



Cover Crops

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Accelerating Ag Innovation and Investment

New Uses Forum 2019

The Forever Green Initiative

Developing high-efficiency agricultural systems

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UNIVERSITY OF MINNESOTA

Driven to Discover®

Objectives

- Develop new perennial and winter annual crops
- Select crops that provide new ingredients for the food industry
- Design cropping systems that provide ecosystem services



Strategy



Plant Breeding and Genomics



Agronomics



Food Science



Commercialization



Supply Chain Development

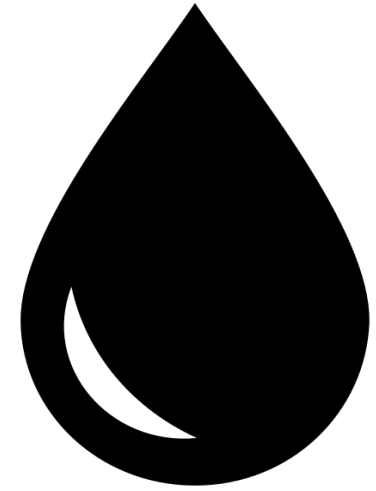
Strategy



New Food Ingredients



New Economic Opportunities



Ecosystem Services

New Food Ingredients



Oils



Fiber



Protein



Phytonutrients

New Economic Opportunities



High Value Ingredients



Green Marketing



Innovative Food Products



Enhance and Diversify Farmer
Income

Ecosystem Services

- Clean water
- Carbon sequestration
- Pollinator habitat
- Soil health
- Erosion prevention



PERENNIAL CROPS:

- **Intermediate wheatgrass**
“Kernza” – grain, forage
- **Perennial sunflower** – edible seeds, oil
- **Native polyculture grassland mixtures** – biomass, forage natural products
- **Perennial flax** – edible oil
- **Kura clover** – N-fixing cover crop
- **Silphium** – edible oil

WINTER ANNUAL CROPS:

- **Pennycress** – edible oil, biofuel, cover crop
- **Camelina** – edible oil, biofuel, cover crop
- **Winter barley** – food, malting barley
- **Hairy vetch** – N-fixing cover crop

NATIVE WOODY CROPS:

- **Hazelnuts** – edible oil, nuts
- **Elderberry** – antioxidant-rich fruit



Kernza® Intermediate Wheatgrass

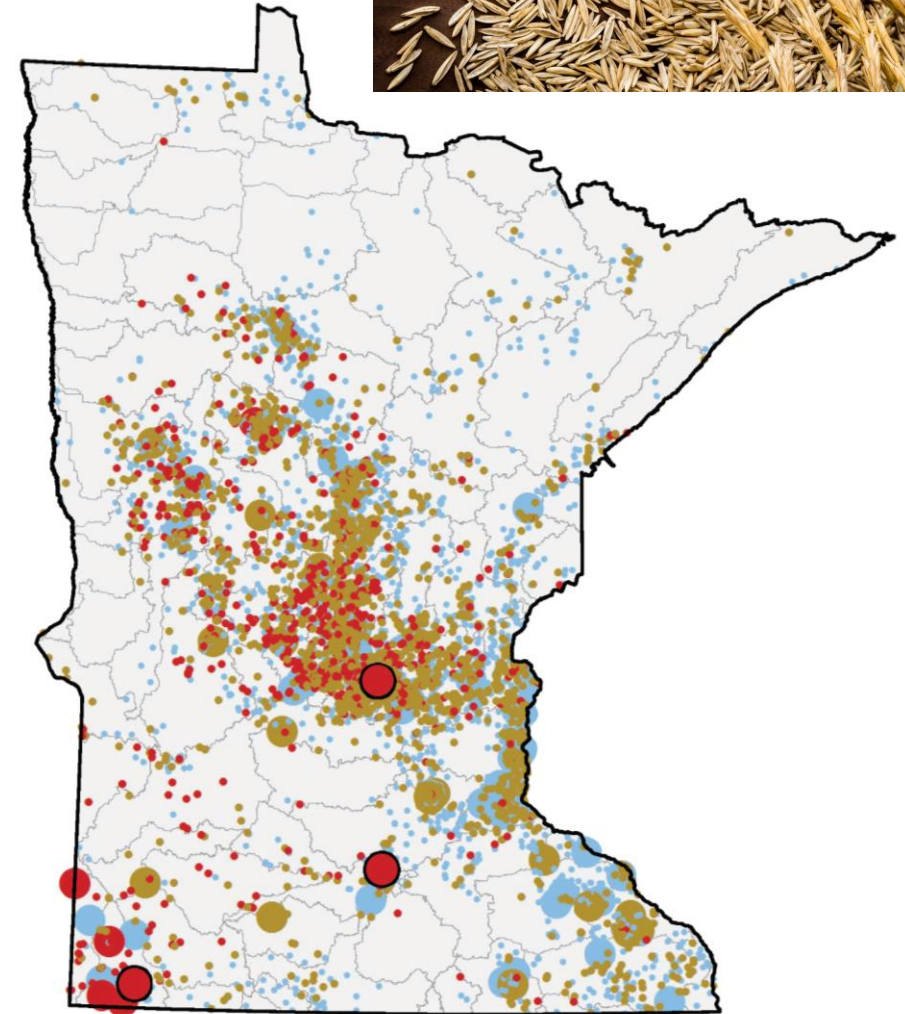


Photo by Jim Richardson

