

Economics of Hay Production in Minnesota: Opportunities and Challenges

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UNIVERSITY OF MINNESOTA
EXTENSION

Driven to DiscoverSM

Outline

- Hay production in Minnesota
- Economics of alfalfa production
 - Geography of alfalfa supply
 - Geography of primary alfalfa demand
- Challenges of producing alfalfa



Hay Production in Minnesota

- 1.8 Million acres of hay and haylage
 - 70% Alfalfa
- Alfalfa
 - Over $\frac{3}{4}$ is baled as dry hay
 - Avg yield: 3.4 tons ac^{-1}
- Primary use is for livestock feed



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Agronomic Benefits of Alfalfa

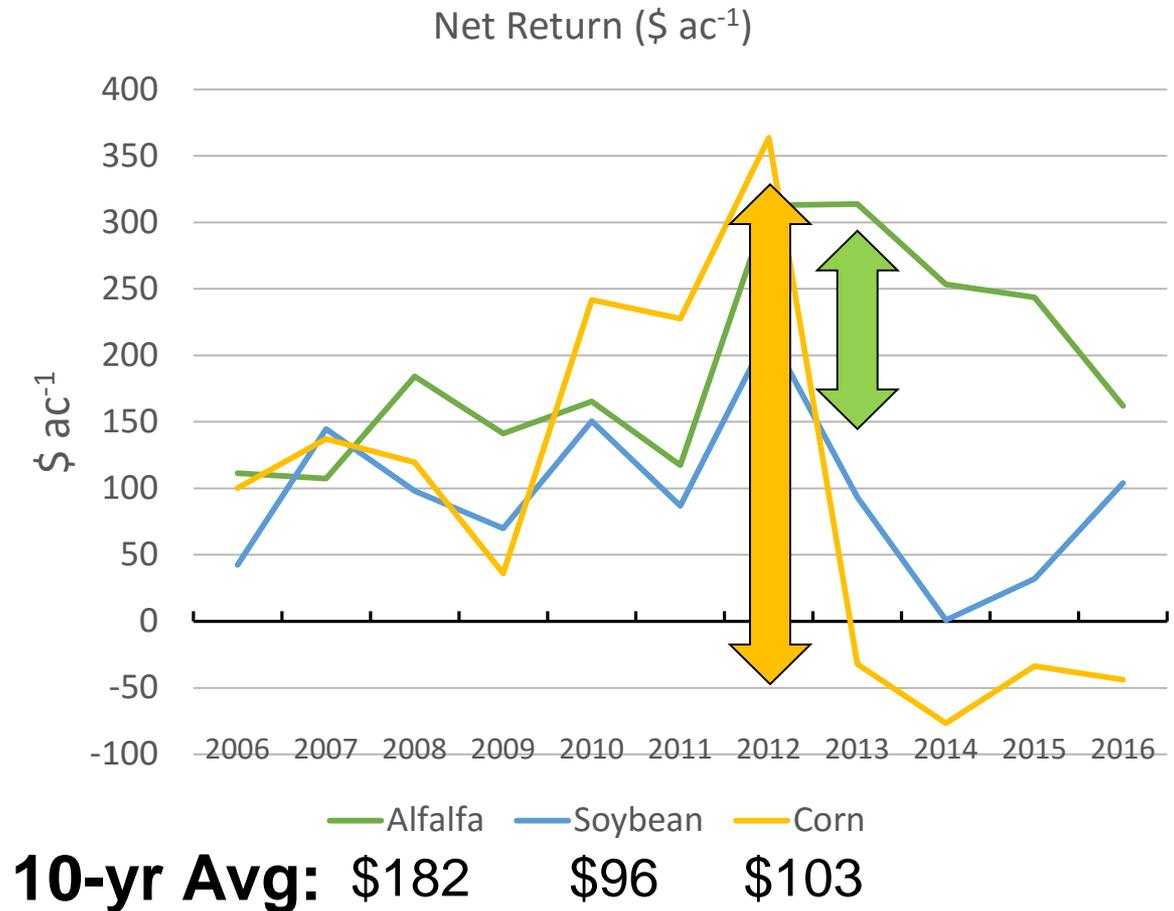
- Erosion control
- Reduces populations of annual weeds
 - Depletes the seed bank
 - Reduces emergence
- Rotation-Effect
 - Increases yields
- Provides N-credit



(Goplen et al. 2017, Lupwayi et al, 1998, Meiss et al. 2010, Olmstead & Brummer, 2008)

Economic Benefits of Alfalfa

- Alfalfa
 - Greater net return on average in the last 10yrs
 - Less variability (ie. Risk)

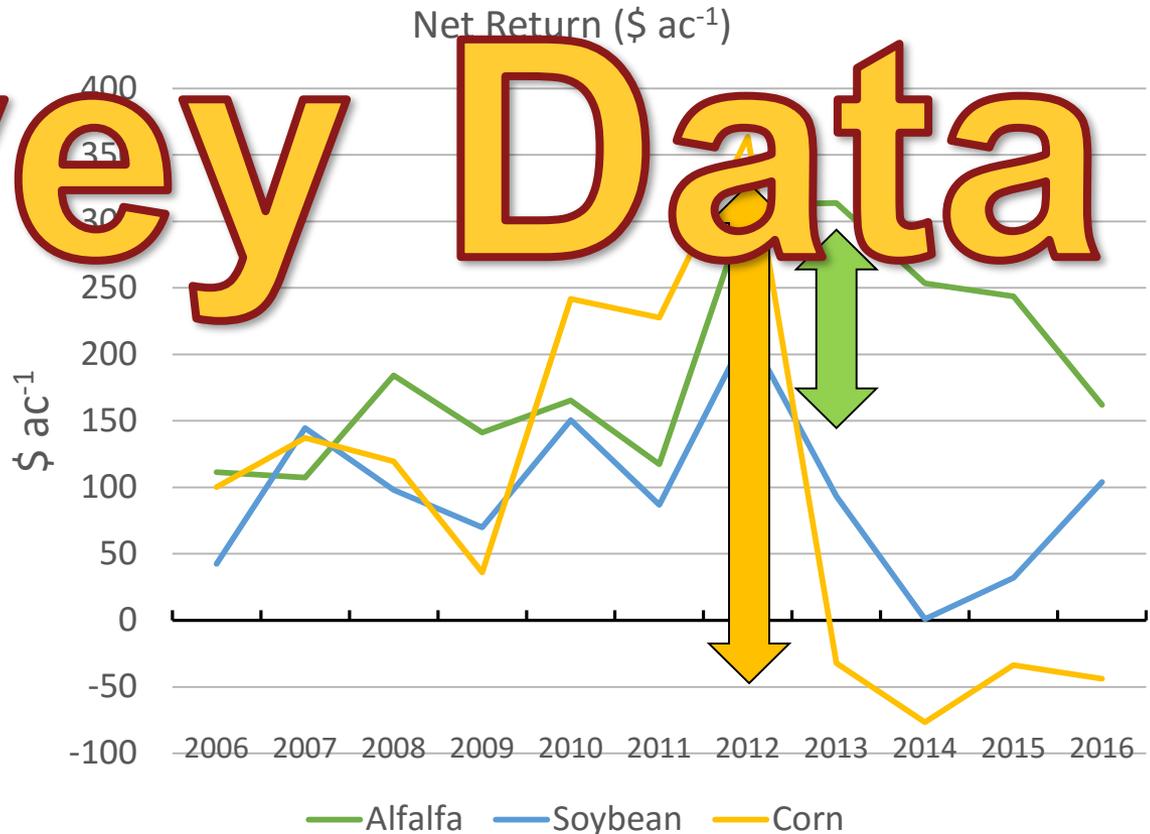


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Economic Benefits of Alfalfa

Survey Data

- Greater net return on average in the last 10yrs
- Less variability (ie. Risk)



10-yr Avg: Alfalfa \$182 Soybean \$96 Corn \$103

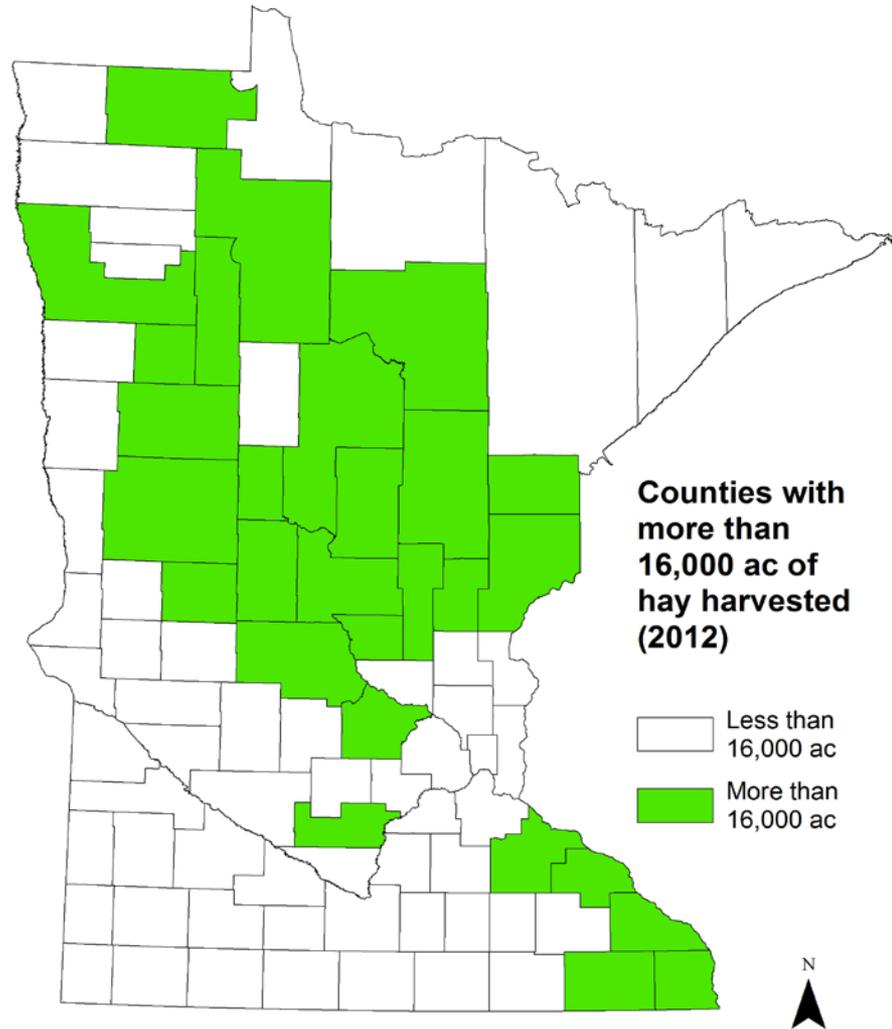
Avg land cost: \$70 \$104 \$120

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If **Alfalfa** has so many **benefits**,
AND is more **profitable** with less
risk, why don't more farmers
grow it?

Take a closer look

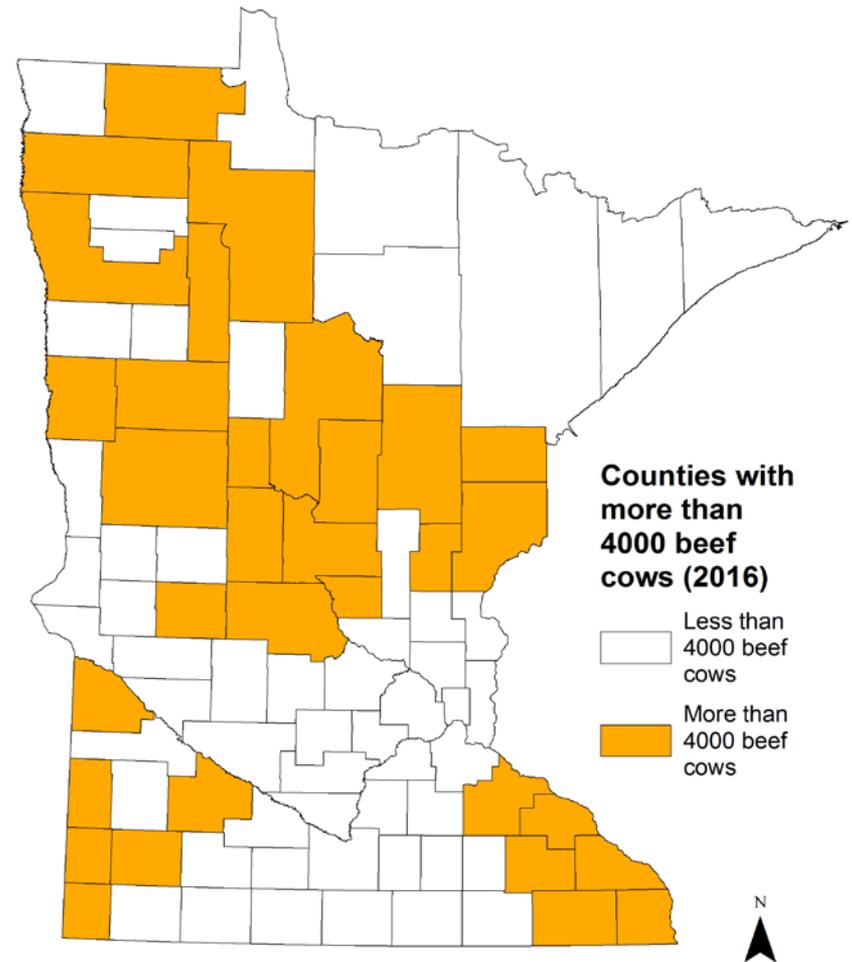
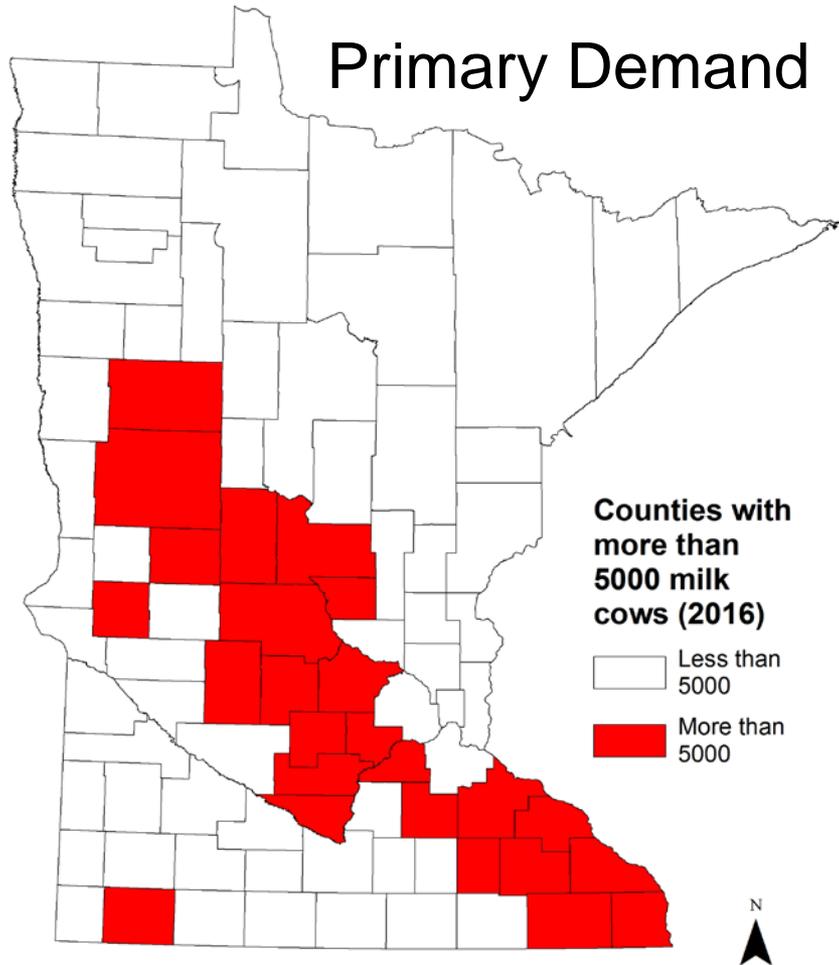
Where is Alfalfa grown?



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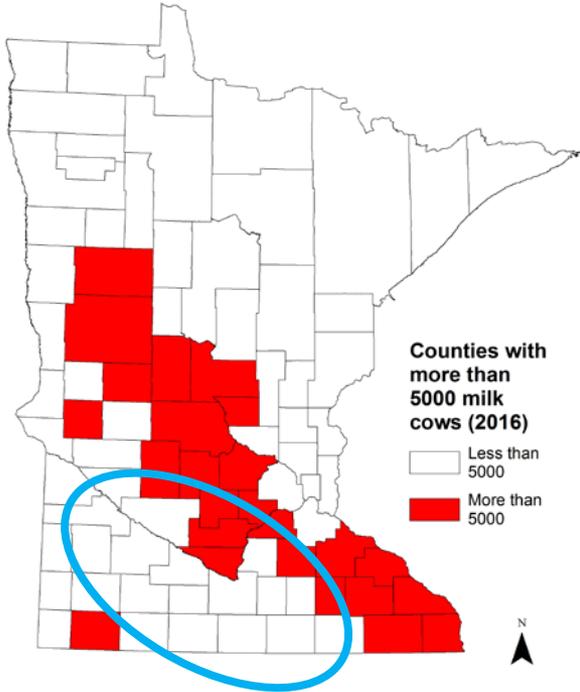
Where is the Demand?



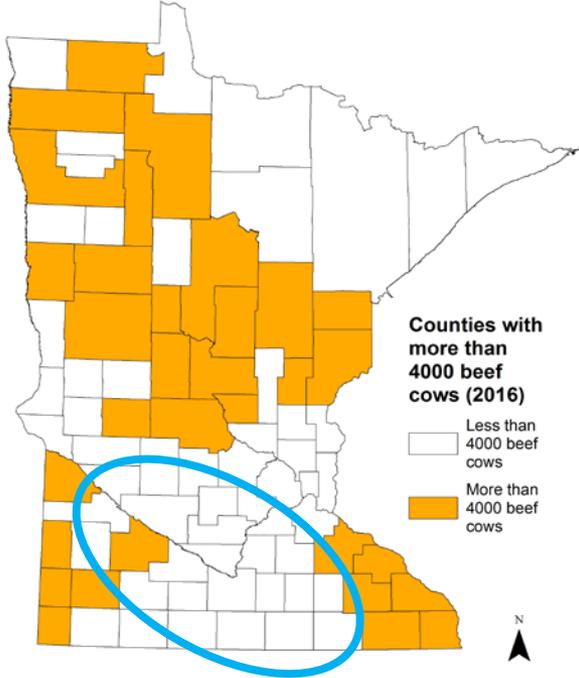
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Supply is Localized to the Demand

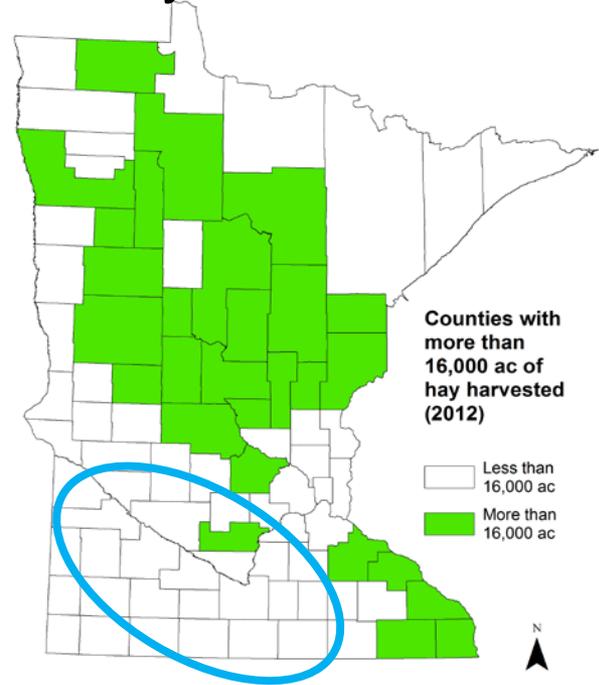
Milk Cows



Beef Cows



Hay Production



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Transportation Costs Add Up

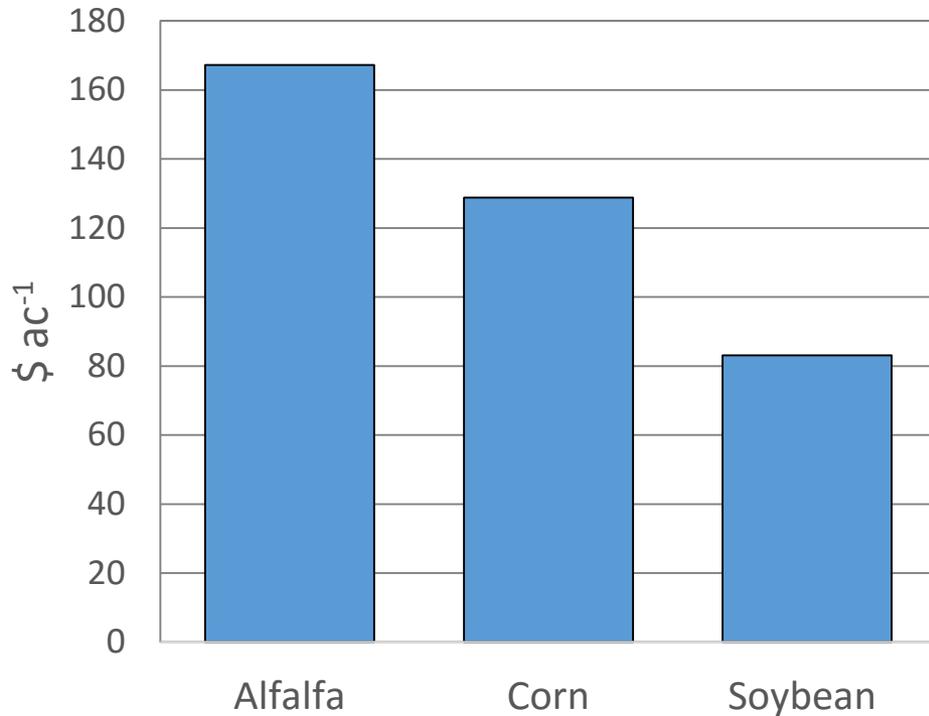
- For example, growing alfalfa in:
 - Stearns county: local market
 - 10mi transport x \$2 loaded mile = \$20 per load
 - ~\$3 ac⁻¹ avg.
 - Faribault county: no local market
 - 160 mi transport x \$2 loaded mile = \$320 per load
 - ~\$44 ac⁻¹ avg.

Hay Quality is Important

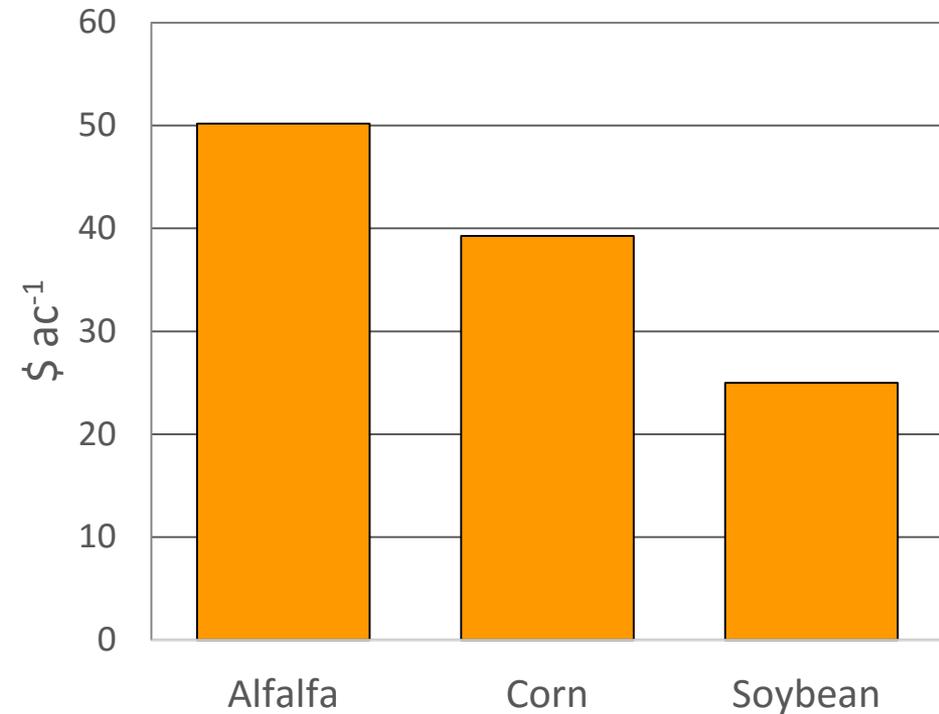
- Hay auction reports (Sauk Centre) from this spring have a wide range in alfalfa prices
 - \$30 - \$170 ton⁻¹ for alfalfa
 - Net return range: **-\$268** to **\$352** ac⁻¹ (avg. yields)
- What about poor quality hay?
 - Does not pay to transport very far
 - Need beef cattle or other livestock nearby

Equipment and Repair Costs are Greater for Alfalfa Production

Equipment Cost (\$ ac⁻¹)



Repair Costs (\$ ac⁻¹)

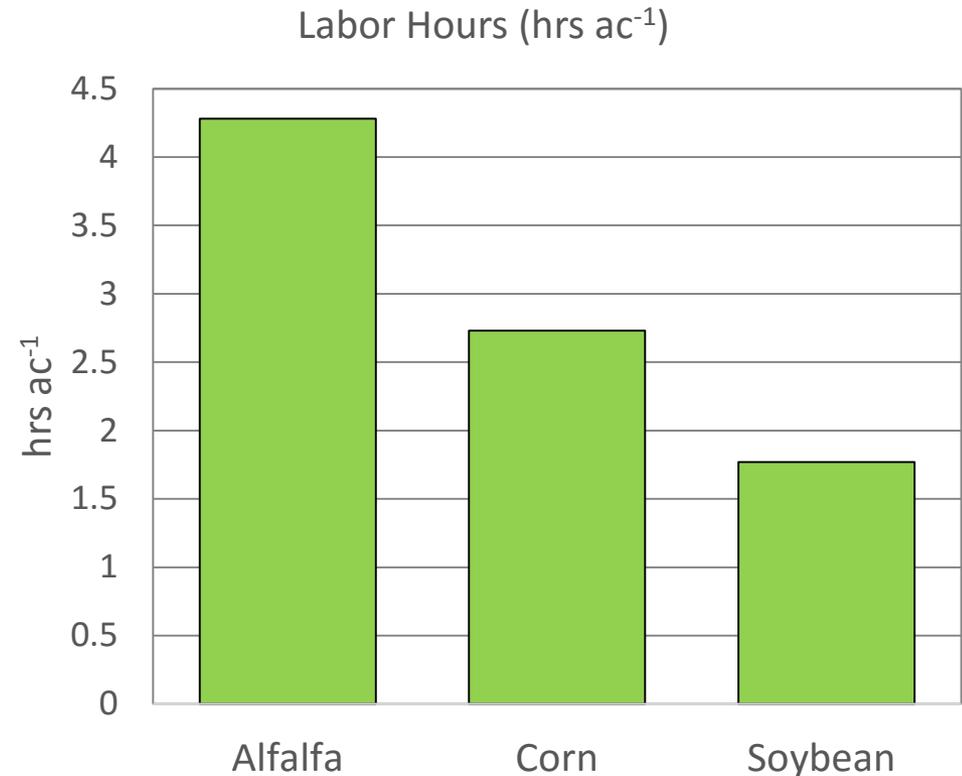


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More Labor for Alfalfa Production

- Growing alfalfa takes more time
 - Alfalfa labor is during the summer
 - More difficult to go on vacation
- Corn and soybean labor is primarily in the spring and fall



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Challenges with Growing Alfalfa

- Economics and Marketing
 - No price-discovery or futures market
 - Difficult to hedge risk
 - Primarily local market
 - Private sales are risky
 - Few hay auctions, especially in S. MN
 - Transportation costs can be substantial
 - Uneconomical to transport poor-quality hay
 - Need to be able to “feed your mistakes” locally
 - Difficult to get consistent, high-quality hay
 - Assume at least 1 cutting will be rained on

Challenges with Growing Alfalfa

- More work than annual crops
 - More labor, equipment, and repair costs per acre
 - Aging farmer population (Average MN farmer is nearly 60)
- Requires specialized equipment Different planting equipment,
 - Requires hay-bine, rake, baler, loader tractor / skidloader, trailer
 - Different storage facilities
- Less flexibility with perennial crops
 - Large percentage of rented land
- Potential for winter-kill

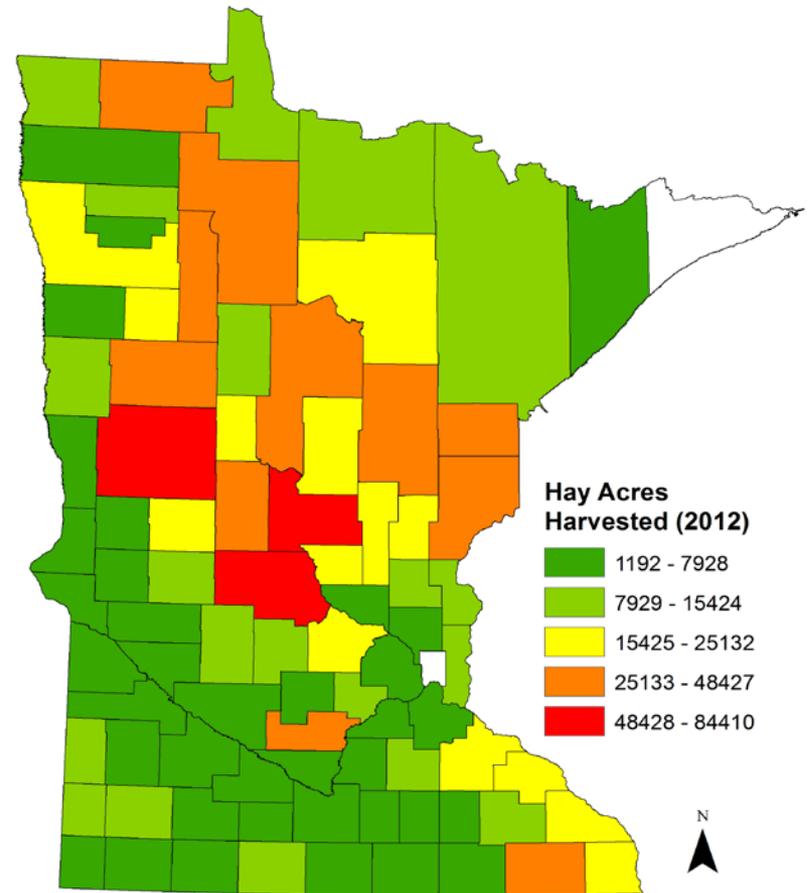
Questions?

Useful resources: finbin.umn.edu | quickstats.nass.usda.gov

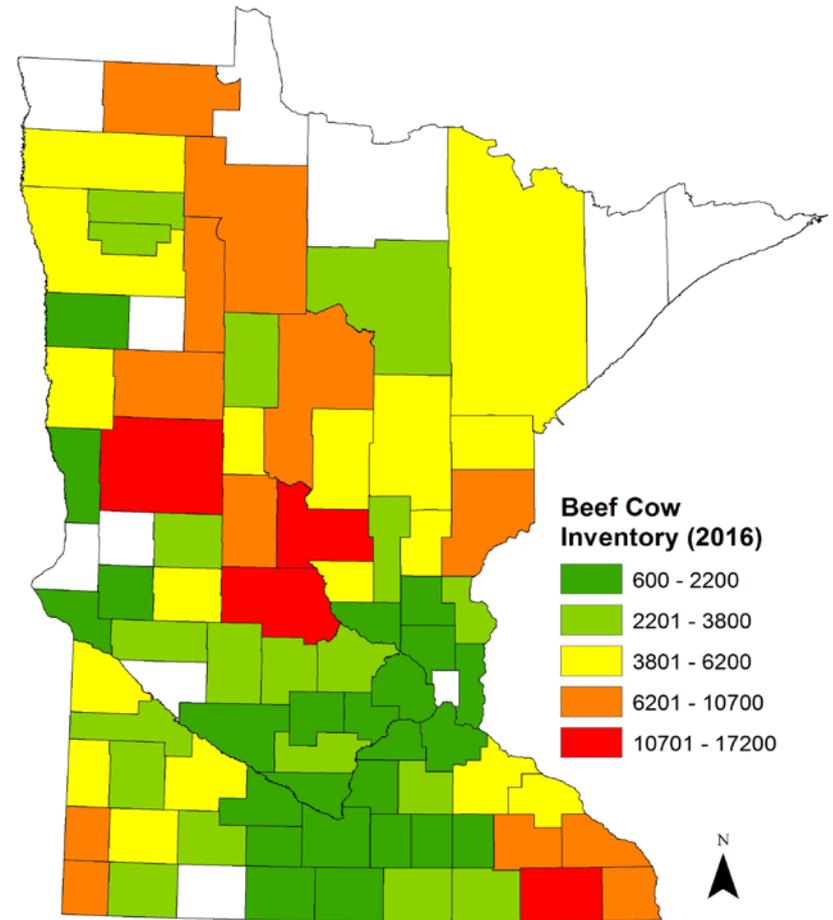
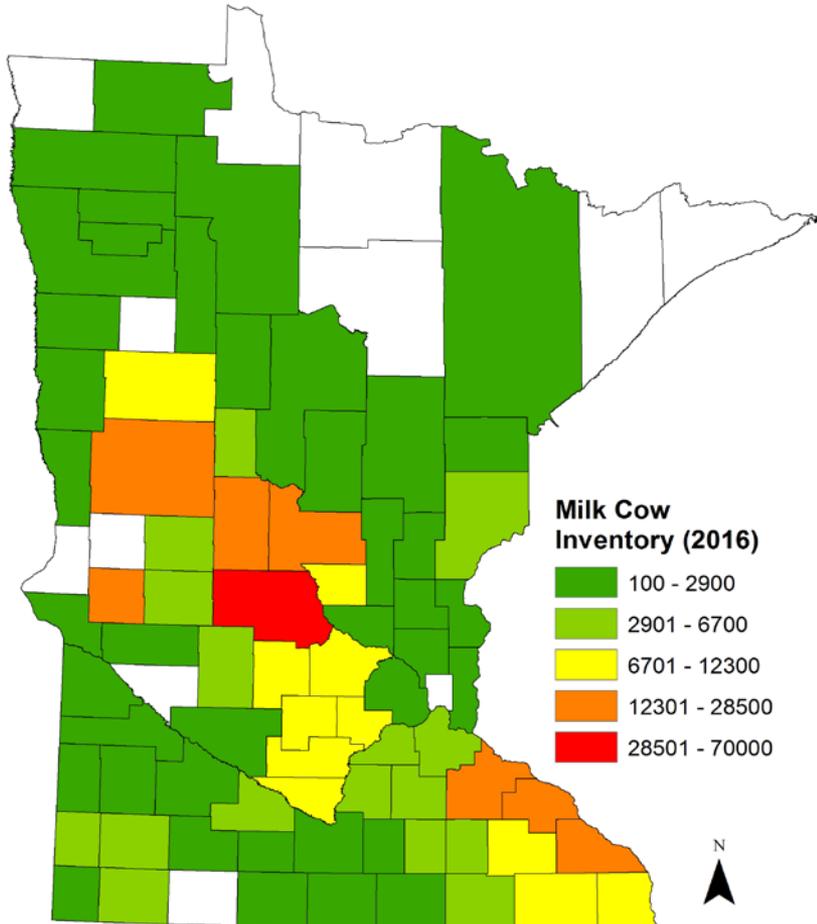


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Where is Hay Grown in MN?



Cattle Production in MN



Cattle Production in MN

