

TWO WHEEL TRACTOR NEWSLETTER JUNE-JULY 2016

Latest on direct seeding with 2WT in Laos.



Direct seeding of rice in Laos, using a Thai made seed drill.



The same crop at 10 days (left) and 35 days (right)

John Schiller, an Aussie honorary senior fellow with University of Queensland, has sent me details of progress with mechanised direct seeding of rice in Laos. John has been a joint supervisor in this International Aid project to Laos for several years now. Mr Sysavanh Vorlasan of Laos supplied the data.

A group of farmers in Outhoumphone district of Savannakhet province were involved in the assessment of the potential of the direct seeders which were imported from neighbouring Thailand. Pictures of the 'works in progress' are shown above.

Average yield in the direct seeded crops were always at least equal to (and sometimes slightly higher) than for transplanted rice (an average of 4.70 t/ha for fertilized direct seeded rice, compared to 4.56 t/ha for fertilized transplanted rice. Slightly higher yields were obtained from the direct seeding treatment when the fertilizer was applied at sowing relative to post-germination application (4.42 t/ha), compared to an average yield of 4.38 t/ha for the fertilized transplanted crop. Also, regardless of the method of planting, application of fertilizer doubled crop yield from around 2.3 T/ha to 4.6 T/ha.

Average gross return from the direct seeded crop was US\$ 960/ha for the direct seeded crop, and US\$ 936/ha for the transplanted crops. In terms of net return after land preparation, labour and

fertilizer inputs, the return averaged US\$ 155/ha for the direct seeding plus fertilizer treatment, compared to US\$ -46.90/ha for the transplanted plus fertilizer treatment.

In terms of both yield potential and economic returns, direct seeding offers a more attractive option for farmers in the rain fed lowland cropping environment than transplanted rice, particularly in areas with rainfall uncertainty at the start of the wet-season and on account of the reduced labour availability and increasing labour cost for transplanting of rice crops.

An Australian aid agency has now opened an appeal for the supply of a number of direct rice seeders for 2WT, to be donated to selected farmers in Laos. It is hoped that as a result, the ‘seeds of change’ will occur, and a local industry for the manufacture of direct rice seeders will follow. One small local Lao company has already fabricated planters. Further details on request.

Progress in Cambodia.

Another Aussie ex-pat, John Muir has sent me some pics, of similar work going on in Cambodia. In this case, mung beans are being direct seeded into both bare fallow, and heavy residue conditions.



Note the four row planter, fitted with double disc openers.

This project is being conducted by various overseas aid agencies, in cooperation with NGO's and also the Cambodian Agric. Research & Development Institute (CARDI). It builds on previous R. & D. work over several years to locally design and fabricate suitable 2WT planters in Cambodia.

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Is an alternative trailing two row planter a viable option for 2WT?

Most of the R. & D. effort for the last ten years with CA planters for 2WT has been with mounted or semi-mounted seeders and planters, which are either bolted to the transmission, or rigidly hitched to the drawbar of the 2WT. The one major exception to this approach has been the Fitarelli two row trailing planter, which is available in disc or tine opener versions. Although in many situations it has been an excellent planter, this unit has only received limited acceptance for several reasons.

1. Landed cost of these planters in many parts of the world is expensive (\$US4000).
2. Turning radius is too big for small fields.
3. Considerable effort is required to manually raise and lower the soil engaging tools, which can tire the operator.
4. Seed and fertiliser metering systems are only average in performance, and other superior systems are now available.



Despite these shortcomings, the Fitarelli planter is always the most popular unit at field demonstrations, and always receives favourable comments from farmers and operators. Is it time to design and fabricate an improved version of this planter? There is now considerable expertise in several countries for the fabrication of the current group of mounted 2WT tool bar/planter assemblies. Is it time to do a bit of 'lateral thinking' and make up a two row planter, of the basic tool bar design, but with a drawbar fitted, a seat, and support wheels on each side?

This planter can utilise the latest versions of the 12 cell vertical seed meters from China, and also the latest fluted roller fertiliser meter assemblies. If a simple 'rope trip lift' is also incorporated, and the planter made in Africa or Asia, the challenges of manual lift and cost can also be addressed. A seating arrangement would be incorporated. Ground contour following soil engaging tools, as now being developed in the latest Gongli Africa model would complete the picture. Possibly the challenge of decreased tractive performance when using operator platforms on mounted planters would also be alleviated. Fast travel between fields or farms would be retained.

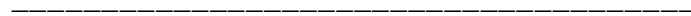
The only real obstacle for this improved version is the large turning circle, which would still be much bigger than any mounted or semi-mounted 2WT seeder/planter. If a new planter of the proposed configuration was available, would it be acceptable to farmers? One should bear in mind that it may not suit very small fields. What do you think? Please let the forum know of your opinions.

Some examples of small drawn two row planters.

Shown below are various pictures of small trailed (drawn) two row planters. Most are from a previous era, (1930's) before widespread introduction of three point linkage on tractors. Some are designed for animal (horse) traction. Some have seats. The older ones have either manual lift or mechanical 'rope trip lift' systems.

The modern units are designed for use behind ATV's or sub compact tractors. I am sure that we can adapt many of the ideas from these planters to make up a two wheel tractor planters something akin to the Fitarelli unit shown on the previous page.

Do you have an opinion on this proposed style of planter? Would a planter of this type have farmer appeal and be marketable? If so please comment to the forum, and ideas can be exchanged.



Alternative seed plates for Chinese 12 cell vertical seed meter.

Various types of 2WT row crop planters are now using the Chinese made 12 cell vertical seed meters. However some are concerned at the lack of choice of seed plates to suit these meters. I contacted the Chinese supplier, who replied that at present there are seven different seed plates available. They are set out below.



6 cell – large maize seeds



6 cell – med. maize seeds



6 cell – small maize seeds



12 cell – large maize seeds



12 cell – med. maize seeds



12 cell – small maize seeds



12 cell- all other small grains

Note that all seed plates are made from aluminium alloy. No plastic plates are currently available. Note also that no blank plates are available. (Some manufacturers have blank plates as an option and the farmer drills holes as required around the periphery to suit the type of grain being planted.)

If sufficient pressure is applied to the manufacturer, then possibly more alternative seed plates could be made up.

If any readers are currently using these seed meters, I would be pleased to hear any relevant comments on their operation.

If you have any comment on this newsletter, please let me know.

Back issues of the 2WT Newsletter can be found at

[:http://conservationagriculture.mannlib.cornell.edu/pages/resources/twowheel.html](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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