10 Year Average
$59.82/acre

Projected 2022 Margins 200 Bu. from a 10 Year Prospective

South Central College Farm Business Management
Mark Wehe, Instructor
Data sourced from Minnesota State Colleges and University of Minnesota
Kernza planting, Honken Farm, 2018

Photo Credit: Clean River Partners
Kernza Straw Bales, Anderson Farm
Fall Regrowth 2019, Anderson Farm
Spring Grazing 2020, 
Anderson Farm
Fall Grazing 2020,
Anderson Farm
Spring Grazing 2021,
Anderson Farm
Grain Harvest 2021, Anderson Farm
Grain Harvest 2020,
Honken Farm

This field is growing the perennial future.
Kernza Perennial Grain
Intermediate Wheatgrass

Learn more at:
forevergreen.umn.edu
www.crwp.net
### Grazing Intermediate Wheatgrass (Kenza®) as a Dual-Use Crop for Forage and Grain Production, Grazing Timeline

<table>
<thead>
<tr>
<th>Field</th>
<th>Year/Season</th>
<th>Notes</th>
<th>Fall 2018</th>
<th>Spring 2019</th>
<th>Summer 2019</th>
<th>Fall 2019</th>
<th>Spring 2020</th>
<th>Summer 2020</th>
<th>Fall 2020</th>
<th>Spring 2021</th>
<th>Summer 2021</th>
<th>Fall 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anderson</td>
<td>Sprayed Glyphosate Sep 2</td>
<td>Rested, no grazing</td>
<td>Applied 5000 gal/ha manure</td>
<td>Applied 5000 gal/ha manure</td>
<td>Applied 5000 gal/ha manure</td>
<td>Applied 5000 gal/ha manure</td>
<td>Applied 5000 gal/ha manure</td>
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<td>Applied 5000 gal/ha manure</td>
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<td>Applied 5000 gal/ha manure</td>
<td>Applied 5000 gal/ha manure</td>
</tr>
<tr>
<td>Anderson</td>
<td>Planted no-till Sep 10</td>
<td>Stand failed, reseeded &amp; tilled</td>
<td>Sprayed 2,4-D Sept 10</td>
<td>Rested, no grazing</td>
<td>Partially grazed Oct 19-20</td>
<td>Applied 30 lbs/ac Apr 15</td>
<td>Cut &amp; harvest, forage only Aug, planned</td>
<td>Grazing, planned, Oct/Nov</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Henken</td>
<td>Planted, disked 2x</td>
<td>Sprayed 2,4-D, fall tillage</td>
<td>Sprayed 2,4-D, Sept 10</td>
<td>Partially grazed Oct 19-20</td>
<td>Applied 30 lbs/ac Apr 15</td>
<td>Cut &amp; harvest, forage only Aug, planned</td>
<td>Grazing, planned, Oct/Nov</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Anderson Farm
0.76 Ton DM/Ac/Year Grazing Forage
2.62 Tons/Ac/Year Straw

Honken Farm
1.27 Ton DM/Ac/Year Grazing Forage
2.68 Tons/Ac/Year Straw

82 RFV
Grain Yields
Anderson Farm – 413 lbs/ac avg/year
Honken Farm – 506 lbs/ac 2020,
  412 lbs/ac over all acres

29% Reduction in Grain Yield
<table>
<thead>
<tr>
<th>Description</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>Total</th>
<th>Year</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Salary &amp; Wages</td>
<td>$51,000</td>
<td>$51,000</td>
<td>$51,000</td>
<td>$153,000</td>
<td>2018</td>
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<tr>
<td>Benefits</td>
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<tr>
<td>Total Compensation</td>
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<td>$54,000</td>
<td>$162,000</td>
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<tr>
<td>Non-Salary Benefits</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$15,000</td>
<td>2018</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$59,000</td>
<td>$59,000</td>
<td>$59,000</td>
<td>$183,000</td>
<td>2018</td>
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</tbody>
</table>

Notes:
- Year refers to the year the data was recorded.
- Total compensation includes salary, wages, benefits, and non-salary benefits.
- Non-salary benefits include additional benefits such as stock options or company stock.
Financial Outcomes per Acre per Year
Kernza Dual Use 2018-2021
(Includes one year failed crop on and one year grain not harvested on one farm)
Comparing Kernza Production Options
Average Net Return to Enterprise
Across Two SE MN Farms, 2018-2021
Per Ac Per Year

$173

$64

$110

Kernza Grain & Straw, No Grazing
Kernza Grain Only, No Straw, No Grazing
Dual Use

Assumes 25% increase in grain production when not grazing
Cumulative Net Return to Enterprise per Acre
Anderson Farm

Total Net Return to Enterprise 2018-2021 $18,618

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
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<tr>
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<td>$322</td>
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<td>$217</td>
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<td>$232</td>
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</tbody>
</table>

10 Year Average
$59.82/acre

Kernza Production Financial Outcomes Dual Use Cumulative Net Return to Enterprise per Acre Across Two SE MN Farms

Total Net Return to Enterprise 2018-2021 $8,690

PROJECTED 2022 MARGINS 200 BU. FROM A 10 YEAR PROSPECTIVE

10 Year Average
$59.82/acre

Net Return Per Acre Prior to Government Payments and Owner Distributions
Grazing Intermediate Wheatgrass (Kernza®) as a Dual-Use Crop for Forage and Grain Production

QUESTIONS