but has the advantage of changing the need for a team of cane cutters (if scarce) to a team that works in conjunction with the machine.

Each system would need to be evaluated against its own merits depending on the circumstances under which it is used. SASRI Information sheet 6.6: Mechanical sugarcane harvesting systems highlights a wide range of equipment and provides details of the pros and cons of particular models. Although some of these are not available locally or have been discontinued, the information can still be used as a guide to assess the suitability of various levels of mechanisation of a farming operation.

An article in the June 2013 Sugar Journal outlined a variety of semi-mechanical and mechanical equipment developed locally as well as details and references to several publications on the subject.

The equipment described in that article included various front mounted cutters; the Orbach Harvester; the Vicro Harvester and the **Cane Thumper®**.

Furthermore, SASRI have recently updated its Mechanisation Reports which includes details of typical products and suppliers that are commonly found in the industry (see mechanisation report article on page 4).

SASRI is able to provide plans for some equipment such as cane cutter mechanisms, quick hitches, crane, HWT tanks etc. SASRI also has a series of videos on local and international equipment options. In addition, growers may request an advisory economic analysis tailored to their farming operational needs to ascertain whether a mechanical aid is comparable or more cost effective than manual labour costs.

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