Green manure seed drill for vineyards

Introduction:

“This green manure drilling machine for vineyards was invented by a winegrower in the Jura region of eastern France. Having noticed how useful this implement was, other winegrowers in the area wanted to reproduce it for use on their own farms.

A local organisation for the promotion of organic agriculture (GAB Jura) contacted Atelier Paysan to work on a technical drawing for the seed drill, the inventor having agreed to share his creation. Following Atelier Paysan’s work, the design of the seed drill is now available under Creative Commons. It was re-designed using standard metal parts to make it easy to reproduce.”
Collective farmer-led designs

**THE SANDWICH**

**INTRODUCTION:**

«The Sandwich» is a multi-purpose tool adapted for cultivation in orchards. It was developed by the GRAB (Group for the Research of Organic Agriculture) in partnership with Atelier Paysan. It has already been prototyped and tested, and the technical drawings are now available to provide more details of the tool's design and development.»

- Front quick hitch triangle (to pull the tool)
- Back quick hitch triangle (to push the tool)
- Hydraulic jack to control the width of the tool
- Multi-use tool bar (on which you can fix spring tykes, disc harrows, etc)
- Tool bar frame
- Main frame
- Sliding extension bar
- 6 planches de 1.00m
- Porte beaupliers
- Hydraulique
- 6.4 mm
- Acier
**Introduction:**

“The Roloflex is a crimper roller designed to work on raised beds. This tool can also crush green manures on uneven ground where a classic rigid roller could not do the job.”

**Frame**
- Tension spring, giving flexibility to the roller for work on ridges
- Screw to adjust tension
- Vertical articulated arms
- Ball bearing hub
- Flexible roller: discs connected by welded chain links
- Blades: welded at an angle to optimise the weight of the roller
- Depth wheel to adjust impact of roller according to ground level
- Quick hitch triangle
- Frame
**Crimper Roller**

**Introduction:**

«The Organic Agriculture Research Group (GRAB) of Avignon are working together with Atelier Paysan to design a series of tools as part of the SOILVEG project. One tool requested was a crimper roller to destroy plant cover. Following preliminary discussions, the GRAB opted for a large rigid roller (2.2m wide) rather than the flexible roloflex roller.»

Roller blades are staggered and sharp to optimise impact on plant cover.

Mounting for quick hitch triangle, allowing roller to be used with Strip till cultivator.

Frame

Quick hitch triangle

Roller blades are staggered and sharp to optimise impact on plant cover.

Pillow block

Find this tool on our website: [http://latelierpaysan.org](http://latelierpaysan.org)
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**Strip-Till Cultivator**

Weight: 217 kg

**Introduction:**
«The Organic Agriculture Research Group (GRAB) of Avignon are working together with Atelier Paysan to design a series of tools as part of the SOILVEG project. One tool requested was a strip-till cultivator to cut and create a furrow into a plant cover, after the crimper roller.»

![Strip-Till Cultivator Diagram](image)

- Frame
- Mounting clamp for adjustable blades
- Quick hitch triangle (can be mounted on its own or behind the crimper roller, increasing weight and impact of roller)
- Serrated disc which cuts into plant cover
- Adjustable blade, to cut further into furrow

Find this tool on our website: http://latelierpaysan.org
INTRODUCTION:
«The quick hitch triangle replaces the traditional three point linkage system. With the quick hitch triangle, you can hitch a tool onto a tractor in a matter of seconds without getting out of the cab. It’s also a safer and more efficient way of hitching on tools. Below is all the information you need on the quick hitch triangle...»

Weight: 15 kg

Standard model

Adaptable hitch model

2 welded U shaped plates

Metal plate with laser-cut slot to attach male triangle

Find this tool on our website:
http://latelierpaysan.org
**SEMl-DIRECT SEED DRILL FOR CEREAL CROPS**

Weight : 817 kg

**INTRODUCTION :**

«Following trials by François BOREL (livestock farmer) drilling forage crops straight into stubble, or re-seeding meadows, a group of 4 farmers around la Roque d’Anthéron, between the Vaucluse and Bouche du Rhône in France, expressed an interest in finding out more about direct sowing practices.»
Since our first meeting with the winegrowers of St Joseph in the Ardèche (South East France) in August 2014, the project of designing a cultivation tool for work on sloping vineyards has moved forward considerably. The request came from winegrowers cultivating on sloping who had to get off their tractor after each pass in order to adjust their machinery. The idea was to design a tool able to work on two half rows of grapevines, which could adjust without getting off the tractor. The name “Dahu” refers to an imaginary wild mountain animal with long back legs and shorter front legs, and was chosen because of the tool’s adjustable depth wheels.

**INTRODUCTION:**

**DAHU**

- **Extendable frame**, allowing tool to be widened to fit span between vines rows (1.5 to 2.5 metres), directed by sensors
- **Hydraulic jack**, allowing tractor and equipment to turn at the end of row
- **Quick hitch triangle**
- **Extendable frame** (mounted on parallelogram) with 20 cm extension to adapt to angle of slope
- **Directional wheels** (adapted to sloping ground)
- **Harrow implements with sensor** to adjust the distance between tool and vines
- **Adjustable discs**, to push soil towards or away from ridges
- **Adjustable finger harrows** to level ground
- **Finger weeder made of recycled rubber**, mounted on springs to regulate pressure of the tool on the vines

Find this tool on our website: [http://latelierpaysan.org](http://latelierpaysan.org)
**G R A I N  C L E A N E R**

**Weight (without motor) : 72 kg**

**INTRODUCTION :**

«Developed in collaboration with a farmer/baker group, this grain brush is a processing machine of the right scale for its users, making it possible to extract as much dust as possible from the wheat grain before it goes to the mill. This makes for a cleaner flour and lowers the amount of mycotoxins in the flour which are concentrated in this dust. The aim of the brush is to improve the quality of the flour and bring the farmer/baker group into line with existing or future regulations concerning this toxin. »
INTRODUCTION:
«Copied from the popular horse-drawn Swiss Bucher tool, the Néo-Bucher is the fruit of a collaboration between the organisation Hippotese and Atelier Paysan. Conserving the qualities of the original design and incorporating new improvements, such as the adjustable handlebar or the suspension spring, we have created a tool which is accessible, replicable and even more functional than its original.»
VIBRA BED-FORMER

Weight : 371 kg

INTRODUCTION :
«The Vibra bed-former is a secondary cultivation tool and a bed former. It's based on a spring tyne cultivator, but also has an adjustable comb weeder and a hydraulically assisted drum roller.»

Other possible configuration: cage roller
Cambridge roller
Double-action cylinder
Quick hitch triangle
Deflecting disc, pushing soil towards the middle of the bed
Spring tyne
Frame
Containment plate mounted on parallelogram (keeps the soil along length of tool and within width of ridge)
Frame to adjust position of finger harrows
Finger harrows to level ground and improve tilth
Adjustable goose-foot blades for paths
System controlling depth and pressure of tool on soil (made up of lever, parallelogram and roller)
**Bed Ridger**

Weight: 564 kg

**Introduction:**

“The bed ridger can be used instead of a plough to incorporate crop residue and green manures into the soil. The ridger can also be used to reshape a bed if it has been flattened following cultivation work.”

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**Butteuse à planche**

Find this tool on our website: [http://latelierpaysan.org](http://latelierpaysan.org)

- **Hub and arm disc** made of cold drawn steel (50 x 30 mm)
- **Double coil tynes** to weed paths
- **Removeable goosefoot hoe blades**
- **Adjustable central blade** (to break into ridge)
- **3 pairs of converging discs** to work ridge along whole length of tool
- **Mounting brackets** for blades (asymmetric so they can be inverted and their positions adjusted)
- **Frame made of thick metal bars** (100m) to give weight and solidity
- **Quick hitch triangle**
- **Frame**
- **Adjustable depth wheel**
- **Mounting brackets** for blades (asymmetric so they can be inverted and their positions adjusted)

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Extrait de la page :

«Butteuse à planche»

Sur le site de l’Atelier Paysan [http://latelierpaysan.org](http://latelierpaysan.org)

**Frame**

**Weight : 564 kg**
**INTRODUCTION:**

«The Cultiridger’s main components are a set of spring tyynes and a pair of discs. The tool was designed to create and maintain ridges, but it can also be used on permanent beds for secondary cultivation or for cultivation work following crop harvest.»

Weight: 412 kg
INTRODUCTION:
Crosskage roller: «This double roller is half way between a crosskills roller and cage roller. It can be mounted onto a tractor as a stand alone tool, but was originally designed to fit onto the back of the Cultiridger.»

Crosskage roller
Weight: 185 kg

Articulated roller train to follow ground level
Pin to block movement
Articulation control
Pillow block bearing
Quick hitch triangle on Cultiridger

Croskage roller to break up clods following pass with Cultiridger
Staggered bars to make impact of roller stronger and more uniform (the weight of the tool is spread equally between the discs and the bars, and there is an extra surface area in contact with soil)
**THE TRACTOR TOOL-BAR**

**Poids de l'outil (châssis) : 94 kg**

**INTRODUCTION :**

«With this versatile and easy to use tool-bar, you can acquire a range of essential tools at a low cost. Many tools can be fitted on, from comb weeders, vegetable and plastic mulch lifters, hoeing and ridging tools or forklift arms.»

**Example : mounting the vegetable lifter**

**Example : mounting the ridger on toolbar**

**Exemples d'accessoires :**

- Weeding tool
- Buttage central
- Support stand
- Adjustable depth wheel
- Quick hitch triangle
- Metal bar drilled at regular intervals to mount tools
- Weeding tool
- Ridging tool
- Support stand
- Adjustable depth wheel
- Quick hitch triangle
- Metal bar drilled at regular intervals to mount tools
- Weeding tool
- Buttage central
- Support stand
- Adjustable depth wheel
- Quick hitch triangle
- Metal bar drilled at regular intervals to mount tools

Find this tool on our website :
http://latelierpaysan.org
**FINGER WEEDER CULTIVTOR (TOOL BAR)**

**INTRODUCTION:**

«The tool bar can also become a precision hoe with the elements described here. Hoeing and ridging accessories already existed. However, their design did not allow as close a pass as is sometimes necessary for seedlings or crops.»
Collective farmer-led designs

**PRECISION STEERAGE HOE (TOOL BAR)**

**INTRODUCTION:**

«The tool bar already offers a number of options, but faced with the constant demand for more precise hoeing implements than the tines already available, the design of a tobacco hoe adapted to this tool seemed necessary to us.

These implements allow a closer pass over crops, when the plants are too big for finger weeding. The two operators can weave between the crops (cabbages, potatoes, etc.) to get rid of the undesirable weeds which escaped the goosefoot blades hoeing between the lines. The speed must of course be adapted to the nature of the soil, the extent of weed cover and the distance between plants. »
THE AGGROZOUK

INTRODUCTION :
«The Aggrozouk, previously known as the Bicitractor, is a light pedal-powered tool carrier. Light tools are hitched onto the underside of the frame through an electrically powered assistance system.»

Find this tool on our website: http://latelierpaysan.org