Wheat plus Second Crop Economics
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Objective
To determine effects of wheat and soybean grain yield and profitability.

Background
Crop Year: 2017
County: Wood
Location: Custar, OH
Drainage: Systematic, 35’ laterals
Previous Crop: Soybeans
Varieties: Wheat: Rupp 902
Soybean: Pioneer 31T11
Red clover: Cisco Gallant
Oats: Everleaf Forage
Planting Date: Oct. 12, 2016 (Wheat)
June 6, 2017 (Soybean)
Harvest Date: July 3, 2017 (Wheat)
Oct. 19, 2017 (Soybeans)
Soil Type: Hoytville clay loam
Tillage: Conventional
Soil Test (grid avg): pH 7.0
P 34 ppm (Bray-P1)
K 196 ppm
CEC 16.1 meq/100g
OM 3.8%
Starter Fertilizer: 30-78-78/acre

Methods
This trial was designed with nine treatments replicated four times in a randomized complete block design (See Table 1). Plots were 10 feet wide by 75 feet long. All treatments received the same starter fertilizer, herbicide and topdress nitrogen. The trial was planted, sprayed and harvested with small test plot equipment. Yields and moistures were measured by using a calibrated weigh wagon and commercial moisture tester. Yields were standardized to 15% moisture content.
Results

Table 1. Wheat plus Second Crop Economics

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Wheat Yield (bu/ac)</th>
<th>Soybean Yield (bu/ac)</th>
<th>Forage Yield (tons/ac)</th>
<th>System Gross Revenue*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Soybeans in 15” rows (160,000 seeds/ac)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Frost seed red clover in March (10#/A)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Wheat in 7.5” rows (1.8 M seeds/ac)</td>
<td>113.4 a</td>
<td>60.6 a</td>
<td>1.8 b</td>
<td>$545</td>
</tr>
<tr>
<td>4. Wheat in 15” rows (.9 M seeds/ac)</td>
<td>107.2 b</td>
<td></td>
<td></td>
<td>$454</td>
</tr>
<tr>
<td>5. Wheat in 7.5” rows fb dbl crop soybeans</td>
<td>114.0 a</td>
<td>29.7 c</td>
<td></td>
<td>$723</td>
</tr>
<tr>
<td>6. Wheat in 7.5” rows w/ frost seed clover</td>
<td>110.4 ab</td>
<td>2.9 a</td>
<td></td>
<td>$587</td>
</tr>
<tr>
<td>7. Wheat in 15” rows w/MRI soybeans</td>
<td>92.8 c</td>
<td>42.9 b</td>
<td></td>
<td>$757</td>
</tr>
<tr>
<td>8. Wheat in 15” rows w/frost seed clover</td>
<td>108.8 ab</td>
<td>3.1 a</td>
<td></td>
<td>$590</td>
</tr>
<tr>
<td>9. Wheat in 7.5” rows fb forage oats</td>
<td>112.9 ab</td>
<td>1.1 b</td>
<td></td>
<td>$507</td>
</tr>
</tbody>
</table>

LSD (P<.05) 5.82 11.03 0.96
CV 3.61 14.35 41.87

* Based on $9.00/bu soybeans, $4.00/bu wheat and $50/ton forage

Discussion:
Treatments 3, 5, 6, 8 and 9 resulted in a significantly higher wheat yield than all other treatments. Treatment 1 resulted in the significantly highest soybean yield of the three treatments with soybeans. Treatments 6 and 8 resulted in the significantly highest forage yield of the four treatments with forage.

After an economic calculation using standard prices, treatments 5 and 7 resulted in the greatest economic return (over $700 each) for 2017. Treatment 2 resulted in the lowest economic return of all treatments in 2017.

This trial is a three year trial in its second year, it will be repeated in 2018. Corn yield impact in the year following will also be evaluated from 2017-2019.

Acknowledgement
The authors express appreciation to Matt Davis at OARDC Northwest Branch for conducting this trial. Thanks to agronomy interns Ross Andre and Kaitlin Ruetz for helping with the data collection on this plot. This trial is supported by the Ohio Small Grains Marketing Program.