

Objectives

- **Soil erosion preventer**
 - Plant as early as possible (< Aug. 15)
 - Select winter-hardy cover crop
- **Soil builder**
 - Increase soil organic matter
 - Improve soil structure
 - Increase living organisms
- **Reduce soil moisture(wet years)**
- N source and N scavenger
- Grazing value
- Weed fighter
- Enhance wildlife/pollinators

Cropping system/Tillage/Location

- **No-till or conventional**
- **Current crop/next cash crop**
- **Planting window**
 - Prevented Planting (warm- and cool-season)
 - Before August 15 (warm- and cool-season)
 - After August15 (cool-season)
- Herbicide carry-over (restrictions)
- Soil type and limitations
 - Heavy clay
 - Saline



HOW TO SELECT A COVER CROP OR COVER CROP MIX?

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Professional **Development Program**

“Enhancing Soil Health
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Dakota”

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COOL-SEASON COVER CROPS/FALL PLANTING

Cereals/ grasses	Brassicas	Legumes (Nfix)	Others
<ul style="list-style-type: none"> •Winter cereal rye (E, Nsc, M) •Winter triticale (E, Nsc, M) •Triticale (E, Nsc, G) •Barley (E, Nsc, G) •Oats (E, Nsc, G) •Black oats •Annual ryegrass (E, G) •Winter wheat (E,G) 	<ul style="list-style-type: none"> •Radish (S, G, Nsc, Psc) •Turnip (S, G) •Kale (S,E, G) •Winter canola (S,E,G) •Rape (S,E,G) •Winter camelina (S,E,P) •Mustards (S,E) •Ethiopian cabbage (S,E) •Field Pennycress (S,E,P) 	<ul style="list-style-type: none"> •Forage pea(E, G) •Winter Austrian peas (E,G) •Hairy vetch (E, G) •Crimson clover (E,G) •Red clover (E,G) •White clover (E,G) •Sweetclover (E,G) •Berseem clover (E,G) •Chickling vetch (E,G) •Faba bean (E,G) •Lentil (E,G) •Lupin 	<ul style="list-style-type: none"> •Flax (Psc) •Plantain •Chicory

WARM-SEASON COVER CROPS/ SUMMER PLANTING/PREVENTED PLANTING

Cereals/grasses	Legumes (Nfix)	Others
<ul style="list-style-type: none"> •Forage sorghum (E,G,M) •Sudangrass (E,G,M) •Sorghum x sudan (E,G,M) •Foxtail millet (German and Siberian)(E,G,M) •Japanese millet (E,G,M) •Pearl millet(E,G,M) •Proso millet(E,G,M) •Teff(E,G,M) 	<ul style="list-style-type: none"> •Cowpea (G) •Sunhemp 	<ul style="list-style-type: none"> •Amaranth (P, M) •Buckwheat (P, Psc) •Phacelia (Nsc, P) •Sunflower (P, Nsc) •Safflower •Chicory •Okra

Mixtures: Choose cover crops with different benefits.

Mix 1 soil builder (S) + N source (Nfix)/N scavenger (Nsc) + erosion preventer (E) + others

Mix 2: non-legume broadleaf + legume +cereal

Mix 3: Warm- and cool-seasons (before August 15)

Other ecosystem services: Grazing =G, Wildlife=W, Pollinators=P, Moisture = M, P scavengers= Psc

PLAN AHEAD
PURCHASE QUALITY SEED FROM A KNOWN SOURCE