

TWO WHEEL TRACTOR NEWSLETTER –JULY 2013

Due to various factors, a June issue of the 2WT newsletter was not produced. As this newsletter is only sent out at irregular intervals, do not be concerned if nothing appeared in your inbox in June.

FACASI Africa Project.

An account of the meeting of the ‘Gongli-Africa’ seed drill project committee has recently featured in the Australian rural press. See link:

[http://www.queenslandcountrylife.com.au/news/agriculture/machinery/general-news/ag-
ingenuity-aids-africa/2663493.aspx](http://www.queenslandcountrylife.com.au/news/agriculture/machinery/general-news/ag-
ingenuity-aids-africa/2663493.aspx)

The FACASI project is moving forward, and I am travelling to Tanzania in September. I will be working with Wilson Baitani (Tanzania) and Joseph Mutua (Kenya) at CAMARTEC (Centre for Agricultural Mechanization and Rural Technology) in Arusha. We will be fabricating two prototypes of the ‘Gongli Africa’ two wheel tractor seed drill. These seed drills will be designed to sow two rows of spaced plant crops (maize etc.) and will have superior seed metering systems. Other improved features will also be incorporated, including a high residue kit for conditions where a tined drill will not operate effectively.

Some speciality parts will be airfreighted from Australia to allow for speedy manufacture. As well a local two row prototype is currently being made up in Tamworth using the original ACIAR-Rogro frame. I may produce a short newsletter in August giving a more detailed description of the Australian made unit.

For more details on the improved seed metering systems, see following story.

Upgraded Website for ARC Gongli.

Shandong Yuncheng Gongli (the Chinese Agricultural Machinery Company that manufactures the ARC Gongli 2WT seed drill) has upgraded their website and this drill now has a separate web page.

This page can be found at:

<http://www.ycgongli.com/gb.html>

However if you prefer the English translation, this can be found at:

http://translate.google.com/translate?sl=zh-CN&tl=en&js=n&prev=t&hl=en&ie=UTF-8&u=http%3A%2F%2Fwww.ycgongli.com%2Fgb794943_2411462.html

Is this Disc Concept of value in the Design of a Simple Disc Opener for 2WT Seed drill?

I was recently shown an experimental angled single disc opener that had been manufactured by a leading short line farm machinery manufacturer – Janke Australia. This disc opener is adjustable for offset to the direction of travel through the soil.



Angled single disc – rear view



Angled single disc – side view. Note the offset of the frame to the position of the main axle. The angle of offset can be adjusted by loosening the two rear bolts.



Angled single disc – top view.



Angled single disc – underneath view.

This experimental unit is mounted on a 50 x 16 straight shank. It can easily be modified to suit the ARC Gongli by substituting a 50 x 12 straight shank. It has been designed for fertiliser application, but could easily be used for sowing seeds (note the adjustable delivery tube).

With minor modifications, it could be used as (a) straight ahead cutting coultter (b) Adjustable offset angle single disc opener or (c) Adjustable angle offset unit with an additional tilt (undercut) facility.

Hopefully, Univ. of Southern Queensland student, Sant Kumar Pratap, who is studying the role of disc openers with 2WT seed drills will be able to investigate this principle further.

A detailed look at the Chinese vertical plate spoon type seed meter.

I have imported some of these from China, for use in the FACASI project. They will be installed on the 'Gongli-Africa' seed drills that will be soon built in Tanzania.



The 18 spoon unit is on the left, and the smaller 12 spoon unit is on the right. The seed plate in the 18 spoon unit is 21 cm in diameter whilst the plate in the smaller meter is 15 cm diameter.

The larger unit comes with either a 6 speed or 8 speed gearbox on the back, whilst the smaller one has a 5 speed gearbox.

In both units the exit position for the seeds is adjustable through the multi range adjuster on the side. Exit adjustment is from 135 degrees (three eighths of a revolution) to 180 degrees (half a revolution).



The left view shows a disassembled 12 spoon unit, and the right view shows the 5 speed gearbox. Note that as each seed leaves the pickup on the seed plate, it falls into another cell, and is gently conveyed to the base of the assembly, and thence down the seed tube into the soil engaging tool.

The seed plate as supplied, is specifically designed for maize and other large seeds. However a smaller seed plate is available for sorghum, mung beans, and other small seeds.(see below)



Build quality of these seed metering units is acceptable. I personally prefer the smaller seed meter assemblies, as they will be less bulky to fit to the tool bar on the 2WT seed drill.

However the biggest surprise is that these units are only \$US40-50 each! (ex works China)

Yetter Stalk Devastator.

The Yetter Stalk Devastator –can this technology be downsized to suit high residue situations in Conservation farming with a 2WT?



The Yetter Devastator fitted to a large combine harvester (left) and the results. This stalk roller crushes tough maize stalks as it rolls through the field, preventing premature tire damage. In flattening the stalks, it enhances quicker decomposition, and possibly allows easier conditions for planting of the next crop. The Devastator earned an honourable mention in the residue management category at the USA No-Till Farmer's 2013 National No-Tillage Conference.

This is essentially an 'instant crimper' which does the scrunching of the maize stalks as part of the harvesting operation. With hand harvesting as part of the scene with maize in the developing world, a 2WT fitted with a small version of one of these 'Devastators' may be of value for residue management. It would however be carried out as a separate operation.

A Youtube video of the Devastator in action can be found at:
<http://www.youtube.com/watch?v=n8P3uxH016A>

Several other similar videos of the Devastator are also on the Youtube site.
What do you think?

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Back issues of the 2WT Newsletter can be found at:
<http://conservationagriculture.mannlib.cornell.edu/pages/resources/twowheel.html>

Note: This newsletter has been sent in a low resolution pdf. format for those on slow internet connections. If you require the newsletter or parts of it in higher resolution please let me know.

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