

Commercialization Update – 'Darwin' Mechanical Blossom Thinner



Matt Peters

N.M. Bartlett Inc. / Provide Agro Corp.

PROVIDE AGRO

A Bartlett Company **BARTLETT**
187 ANNIVERSARY 1913-2024

Outline

- **Background**
- **Current Design**
- **Future Refinements**
 - Darwin Solo
 - Darwin SS
 - ‘optithin’
 - ‘edward’

Background



- Formed in 1912 by Norman Millet Bartlett in Beamsville, Ontario
- Started making sulphur products for himself and other Niagara Region growers
- 4 Generations involved now – family owned/operated with 40 employees
- Pesticide marketing and distribution, Equipment manufacturing and importing



- Formed in 2007 by Adolph Betz in Deggenhausertal (South Germany)
- Making thinners and hedgers
- Family company with 3 employees (manufacturing outsourced)



- Heard of machine through PSU - SCRI
- Met the Betz' 2009 in Berlin
- Formed manufacturing/marketing agreement for N.A. in 2009



- Provide Agro Corporation formed Jan 1, 2013
- Formed to separate and re-focus equipment/technology business from crop protection business
- New 22,000 ft² production/warehousing/office facility down the road from NMB home office
- Production of Darwin blossom thinner now by 'provide'

Current machines in use

DARWIN with **DARWIN PT** (with fork or bolt mount also available)

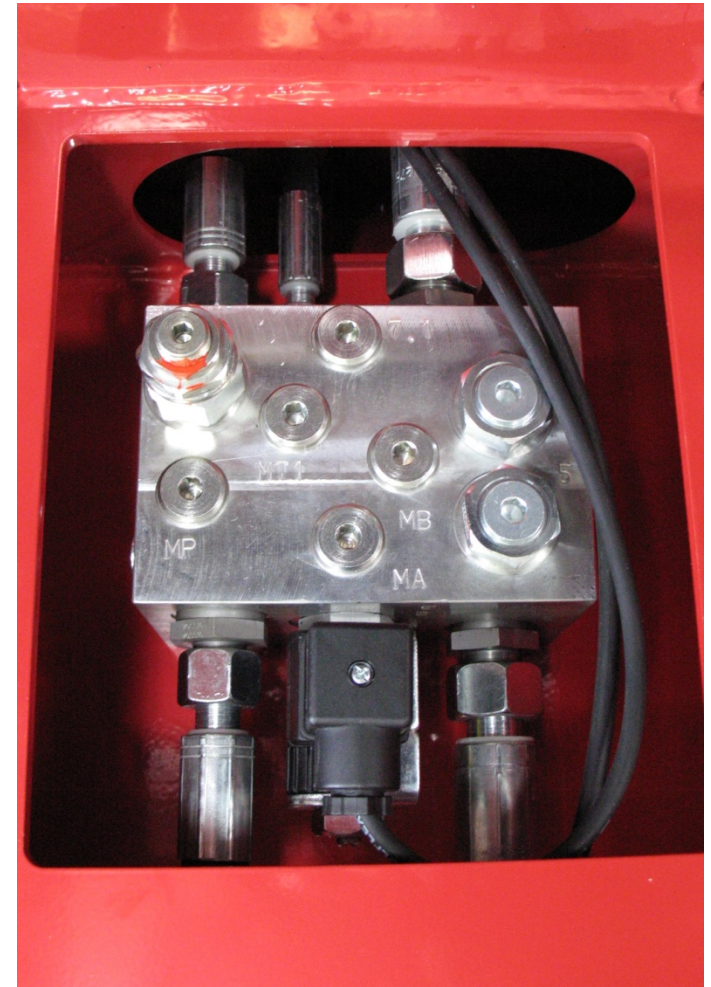


Control

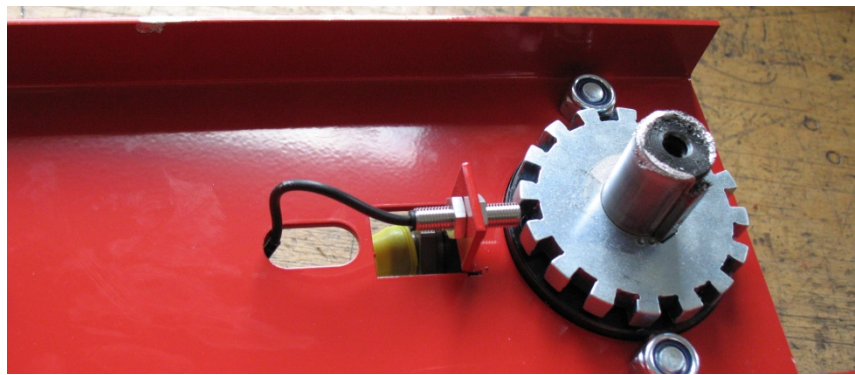
Controller



Hydraulic Control Box



Sensor



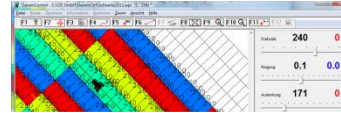
New Machine in Production; **DARWIN SOLO**



New machine under development; **DARWIN SS**

- Idea is to fine tune the consistency and efficacy of the traditional Darwin
- Although the Darwin does an excellent job (usually \$300-\$500 net economic impact/acre), Paul Heinemann's team found possibility of extra savings with a manually controlled side-shifting unit
- We will use a hybrid mounting system that borrows from the PT design and the 'Edward' hedger
 - Needs to be able to shift in and out all day quickly, with a decent amount of precision and without major wear
- Still is front-mounted and the shifting will be done using a joy-stick on the control unit

Possible future refinements; OPTThin



3D camera
• limb position
• flower density

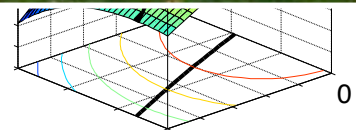


GPS/GIS Software
• input data that effects thinning
• records data real-time

Specifically Developed Software

• Variety specific data taken to provide feedback for Spindle RPM

Active Camera Mount
• increases accuracy of 3D camera by absorbing shock





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- ORSIgroup Platforms
- Greefa Grading/Packing
- Perfect Mowers
- Pulse/AquaPulse water treatment
- Custom Packhouse Equipment (automated washer/waxer/driers, dump tanks, etc.)

Resources

- www.abe.psu.edu/scri/
- www.bartlett.ca
- www.provideag.ca
- www.fruit-tec.com
- youtube - mattpetersbartlett

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**SPECIAL THANKS to
PAUL HEINEMANN and
KAREN LEWIS for
making this
presentation on my
behalf!!**

**I will be joining the
tour tomorrow to
answer any further
questions.**