On Farm Experiences with Camera-Guided Cultivation

Tom Molloy, University of Maine
Eric Gallandt, University of Maine
UMaine new research: Weed Control in Organic Cereals
zeroseedrain • 218K views • 8 years ago
Lauren Kolb, University of Maine Ph.D. student, discusses weed management in organic cereals.

Camera Steering Systems for Precision Cultivation and Weed Management in Cereals
zeroseedrain • 556 views • 9 months ago
Camera guidance systems offer improved precision and working rates, and opportunity to cultivate even narrow-row crops including cereals. To learn more about our work evaluating

Band Sowing and Cultivation for Weed Management in Organic Cereals
zeroseedrain • 842 views • 1 year ago
Learn more about our work evaluating...
Alternative weed management systems for organic cereals

Lauren Kolb
Treatments

Standard

Standard+

Two-Pass

Narrow+

Narrow HD+

Wide
Weed biomass in organic barley

2007

2008

Weed biomass (g m\(^{-2}\))

Standard+, Narrow HD+, Wide

2007:
- Standard+: A
- Narrow HD+: B
- Wide: C

2008:
- Standard+: A
- Narrow HD+: B
- Wide: B
Organic barley net return

Net income ($ha⁻¹)

2007

- $43
+ $139

2008

- $66
- $137
Mustard density in organic spring wheat

![Bar graph showing mustard density in organic spring wheat.](image-url)
Mustard biomass in organic spring wheat
Organic spring wheat net return
Kolb Summary points

Barley

• Elevated sowing rates and inter-row hoeing both improved weed management
• Economic performance depends on severity of weeds, cost of seed and crop price

Spring wheat

• Increased seeding rate improves weed suppression, but greater input costs and potential for lower protein
• No yield penalties with wide rows, high protein, greatest net returns
Band Sowing with Cultivation
Margaret McCollough
Band-sowing and inter-band hoeing for improved weed control in organic cereals

Funding: USDA NIFA OAREI

Rogers Farm, September 2015
Physical weed control (cultivation)

Why band sowing?

Row Cultivation

Band Cultivation
All treatments planted to Barley, var. Newdale

All treatments receive pre- and post-emergence tine harrowing

STANDARD

NARROW HD

Elevated Seeding Rate

WIDE +

BAND +

BAND
Weed Biomass in Barley Band Sowing Experiment
Band Sowing in Alternative Crops

**Surrogate Weed Biomass (g m⁻²)**

**Treatment**
- Standard
- Band +

**2016**
- Spring Wheat: P = 0.08
- Oats: P = < 0.01*
- Field Peas: P = 0.12
- Flax: P = 0.09

**2017**
- Spring Wheat: P = < 0.01*
- Oats: P = 0.07
- Field Peas: P = 0.40
- Flax: P = < 0.01*
Smith Farms
Westfield, Me.
David Ouellette
Lake Shore Farms, St. David
Plan for 2019

• We got a grant for additional on-farm trials...
  – Grant will allow us to buy this....
CombCut Weeder
Combcut