TWO WHEEL TRACTOR NEWSLETTER – SECOND ISSUE (FEBRUARY) 2011.

ACIAR-Rogro 2WT seed drill operators manual now in Khmer.

The operator's manual for the ACIAR-Rogro two wheel tractor tined drill has now been translated into Khmer by CAVAC (Cambodia Agricultural Value Chain Program). This step forward should be of value to the various ACIAR and other programs that are currently using the 2WT seed drill in Cambodia. As mentioned in the last newsletter, a further six ACIAR-Rogro tined seed drills are currently being fabricated by Russeykeo Farm Implement company in Phnom Penh.

Knapik seed drill for 2WT

The Knapik Company of Santa Catarina, Brazil has details of a single row zero tillage seed drill for 2WT.




The unit has a cutting coulter disc followed by a tine opener as the soil engaging tools. A pair of inclined vee press wheels is at the back. A horizontal flat plate seed meter distributes seed. Various hitches are available for different types of 2WT.
Note the operator platform to save walking, and also add extra weight to the back of the seed drill.
Full details are on the Knapik website. Price unknown
The website is at http://www.knapik.com.br/index.htm
Google will translate from Portuguese if required.
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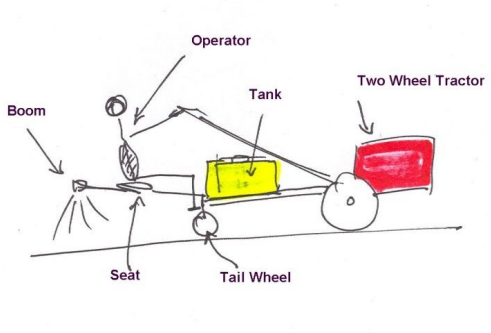
Herbicide application course conducted in Bangladesh.

As we are all aware, timely and accurate herbicide application is often necessary in conservation farming systems. As part of this process, various Bangladeshi agriculturalists, including staff from CIMMYT, Bangladesh Agricultural Research Institute (BARI), Bangladesh Rice Research Institute (BRRI), Department of Agricultural Extension (DAE), Bangladesh Agricultural University (BAU), Sylhet Agricultural University, various NGO's and Agricultural Chemical companies held a four day workshop in NW Bangladesh in mid January. An Australian Senior Weed Scientist Dr. Abul Hashem from Western Australia and Bangladeshi Weed Scientist Professor SM Rezaul Karim conducted the training. ACIAR contributed to the funding of this workshop.


Further details are available from Enamul Haque of CIMMYT Bangladesh.

Note that a commercial knapsack sprayer has been adapted for use with a 2WT. A ground wheel and chain system drives the unit from the tractor. This operates a crank, which lifts the lever arm of the knapsack up and down to operate the sprayer.
Fortunately this knapsack has a built-in pressure regulator to control the pressure at the rear-mounted nozzles. Regrettably in my opinion, many Asian made cheap knapsack sprayers may not be suitable for this purpose.

The development of a commercial boom sprayer for operation behind a 2WT will undoubtedly be a priority for the future. A sketch of another system is shown below.



However to fabricate a unit such as in this sketch would require a custom made spray tank, which would comfortably fit under the handlebars of the 2WT

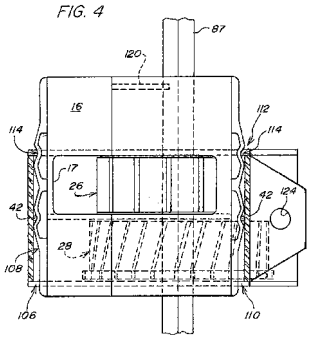
Rick Brendon in Kenya has also fabricated an experimental sprayer for 2WT. (details in a previous newsletter, or upon request)

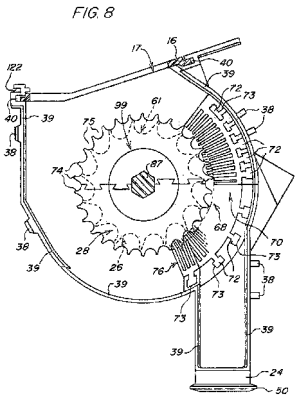
Dual function seed meter – Deere & Co.

There has been considerable discussion on the search for an affordable and reasonably accurate seed meter, which will dispense seeds by volume, and also distribute seeds for space planting. The pros and cons of fluted roller meters, inclined plate meters, vertical plate meters, and various others have attracted comment by many of the members.

This patent application showed up recently. I have copied below two diagrams from the patents website. Have a look at: http://www.freepatentsonline.com/y2009/0050035.html

This meter has two compartments, one for volumetric metering, and the other for single seed metering. It is made from extruded plastic parts, which clip together to make the whole assembly.





I have enquired of Deere & Co. in Moline, Ill. regarding this meter. The inventors have assigned this company the rights.
In my opinion this unit shows promise as a potentially affordable seed meter set-up that may suit the needs of seed drills fitted on 2WT.
In a later development, Deere has advised me that the single seed metering was specifically designed for soybeans. However under US conditions there seems to be no yield advantage from single seed metering compared to volumetric metering of soybeans. Deere has never put this meter into commercial production. I will continue to follow up on this with Deere & Co.

The Gordon hydraulic two wheel tractor

This is a picture of a ‘Gordon’ hydraulic two-wheel tractor, which was built in North America. in the 1960’s

Don Gordon thought a light tractor should be more versatile in shape and application, so in the late 1950s he set out to design one. The result was the Gordon hydraulic tractor. For ultimate versatility Don designed it with five separate components: a power unit with two 22-inch (559 mm) (outside diameter) wheels; riding “sulky” base with two 16 inch (406 mm) (OD) wheels; riding reversible top deck with steering wheel; reversible hood; and a walking handle insert.
By varying the way the components were attached to the power unit, the operator could create a front engine, front-wheel drive tractor, a rear engine, rear-wheel drive tractor, or a walking traction unit. The change could be made in less than 10 minutes with regular hand tools.
The Gordon had either a one-cylinder Kohler air-cooled 12.5-horsepower engine or a 24-horsepower twin. This propelled the tractor at up to 19 km/h in either direction via an infinitely variable hydrostatic transmission driving through an automotive gear-type differential. It also drove the hydraulic power takeoff and hoisting arms that controlled the height of the implement being used.

The riding sulky could be attached to the front or the rear of the power unit allowing implements like a snow blower, rotary mower, grader blade or power sprayer to be installed in their optimum locations, be it the front, back, or between the front and rear axles. The reversible top deck allowed the steering wheel to face either way. All attachments came with their own built-in hydraulic motor driven by the power unit's hydraulic pump.
If the operator wanted a walking tractor, the riding attachments were removed from the power unit and the "handlebar" type walking handle was inserted into the front or rear of the power unit, whichever was appropriate for the implement.
The complete tractor weighed less than 1,000 lb (454 kg), and the power unit's track width could be varied from 34 to 44 inches (864 to 1,118 mm). The tractor was very versatile, acting as, for example, as a snow blower, grader, salt and sand spreader, lawn mower, roller, sprayer, fertilizer spreader, seeder, rotary tiller or plough. With a hydraulic forklift accessory attached to the front it could even raise a 600 lb (272 kg) load to a height of five feet.
18 Gordon tractors were produced in 1963 as a pre-production pilot run. The Gordon tractor was priced at $1,424, with attachments running in the $250 to $400 range. All were readily sold but manufacturing costs escalated to the point that the project was put on hold and production never did resume.

Have I reinvented the wheel?