Farmers are interested in growing small grains and can successfully do so when equipped with cost share and community of practice (Figure 1). Cost share linked to markets and funded by private investment is essential for increased adoption.

$43,375 private dollars were invested in small grain cost share and direct purchasing in 2020 and $212,845 have been invested in 2021.

68% of cost share participants in 2020 said the program helped them increase their acres of small grains. 54% of cost share participants in 2020 were new to growing small grains (less than 3 years experience or growing small grains for the first time in more than 11 years).

A crucial market for small grains is livestock feed. Feeding trials show that cattle perform equally well when 22% of their total mixed ration (TMR) is oats (Table 1).

Cattle were fed two different rations, with and without oats, for 205 or 230 days, depending on the ration. Dry matter (DM) intake, feed efficiency, morbidity and mortality were similar between the two ration groups. (Table 1). Read the full report here: bit.ly/OatsInBeefRations

### Takeaways

1. Increased private investment in feed and seed small grain markets.
2. Policies that incentivize extended rotations and reward long-term benefits.
3. Strong peer networks for growers to support and learn from each other.

Corn has the highest per acre emissions in an extended crop rotation (Figure 3), primarily due to its high fertilizer applications (Figure 4A). A decrease in fertilizer from 200 pounds of Nitrogen to 150 pounds of Nitrogen could lower GHG emissions by allowing farmers to grow their own nitrogen via leguminous cover crops (Figures 3 & 4). Greenhouse gas emissions by allowing farmers to grow their own nitrogen via leguminous cover crops (Figures 3 & 4).

A cut of 50 pounds per acre can save farmers $201 per acre, while not forsaking yield (Figure 4B). This cut is possible in extended rotations due to the ability for farmers to grow their own Nitrogen with legume cover crops like red clover.

### On-farm monitoring and modeling continues to demonstrate small grains improve water quality (Figure 2) and can reduce greenhouse gas emissions by allowing farmers to grow their own nitrogen via leguminous cover crops (Figures 3 & 4).

Corn has the highest per acre emissions in an extended crop rotation (Figure 3), primarily due to its high fertilizer applications (Figure 4A). A decrease in fertilizer from 200 pounds of Nitrogen to 150 pounds of Nitrogen could lower GHG emissions by a predicted 625 lbs of CO₂e per acre (Figure 4A).

A cut of 50 pounds per acre can save farmers $20 per acre, while not forsaking yield (Figure 4B). This cut is possible in extended rotations due to the ability for farmers to grow their own Nitrogen with legume cover crops like red clover.

### Table 1. Performance, morbidity and mortality of cattle through March 21, 2021 when fed a standard total mixed ratio (TMR) and a TMR where 22% of corn was replaced with oats (TMR-OAT). By row, results that differ by less than the least significant difference (LSD) are followed by the same letter rankings and are considered statistically equal. Results followed by a different letter ranking are considered statistically different at the 95% confidence level.

<table>
<thead>
<tr>
<th></th>
<th>TMR</th>
<th>TMR-OAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>DM conversion, lb of feed/lb of gain</td>
<td>8.58 a</td>
<td>8.77 a</td>
</tr>
<tr>
<td>Morbidity, % of animals</td>
<td>0.03 a</td>
<td>0.01 a</td>
</tr>
<tr>
<td>Mortality, % of animals</td>
<td>0.01 a</td>
<td>0.00 a</td>
</tr>
<tr>
<td>DM intake, lb of feed/day</td>
<td>27.0 a</td>
<td>28.0 a</td>
</tr>
</tbody>
</table>

### Methods

**Feed Trials:** Cattle were fed two different rations, with and without oats, for 205 or 230 days, depending on the ration. Dry matter (DM) intake, feed efficiency, morbidity and mortality were similar between the two ration groups. (Table 1). Read the full report here: bit.ly/OatsInBeefRations

### References

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