Three things

Thomas Björkman
Department of Horticulture
Cornell University
Buckwheat stands

No gaps over 8 inches
Ground cover at 18 d
5 weeks

14 inch gap

4 weeks
Small grains

Can inhibit vegetable growth

If killed at boot stage

Cause is *not* N shortage or allelopathy
Small grains

Wheat  Triticale  Rye
Headed grain effect

Direct-seeded vegetables after grains

Biomass (% of Bare ground)

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<tr>
<th>Winter cover crop</th>
<th>Rye</th>
<th>Triticale</th>
<th>Wheat</th>
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<td>Cucumber</td>
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<td>Sweet corn</td>
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Headed grain effect

Transplanted vegetables after grains

Biomass (% of Bare ground)

Winter cover crop

Rye

Triticale

Wheat

Cabbage

Tomato

Pepper
Keys to success

• Fast start
• No gaps
• Kill on time
Winter Hardiness

- Tiny plants frost heave
- Rosettes are hardy
- Bolted and swollen parts are less hardy

Choose variety, date, fertility to get survival you need.
Fall crucifers

Don’t plant too late

Mid August for north side of Lake Erie
Or 1600 GDD$_{32\degree F}$ left in season
0.5 T/ac for every 100 GDD\textsubscript{32} over 1300
Cold hardiness does not change the story
Same date with cold hardy
Don’t wait to plant

August 4  August 15  Sept 2  Sept 15
Yellow mustard
Winter canola
Wichita fertility