Cover Crops and Cattlemen

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Steps to Soil Health

- Least disturbance
- Cover/litter
- Diversity
- Active roots
- Livestock

Resource Concerns

Soil Protection

water wind erosion

Soil Structure

Aggregate stability/bulk density

Soil Fertility

Organic matter/microbial life

Water Management

infiltration – use – salinity

Wildlife Enhancement

habitat/food

Cattle Feed

cost competitive/performance

Cow Feeding Costs

Summer Pasture

$25-35/AUM = $.83 to $1.16/day

Stalk/Aftermath Grazing

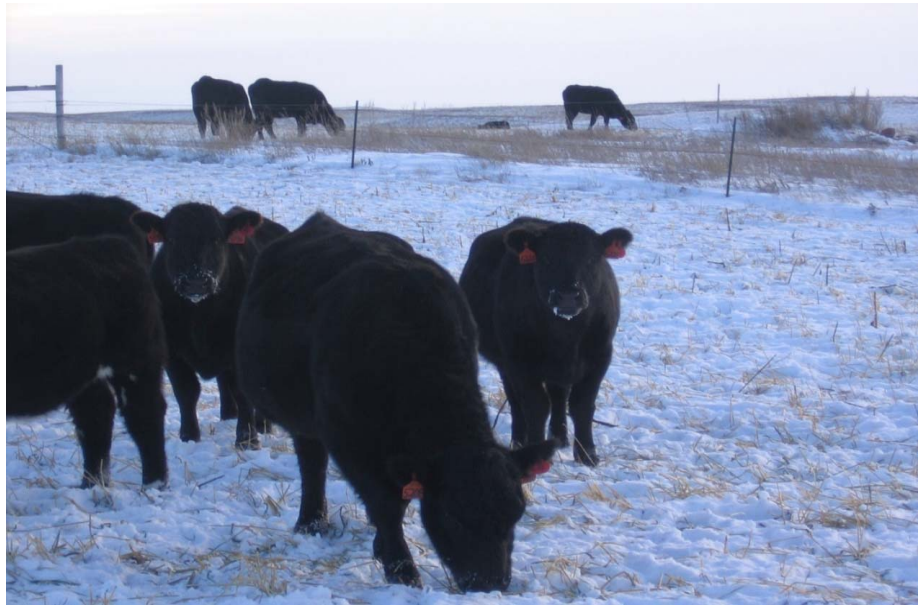
$15/AUM + Supplement = $.67/day

Winter Hay

40lbs x $.03/lb + yardage = $1.45/day

Annuals for Grazing

land	50
spray	10
seed	40
fence, fertilizer, opportunity	??
Total Cost	$50 - 100/acre+
Breakeven relay crop	33-44 days
Breakeven primary crop	66-88 days



Cover Cropping Opportunities

Full Season – planted in late spring/early summer as primary use

Diversity - warm season grasses – sudan, sorghum, millet, corn

warm season broadleaves – soybean, sunflower, sun hemp, cowpeas

cool season grasses – winter cereals, annual ryegrass, oats, barley

cool season broadleaves – peas, clovers, radishes, turnips, vetch

Use - late summer, fall, winter grazing - potential swath graze or hay 3000-8000 lb production

Limitation- competing with cash crop, late graze cereals with grain set, frost and freeze precautions, quality

"no brainer" for cattlemen on PP with fence(able) acres

Cover Cropping Opportunities

Fall Seeded Winter Annuals – Seeded early fall post harvest for next season use

Diversity – winter cereals – rye, triticale , wheat

biennial legume – hairy vetch, sweet clover

Uses – very limited fall grazing, spring pasture, hay or haylage , followed by a second forage/cover crop 4000-6000 lb production

Limitations- drop in quality with cereal heading, high production in short window, competes with cash grain crops

facilitates latter turnout on native pastures, high quality lactation ration

Cover Cropping Opportunities

Fall Relay – seeded post harvest in early fall following early harvested crop as hay, barley peas, canola

Diversity – cool seasons grasses – late maturing oat, barley, winter cereal, annual rye grass

brassicas – turnip, radish, canola, sugar beet

cool season legume – peas, lentils, crimson red clover

Use – extended fall early winter grazing production highly variable 0 to 5000 lbs

Limitations – short growing period with emergence dependent on fall moisture, immediate at harvest

extends growing season with high quality feed for late weaned cows

	Hay Feeding	Spring Pasture	Summer Pasture	Residue Waste	Stockpile Pasture	Cover Crop	Swath Graze
JAN							
FEB							
MAR							
APR							
MAY							
JUN							
JUL							
AUG							
SEP							
OCT							
NOV							
DEC							

Beauty of Brassicas

Tap root breaks tillage layers and compaction

Great scavenger of nitrogen for later release

High digestibility but low in fiber and laxative best if seeded with cereal/grass or added fiber is available

Very frost tolerant for late season growth and quality

Some utilization of turnips on loose soil

Provide iodized salt when grazing

C:N ration favors residue breakdown

Small seeded, cheap cost 1-2 lbs

Limitations of Warm Season Grasses

In summer mixes limit the sorghum-sudan inclusion to 4-5 lbs or may dominate

Proso millet considered very good for wildlife

Foxtail millets excellent forage but won’t stand up through snow

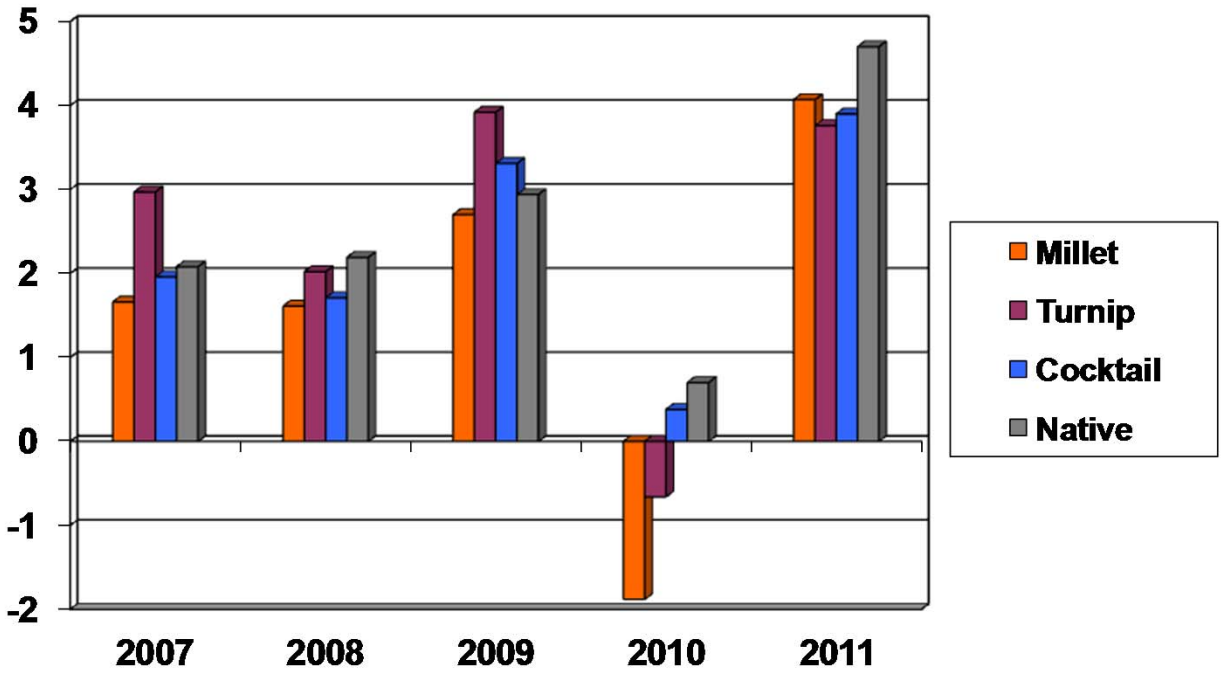
Very frost sensitive so probably should not include in fall seedings

Potential for prussic acid or nitrate accumulations with stress and light frosts

Legumes
Cost/ac to Seed

Soybean	$9.00
Forage Soybean	65.00
Red Clover	16.00
Cow Peas	$27.20
Field Pea	16.20
Hairy Vetch	32.00
Lentils	19.20
Sweetclover	20.00

Animal Performance



Swath Grazing an Option

Summer seeded forage crops can be windrowed at frost or heading to maintain quality

Minimizes trampling losses and improves utilization

If used late under heavy, crusting, or drifting snow, allocated use by temporary fencing

Estimated of dry matter yield divided by 55 will approximate grazing days per acre

Corn Grazing an Option

High input – seed, fertilizer

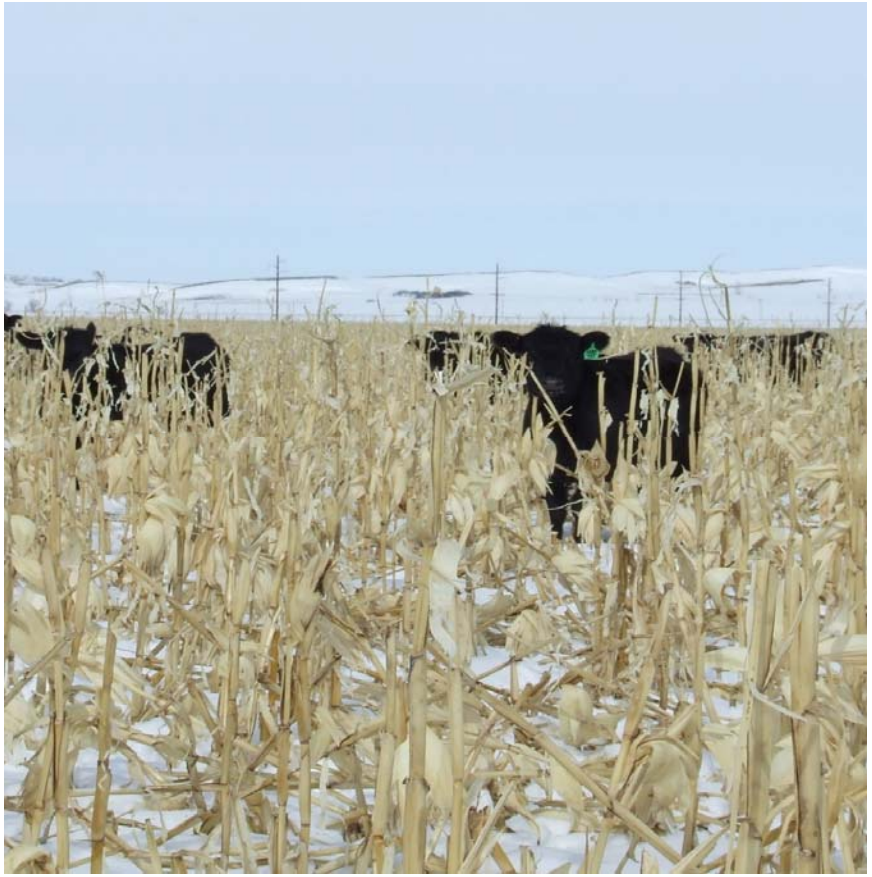
Long season, low grain yield grazing types preferred

Nutritional metabolic risk – grain overload, acidosis, abortion, founder, death

High carrying capacity – 120 to 200 grazing days per acre

Allocated use for efficient utilization

Vitamin/mineral supplementation and available hay



Grazing Efficiency ?

Possible with allocated use and dry conditions to get very high grazing utilization (high quality forage) but animal performance may decline

Trampling, snow and freezing, wastage likely limit utilization to 60%

Consider take half leave half, to feed cattle, feed soil, and protect surface

Estimation of dry matter quantity divided by 50 lbs times percent utilization estimates carrying capacity per acre

3000lb dry matter / 50 x .50 = 30 days/acre

Some Animal Health concerns and Risks

Don’t turn hungry cattle onto new feed source and provide some hay prior/at turn in

Overeating young tender very digestible plants can cause bloat

Fast growing cereals likely low in calcium and magnesium in spring – tetany

Grain in matured oat, barley, corn has caused bloat and acidosis – founder and death

Late use of mature low quality forage likely requires supplementation

Seeds of some plants – vetch, buckwheat, chickling vetch- have some possible toxicities

Nitrate – prussic acid poisoning possible on highly fertilized and stressed plants

Diversity vs Monoculture

Resiliency

Moisture use

Balanced ration (less toxicities)

70:30 grass:broadleaf for feed

Rotational effect in small window

Pollinators and wildlife

- Sunflower
- Sorghum/sudangrass
- German Millet
- Soybean
- Cowpea
- Kale
- Radish
- Turnip
- Sunn Hemp
- Safflower
- Buckwheat
- Fava Bean

Persian Clover
Berseem Clover
Hairy Vetch
Hybrid Pearl Millet
Crimson Clover
White Millet
Oats
Flax

Crop Choices
A Seeding Mix

Pearl Millet 1 lb
Proso Millet 2 lbs
Sudan 4 lbs
Soybean 15 lbs
Cowpea 10 lbs
Sunflower 1 lb
Radish 2 lbs
Turnip 1 lb
Sweet Clover 1 lb
Corn 1 lb

Other

Volunteers and weeds going to seed

Herbicide residual

Planting depth - establishment

“pugging” and compaction

Excessive residue for planting

Seed cost and availability

Crop insurance regulations

Subsequent crop impact from moisture and fertility status

Cover cropping can provide agronomic and soil benefits
The biomass produced can both feed the soil and cattle

Cover cropping and livestock go together
It’s a win-win for cattlemen