



## Sun Wheel Seeder

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## Personal Information

**Contact Name:** Geoffrey Meikle

**Organisation/Business Name:** University of Fort Hare

**Organisation Type:** Academia

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**Location:** Alice, Eastern Cape

**Type of Industry:** Agriculture

**Technical Area:** Conservation Agriculture, Agricultural Engineering

## Technology Offer Description

**Technology Maturity:** Prototype

**Proof of Concept:** Yes, prototype tests

**Intellectual Property:** Yes, No. 2012/01247

**Desired Relationship:** Investor/Funding, Customers  
Only



### Summary:

The Sun Wheel Seeder is a cost effective, easy to use patented finger wheel planter coultter. The Sun Wheel Seeder creates small holes in the ground rather than a continuous slot thereby reducing power requirement and the tendency to block with organic matter. It is suitable for both animal traction and tractor operated planters.

## Detailed Description:

Growing crops without soil tillage (Conservation Agriculture) has been gaining momentum in many parts of the world. “CA systems, comprising minimum mechanical soil disturbance and organic mulch cover are now practiced globally on about 125M ha in all continents and all agricultural ecologies. In the last 11 years CA systems have expanded at an average rate of more than 7M ha per year.” (Friedrich et al, 2012). Planting seeds in untilled soil through organic mulch cover is more challenging than in tilled soil.

Available equipment (planter coulters) for placing seed in untilled soil has a high power requirement, is easily clogged by organic matter, is heavy, expensive and only works properly when soil moisture conditions are ideal CA planting is difficult in most soil types when the soil is very wet or becoming dry and hard. Small scale farmers who wish to benefit from CA need low power requirement, light and low cost equipment.

The Sun Wheel Seeder is a patented finger wheel rolling punch planter coulters which makes small holes in the ground rather than a continuous slot. The Sun Wheel coulters are purposely designed for CA with the following objectives:

- Better performance in wet and dry conditions.
- Low energy requirement.
- Low cost.

The market segments for planting machines and hence planter coulters, is as follows:

- Large scale commercial farms with tractors.
- Small scale farms with two wheel tractors or small four wheel tractors.
- Small scale farms with animal traction.

A full SA Patent application No. 2012/01247 title “Finger Wheel Assembly” was filed on 22 May 2013. Five main prototypes have been constructed to date. Sufficient experience has been obtained to build a prototype finger wheel coulters that will improve on the performance of the previous prototypes in all parameters and be suitable for demonstration to potential customers. This prototype is designed to incorporate a system for improved timing of seed drop with less chance of being plugged with soil. Seed and fertiliser will both be deposited by the pair of finger wheels but in alternate holes. Funding is required for the industrialisation/production of the finger wheel coulters and customers can sign up for the first product expected to come out by the end of November 2014, a demonstration can be arranged to interested buyers.

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### **Team and Related Experience:**

Geoff Meikle, Agricultural Engineer and a Senior lecturer in agricultural engineering, University of Fort Hare, for 9 years. 30 years experience with reduced tillage, crop production and farm machinery.

### **Disclaimer and Non Confidential Disclosure:**

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