Seasons Greetings



TWO WHEEL TRACTOR NEWSLETTER – DECEMBER 2011

I have finally wound down from the exhilaration of meeting so many 'old mates' at WCCA5. There has also been time for reflection on some if the ideas brought up, as well suggestions for improvement to the design of implements for two wheel tractors.

Several delegates to WCCA5 enquired regarding the fitting of disc openers to the tined drill. There is some discussion on this later in the newsletter.

There has been the publicity from WCCA5, further publicity through an item in the ACIAR 'Partners' magazine, and also assistance from Amir Kassam of FAO. Amir arranged for the ARC Gongli seed drill to be featured through his FAO CA-CoP alert bulletin, which goes to 1000 subscribers.

In the last few months I have had enquiry for the ARC Gongli seed drill from the following countries:

Papua New Guinea - Dept. of Agriculture
Tanzania – a leading 2WT importer and distributor
Thailand – a potential importer and distributor.
Laos – The Laotian Ministry of Agriculture and CIRAD (French foreign aid agency) as a joint venture.
Zimbabwe – farm machinery manufacturer and importer.
Mexico- Farm machinery agent and associated CA farmer group.
Dominican Republic –Inter American Agricultural Institute.
North American NGO working in North Korea.

Communication, quoting, packaging and export from the Yuncheng Gongli factory remain a short term challenge. However I trust that this will be fixed soon, and Mr. Li can arrange quote and supply to any buyer world wide. The latest firm price for the ARC Gongli zero tillage seed drill is $US400 each (ex factory). In my opinion this is a 'bargain basement' price.











My colleagues in Laos have provided some more pictures of a Siam Kubota 2WT fitted with the Thai built seed drill. This drill was featured in an earlier newsletter and has been specifically designed for direct seeding of rice. Mr Suraweth Krishnasrei, of the Agricultural Machinery Division of the Thai DOA (recently retired) , designed this unit;. It appears to have double disc openers, fitted to a simple 50 mm sq. tool bar.



This is another picture supplied by my Lao colleagues. I think it is a cover crop crimper.



This is a two row Knapik (Brazilian) 2 WT seed drill working in CA in Laos. CIRAD has imported some of this equipment for evaluation there. It is rather a classy seed drill, with disc openers for both seed and fertiliser, angled press wheels, and an operator platform. Seed metering is by the horizontal flat plate system. Note the large central steel drive/depth wheel in the centre of the seed drill. About two years ago, Knapik had a price of around $US2000 for this unit (ex factory). However Knapik no longer has a price list on its website.

http://www.knapik.com.br/ (use Google translate if necessary)



This is my first attempt at fabrication of a single disc undercarriage to fit to a 2WT.The discs are 40 cm (16“) in diameter and 4mm thick. Each disc is set at 5 degrees of offset, and no tilt (undercut). Each disc assembly fits into the tine frame and clamp, with a similar depth control mechanism to that for the standard tine. It has yet to be tried in the field.

When designing a single disc opener for a 2WT I have been very conscious of the need to have a simple and affordable unit.



Western farmers use single disc assemblies like this. They are mounted to a mounted or trailing tool bar. However at $1200 to $2000 per row they are out of the question for a 2WT. They are also too complex and too heavy.



This is a ‘Discamate’ single disc opener which is manufactured in South Australia. It is supplied as an ‘add on’ and can be bolted to existing tine assemblies on chisel plough or heavy duty cultivator seed drills. The normal press wheels that are fitted to the tined seed drill are retained. These units are $500 each, and although much simpler and cheaper, they are still basically unaffordable.



Apparently some Australian farmers are making their own ‘Discamate’ style units .I made up this single disc opener using this idea at an estimated cost of $150. I have used a stub axle and hub from a box trailer ($90) and fitted a double bevelled coulter disc ($45). The delivery tube was made up in the workshop. This is what is fitted to the seed drill shown above. Note the operator platform also fitted, as well as the larger press wheels. Perhaps this style of unit is affordable.
This is first single disc opener arrangement I have made.

At an all up cost of $700 (including ARC Gongli basic unit) this design shows promise, compared to the Knapik seed drill.
I have other single disc opener ideas, and I will report on these in the near future.

After discussions with Jack Desbiolles, I have transferred the 2BG-6A rotary tillage seed drill and associated parts to Univ. of South Australia. Jack is working on this aspect of CA with 2WT, along with Abdul Matin of Bangladesh. I will concentrate on disc openers and associated work. Progress reports from Jack will be circulated from time to time.

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Here are some interesting articles on 2WT and conservation farming, extracted from WCCA5.
http://aciar.gov.au/files/node/14068/evaluation_of_the_versatile_multi_crop_planter_for_11859.pdf

http://www.slideshare.net/johick68/versatile-multicrop-planter-for-twowheel-tractors-an-innovative-option-for-smallholders-enamul-haque

http://aciar.gov.au/files/node/14068/conservation_farming_implements_for_two_wheel_trac_12672.pdf

There is also another article entitled 'Improving backfill in rotary tillage systems' by Abdul Matin and Jack Desbiolles. However I cannot yet find the Internet link.

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An International conference on the theme: 'Conservation Agriculture for small holders' is being planned for February 2013 in Dhaka, Bangladesh. –more details in later newsletters.

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As some of you may know, I am now of senior years (turn 73 years old this month) and am at times not capable of swinging the crank handle to start the motor on the DF-12 2WT.

I enquired of a self starter from Mr. Sun Liangjun of Dong Feng (Mr. Sun is a regular contributor to this discussion group). He is evaluating a spring loaded starter which is available for these motors. He will purchase and freight one to me if it is satisfactory.

With this starter, one winds up a spring in the unit. When full tension is reached, the spring is tripped, and this turns the motor over to start the engine.

Finally, best wishes to all for the Christmas and the New Year. In some ways, the year 2011 has been one of significant achievement, thanks to the teamwork of many colleagues World wide.

Until next issue.

Kind regards,

Jeff Esdale

Note: This newsletter is in low-resolution pdf form. If you would like any of the pictures in a higher resolution please let me know.