

# On Farm Experiences with Camera-Guided Cultivation

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## UMaine new research: Weed Control in Organic Cereals

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Lauren Kolb, University of Maine Ph.D. student, discusses weed management in organic cereals.

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## Camera Steering Systems for Precision Cultivation and Weed Management in Cereals

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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

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## Band Sowing

## Band Sowing and Cultivation for Weed Management in Organic Grains











*Alternative weed  
management systems for  
organic cereals*

Lauren  
Kolb





# Treatments



**Standard**



**Standard+**



**Two-Pass**



**Narrow+**



**Narrow HD+**



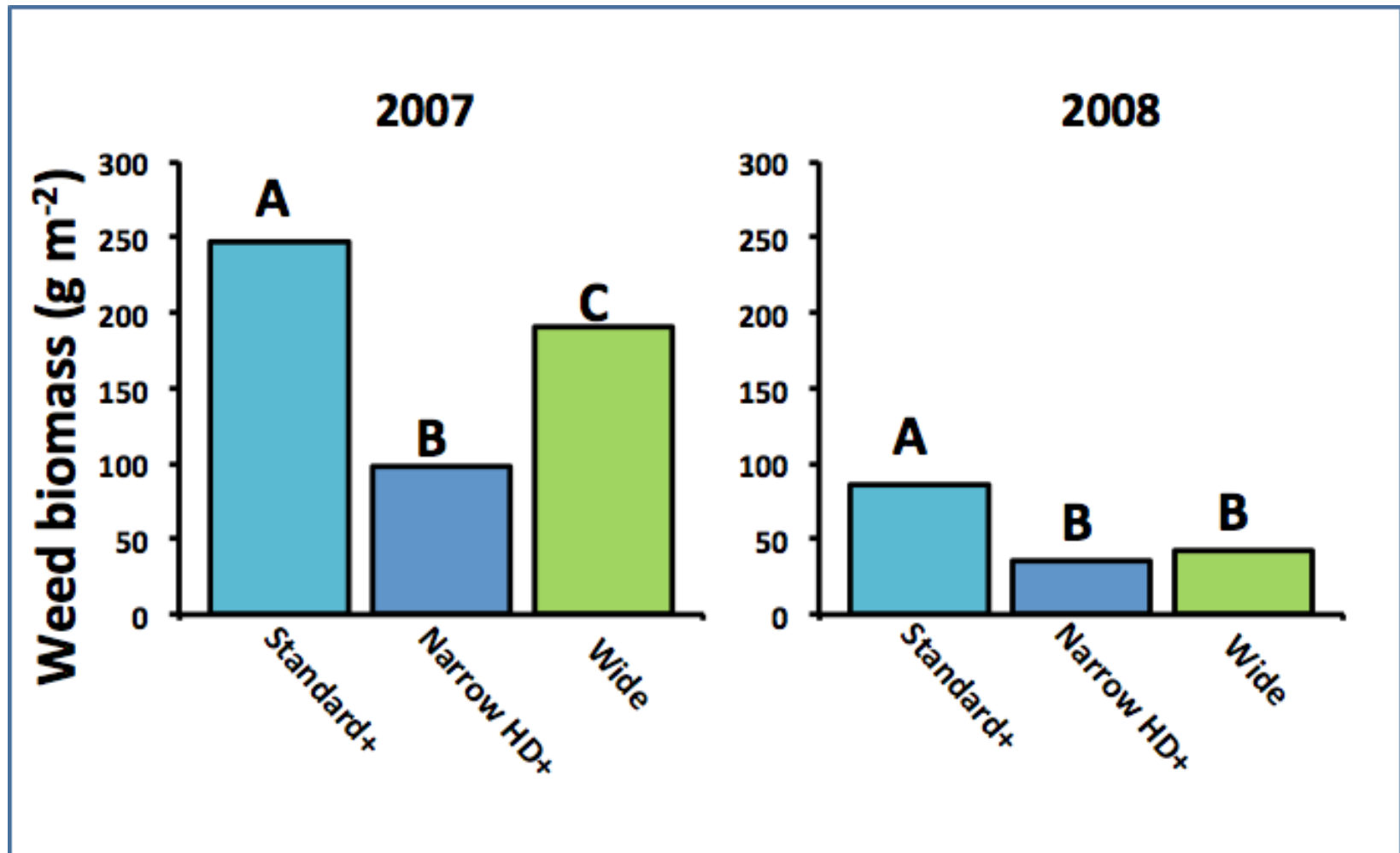
**Wide**





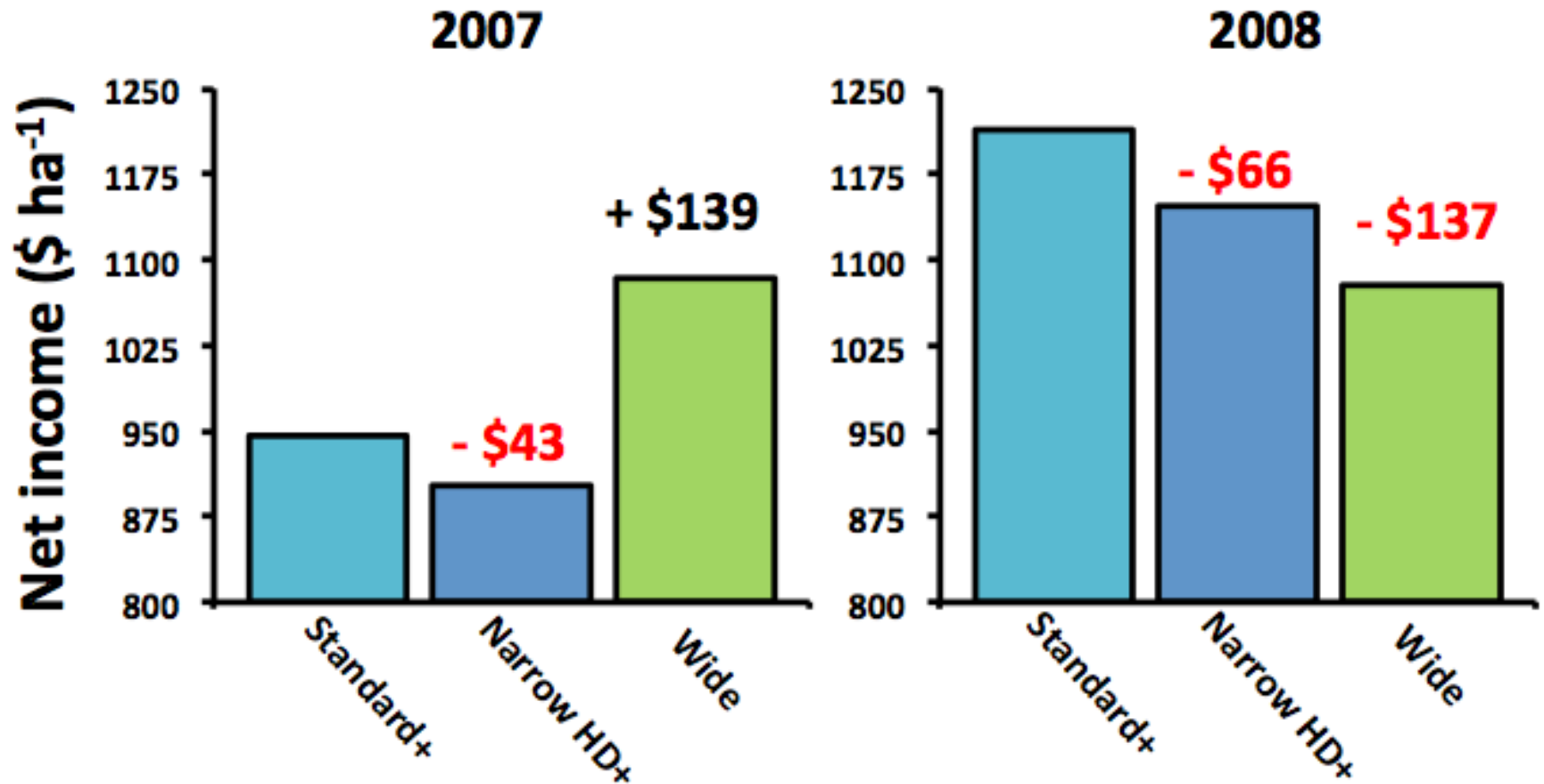


# Weed biomass in organic barley



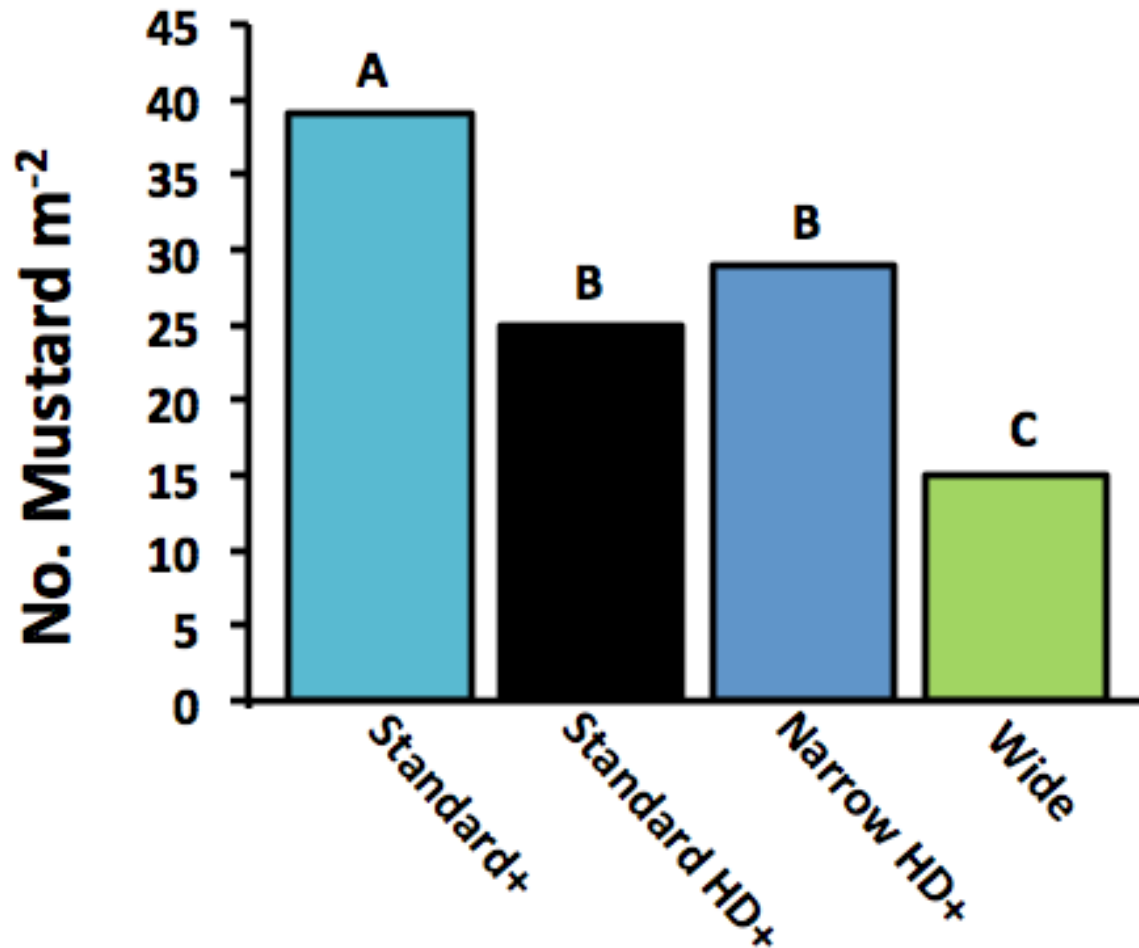


# Organic barley net return



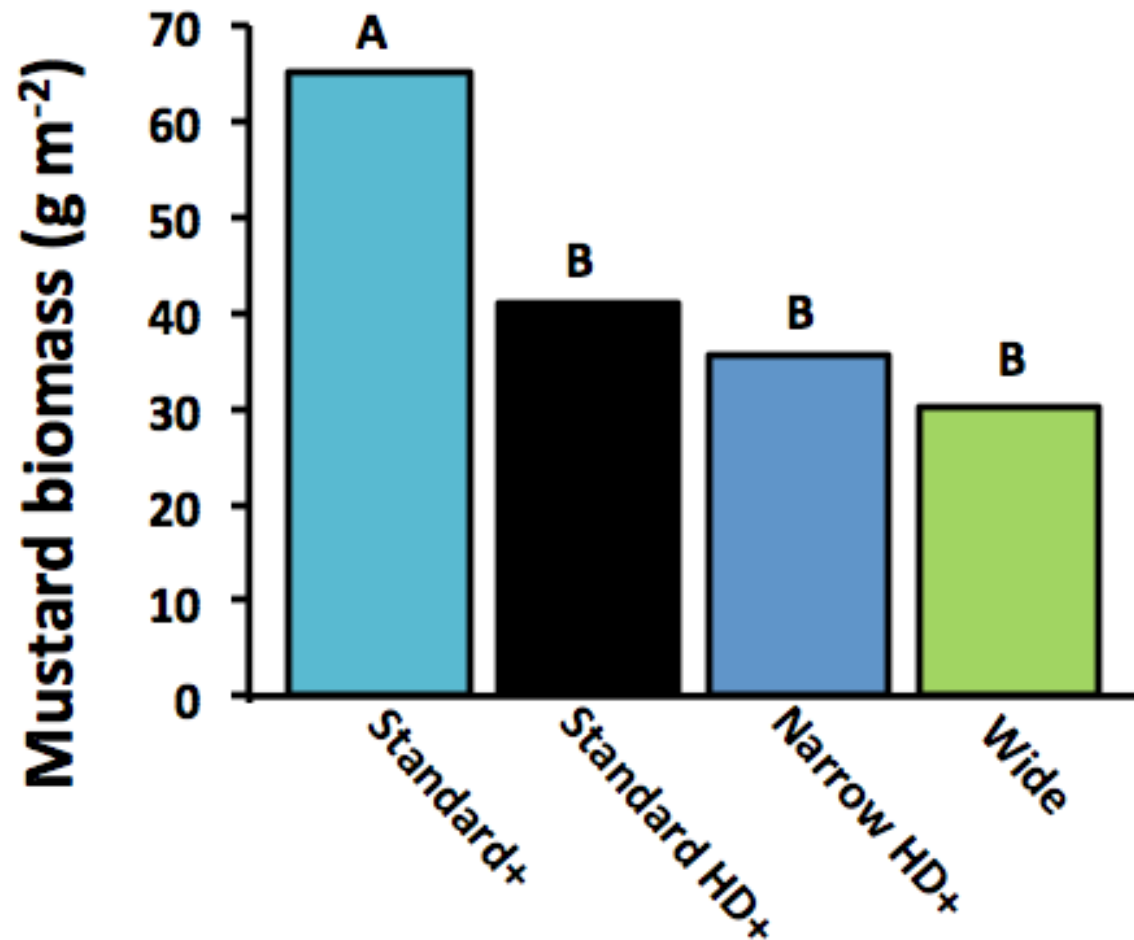


# Mustard density in organic spring wheat



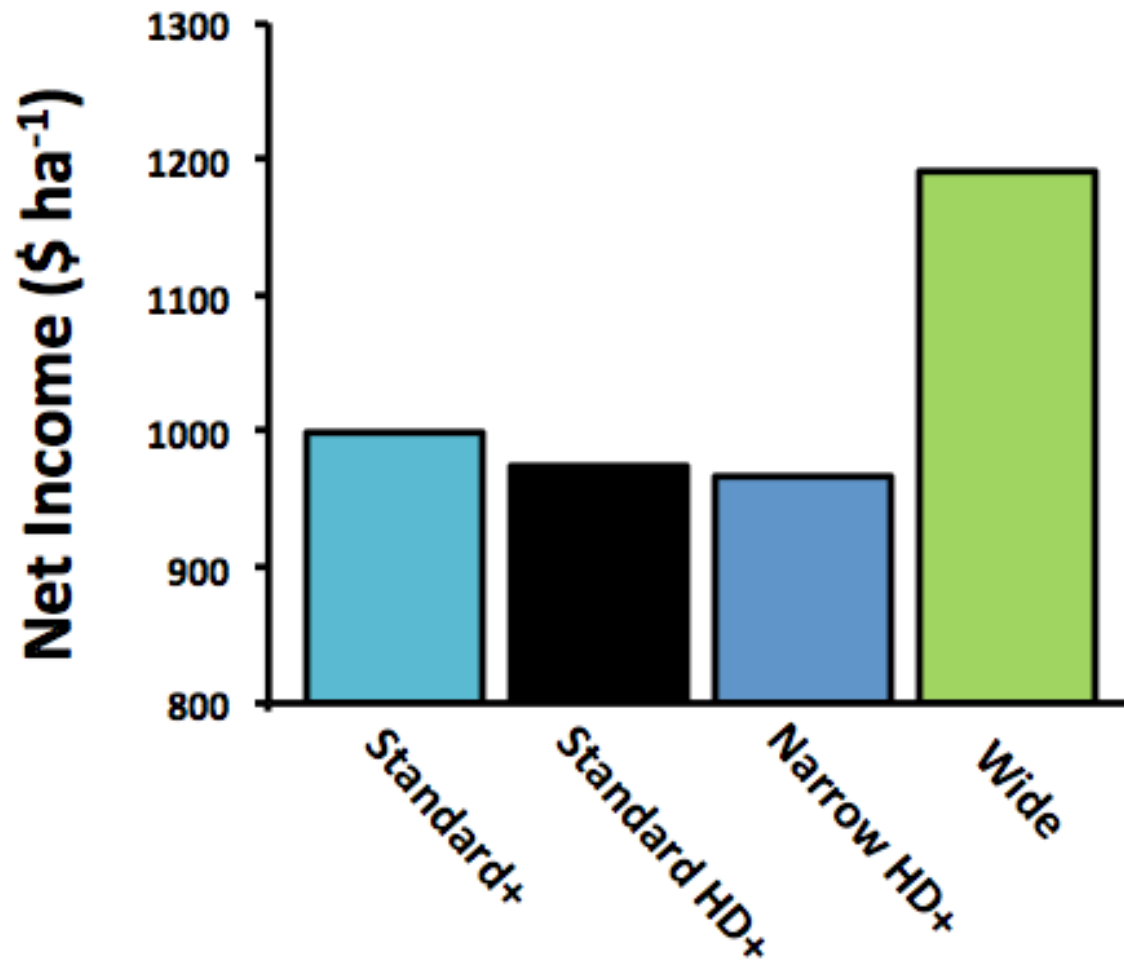


# Mustard biomass in organic spring wheat





# 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



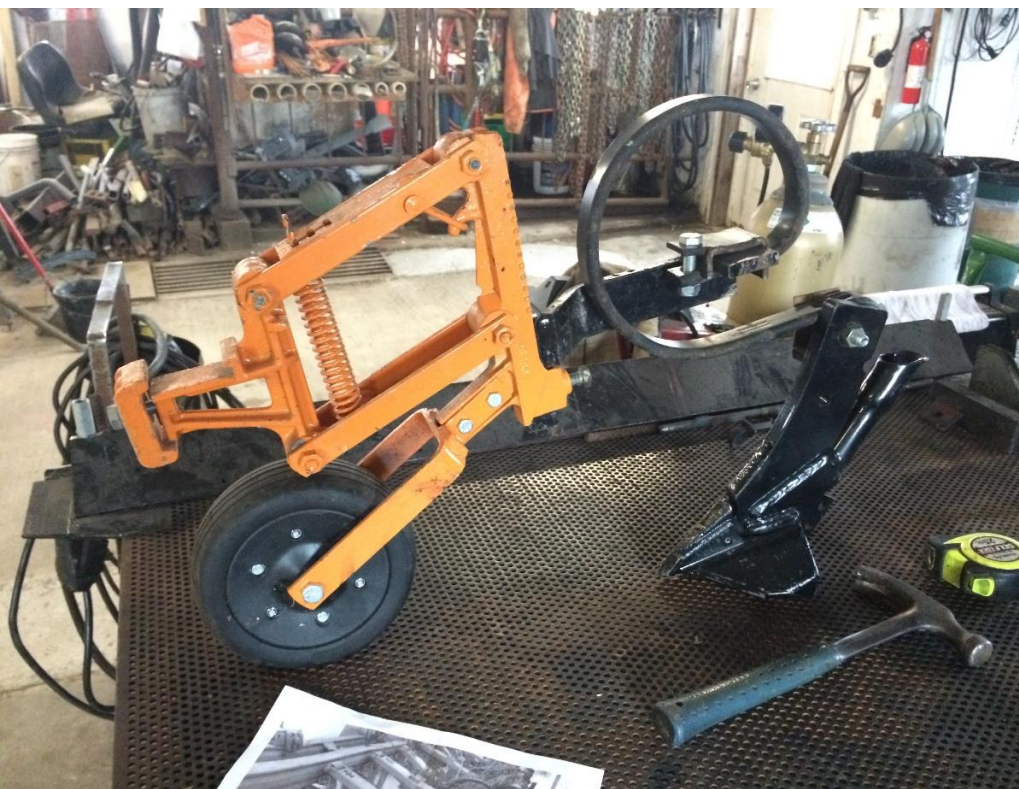
# Band-sowing and inter-band hoeing for improved weed control in organic cereals



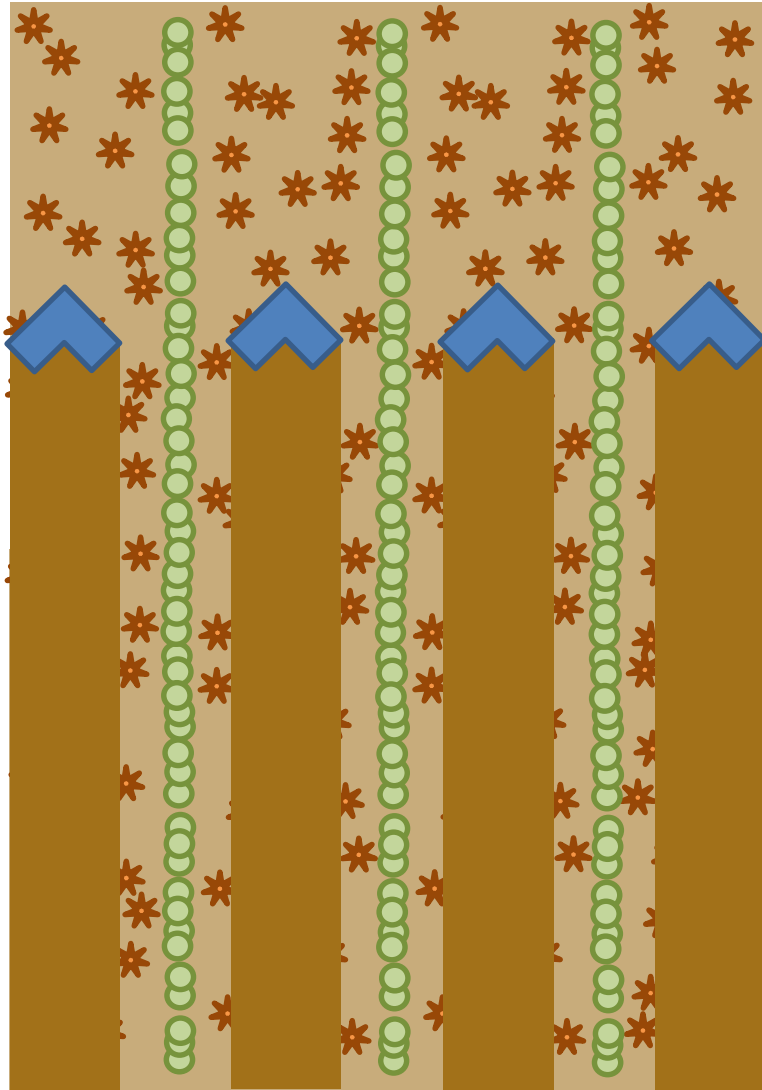
Funding: USDA NIFA OAREI

Rogers Farm, September 2015

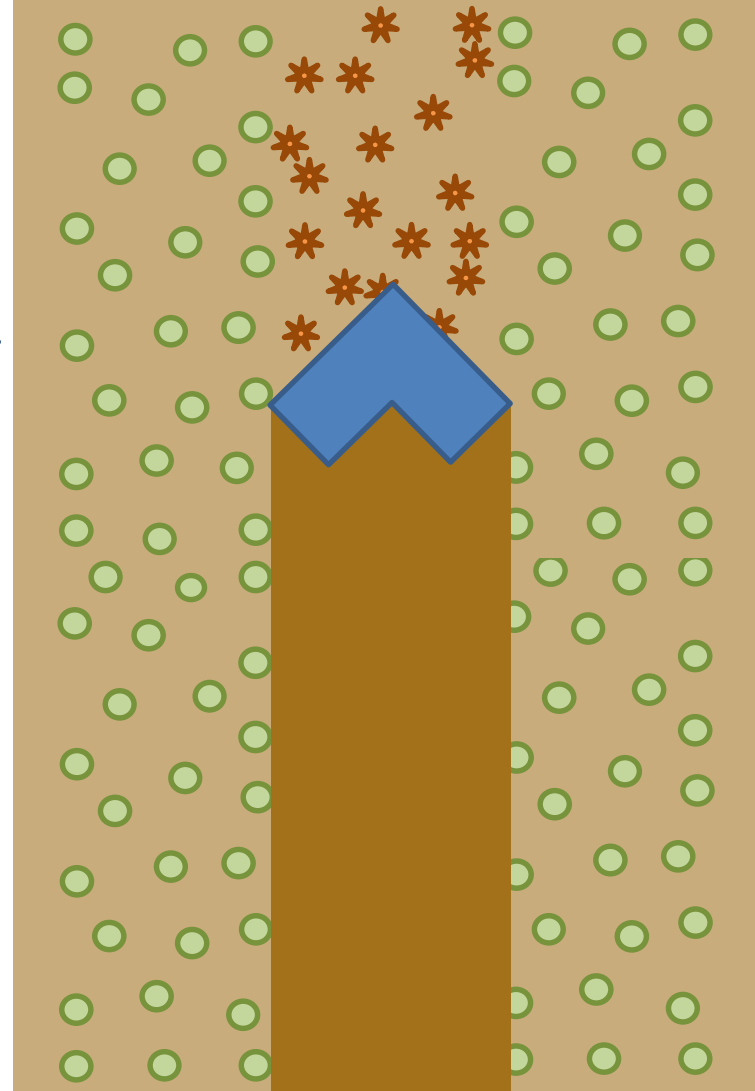




## Row Cultivation



## Band Cultivation



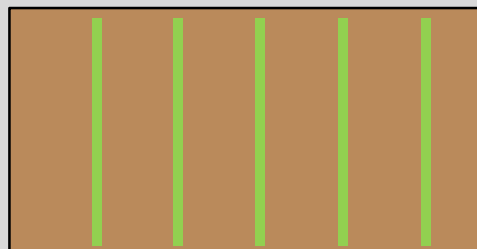


All treatments planted to Barley, var. Newdale



All treatments receive pre- and post-emergence tine harrowing

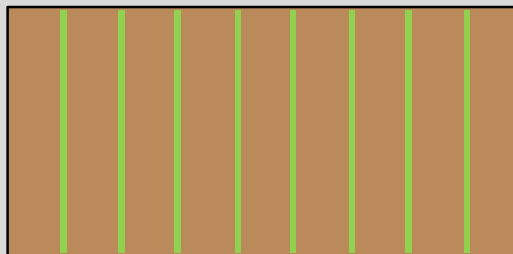
## STANDARD



↔  
6.5"

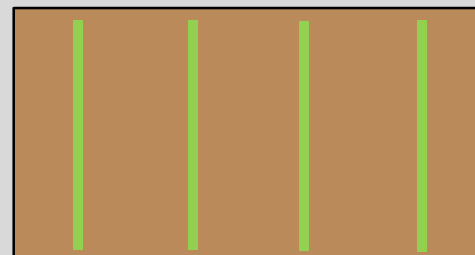
## NARROW HD

Elevated Seeding Rate



↔  
4.5"

## WIDE +



↔  
9"



## BAND +



↔  
5"

↔  
6"



## BAND



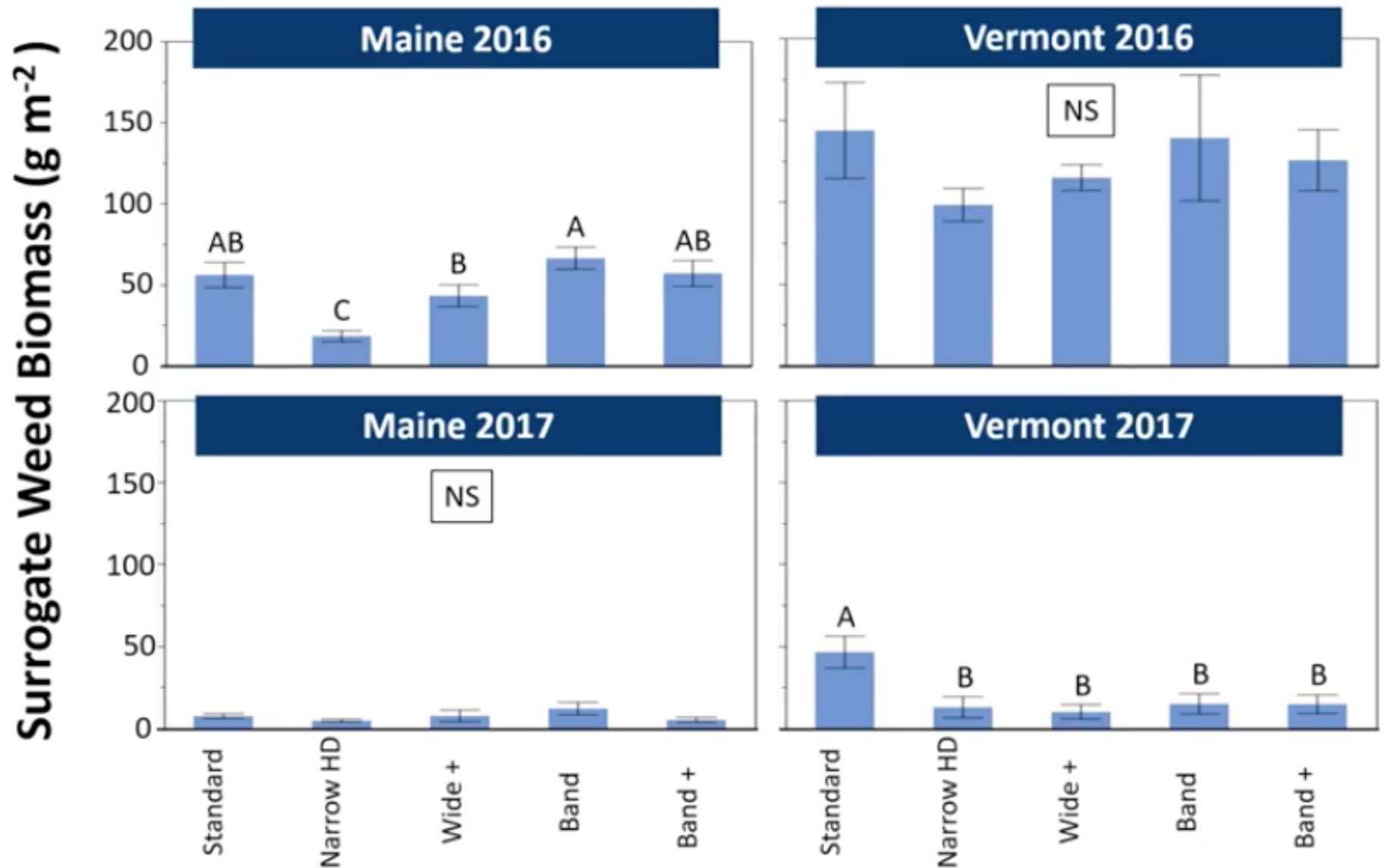
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5"

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6"

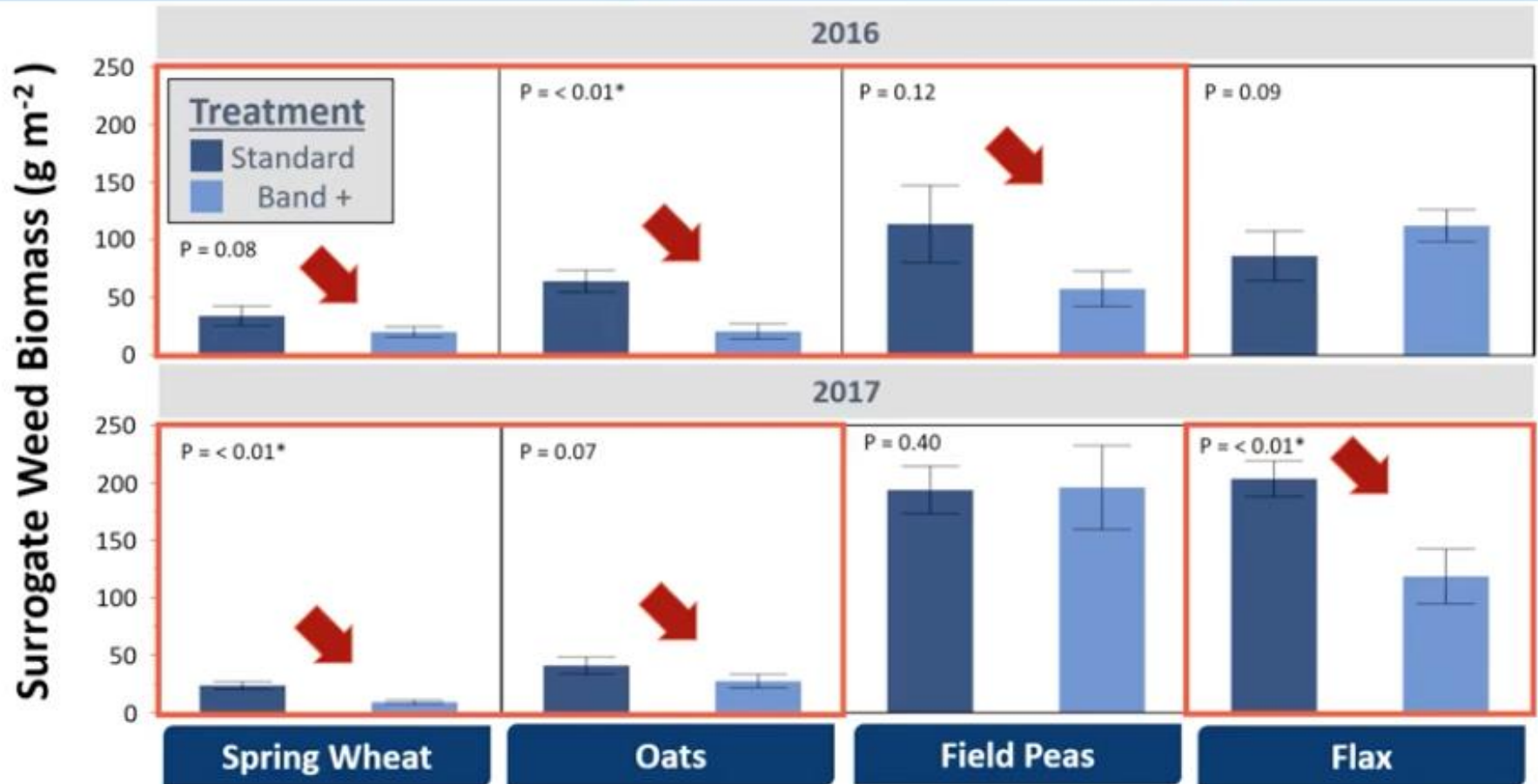




# Weed Biomass in Barley Band Sowing Experiment



# Band Sowing in Alternative Crops

















garford  
robocrop



Image  
Quality



kph



Offset



Manual



Tillett  
& Hague Vision Guidance



# Smith Farms Westfield, Me.







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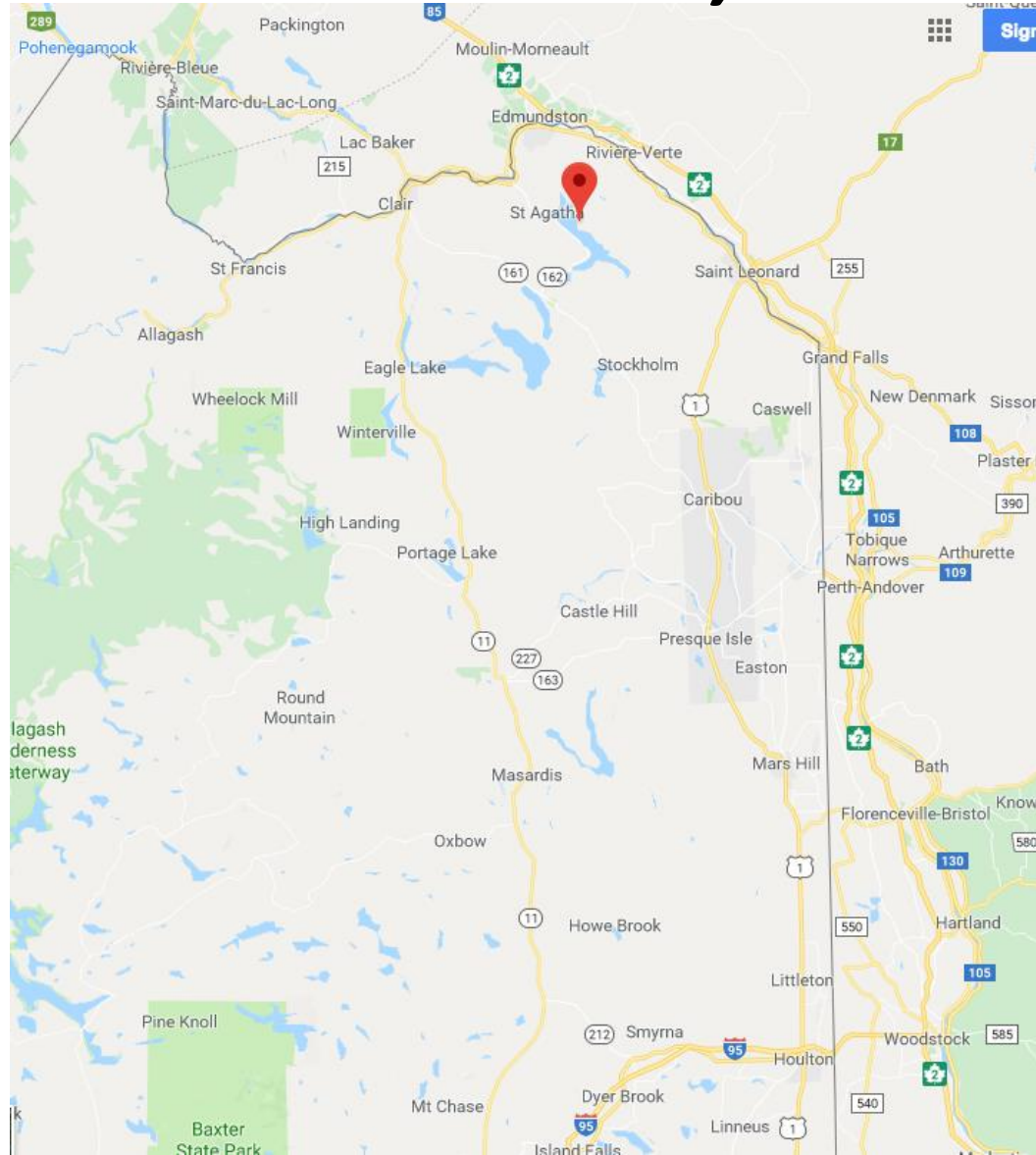






# David Ouellette

## 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















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