



## **DELIVERABLE**

**Grant Agreement number:** FP7-SME-2012-314879

**Project acronym:** AUTOGRASSMILK

**Project title:** INNOVATIVE AND SUSTAINABLE SYSTEMS  
COMBINING AUTOMATIC MILKING AND PRECISION  
GRAZING

**Funding Scheme:** Research for the benefit of SME  
associations

**Deliverable Number:** D2.1

**Deliverable Name:** Tool to Monitor Grazing

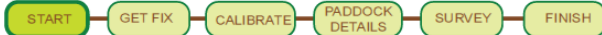
# The Grasshopper



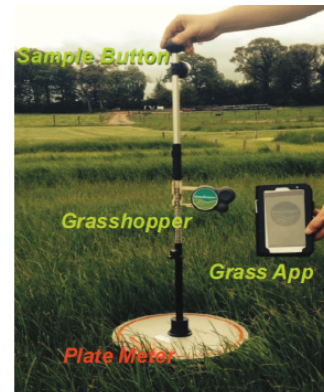
- The Grasshopper rising plate meter has been developed
- It measures grass height with high precision
- It is being tested on research farms at Teagasc (Ireland), Institut de l'Elevage (France), Wageningen UR Livestock Research (The Netherlands) and University of Liège (Belgium)
- The Grasshopper is currently applied on the SME end user farm in Ireland (SME FARM IE)
- It enables on-farm grass management to be improved and grass utilization to be enhanced.

# Grasshopper Quick Guide operation manual

## Prerequisites



Grasshopper unit charged and mounted on your plate meter.  
Grass App should be installed on your smart phone or tablet.  
Your phone or tablet should be 'paired' with your Grasshopper.  
Only one Grasshopper should be paired at any time.  
You should be located in or near the paddock to be measured.

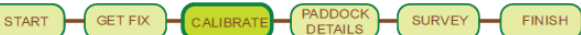


## Survey Setup



Turn on the device by clicking the switch down. The unit will chime to indicate start-up and good battery. Grasshopper will now take up to 35s to get it's position from GPS satellites. Once a position is established Grasshopper will issue an audible alert. If you are using the Grasshopper for the first time, getting a position can take up to 3 minutes. Thereafter Grasshopper remembers it's rough location.

## Calibration



While the Grasshopper unit is obtaining a position (fix) turn on the Grasshopper app on your smart phone or tablet. When you hear the chime from Grasshopper to indicate a fix has been obtained, press the 'Connect' button - this will connect the App to Grasshopper for your session.

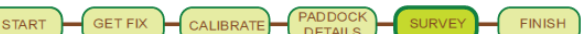
Grasshopper will now ask for a sample measurement to check all is OK. Hold the plate meter off the ground and press the platemeter button. Wait 12s. The unit will chime when the sample is complete and calibrated.

## Paddock Info



After the sample / calibration step, Grasshopper will invite you to enter relevant paddock information. Enter the relevant data required to determine the herbage mass and grazing area. It is advisable that at least 50 measures are selected for measuring an area at 1 hectare. Make sure you set an appropriate paddock ID - note that any old surveys of that name will be overwritten. Once the paddock info is entered you are ready to begin sampling.

## The Survey



Proceed to take the reselected number of measures ensuring each measure is representative of the paddock and the measures are taken throughout the paddock. Once the final measure is taken the device will automatically present you with the result and also save each sample and the result locally on the smart device.

## Finish



To turn off the device push the switch to middle and shut down the App on your smart device.

## Charging

The switch on the Grasshopper device should be clicked up.  
The charger attached to the Grasshopper device can then be plugged into a power source.  
Once fully charged the light on the power source should dim.

## General Maintenance

The rising plate meter should be cleaned and oiled on a regular basis through out the year. Avoid using Grasshopper in excessively wet weather. Grasshopper device should be stored in a dry environment.