Incorporating Cover Crops into Forage Systems

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What are Cover Crops Good For?


Breaking Up Soil Compaction


Building Soil Organic Matter

Adding Nitrogen to the Soil

Managing Soil Erosion

Managing Soil Moisture

Grazing

Improving Quality of Crop Residues

Outtagrass

Land & Cattle Company

What Cover Crops are Available?

Brassicas/ Broadleaf	Cereals	Legumes/ Clovers	Summer Annuals	Annual grasses
Turnips	Wheat	Hairy vetch	Sorghum	Ryegrass
Radishes	Rye	Red clover	Foxtail millet	Italian ryegrass
Winfred	Barley	Sweetclover	Pearl millet	Teff
Austrian winterpea	Oats	White clover	Japanese millet	
Dwarf Essex Rapeseed	Triticale	Burnett	Sudangrass	
Canola		Crimson clover	Sorghum x sudangrass	
Ethiopian cabbage		Chickling vetch		
Cow pea		Common vetch		

Cover Crops for Grazing

#1 Cost
- Not all cover crops are the same

#2 Cattle Performance
- Moisture content
- C:N ratio

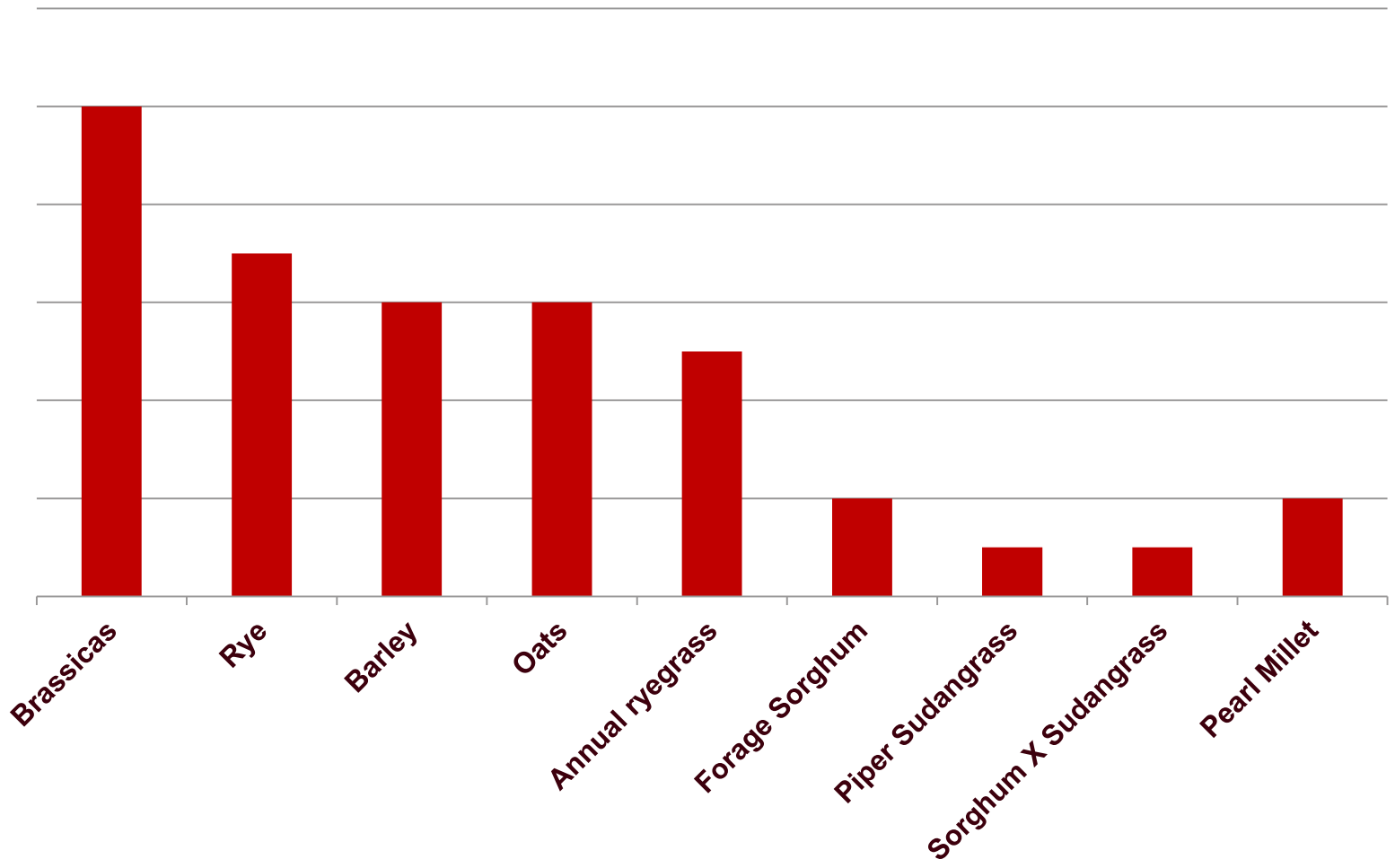
#3 Cold tolerance
- Depends on what you are planning to do with it

#4 Residue management
- If there is residue, what are you going to do with it?
- Cost/Return

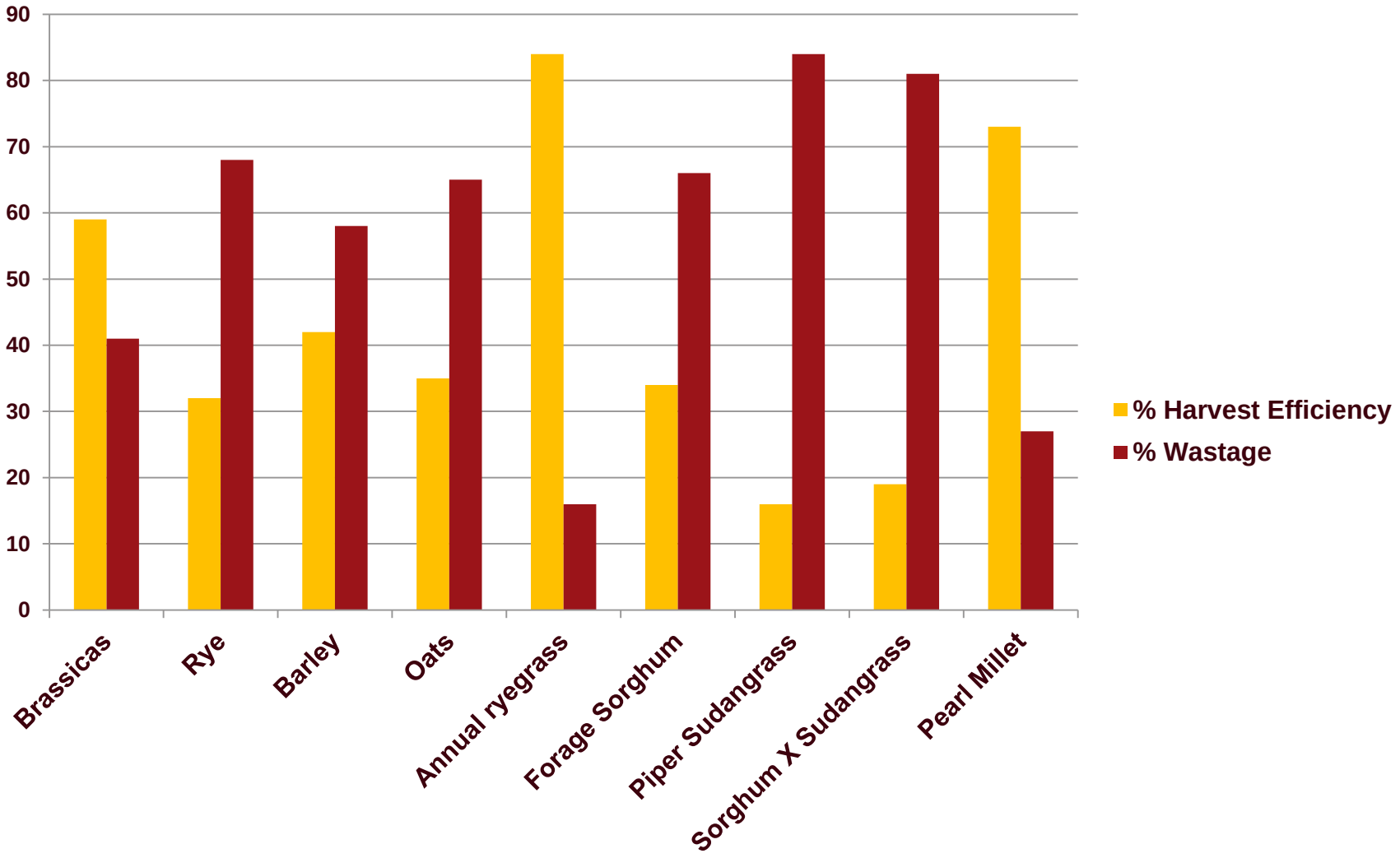
#2 Cattle Performance

- Moisture content
  - Brassica species are about 90% water
  - Cereal grains are about 60-65% moisture at boot stage
  - Millet is about 50-60% moisture at boot
  - Corn stalks are about 8-10% moisture
- C:N ratio
  - Carbon = fiber = ⬇ digestibility
  - Brassica species C:N ratio of 25:1
  - Cereal grains C:N ratio of 40:1
  - Millet C:N ratio of 45:1
  - Corn stalks C:N ratio 60:1

#3 Cold Tolerance



#4 Residue management



Utilizing Cover Crops for the Mature Cow

- Cost and Yield
- Dry Cows; 60 days of grazing

	Brassica Mix	Brassicas + Rye	Brassicas + A. ryegrass	Brassicas + German Millet
DM Yield (T/Acre)	0.53	2.75	1.96	4.15
Cost per acre	$46.00	$126.00	$121.00	$111.00
Cost per T	$92.00	$45.81	$61.73	$26.74
Cost/Cow/Month	$35.78	$19.26	$25.96	$11.23
Days of Grazing/Acre	38	196	140	296

MN Avg. = $64.28/Cow/Month

Utilizing Cover Crops for Weaned Calves

- Weaning = Stress

1. Change in Physical Environment
2. Change in Diet
3. Dehydration

- The average drylot preconditioning program creates these conditions

- Pasture weaning can alleviate some of these conditions

Utilizing Cover Crops for Weaned Calves

30-day preconditioning

	Grass Pasture	Brassica Mix	Brassica + Oats	Drylot
Grazing cost	$5.52	$10.51	$12.35	**
Base Ration Cost	**	**	**	$22.27
Supplement	$4.50	$4.50	$4.50	**
Supplemental Pharma	$0.06	$0.08	$0.10	$0.62
Death Loss Cost	$0.17	$0.42	$0.76	$5.52
Cost Comparison/hd/yr	$10.25	$15.51	$17.71	$28.41*

Grazing Cover Crops for Backgrounding Calves

Grazing Weaned Calves

	CP	Cost/T DM	Performance ADG	COG
Turnip + Radish + Rape	18%	$46.00	1.37	$0.26
Oats	20	$57.33	2.55	$0.18
Millet	14	$26.39	2.57	$0.08
70% Turnip | 30% Oats	18	$47.70	1.56	$0.24
30% Turnip | 70% Oats	18	$53.93	2.23	$0.19
70% Turnip | 30% Millet	16	$40.11	1.78	$0.18
30% Turnip | 70% Millet	15	$32.27	2.36	$0.11
50% Turnip | 50% Oats	18	$51.66	2.26	$0.18
50% Turnip | 50% Millet	16	$36.19	2.31	$0.12

When You Plant Makes a Big Difference

Rough Rule of Thumb:

Every two weeks after AUG 1 decreases forage yield by half.

Last chance to plant:

~ SEP 15

Seed Size

Mixing seed sizes can create some challenges

Seeding method

Drill type

Filler

Seeding Methods

Air-seeder

Seed size will determine calibration

May need some filler to bulk up

Seeding Methods

Drill

Grain box vs. small seed box attachment

General rule of thumb:
Set drill to seed largest seed size at desired rate

Seeding Methods

Seeding rate for some mixes may be only 5 to 8 lbs per acre

Some drills (especially older) don't meter seed very accurately at such a low rate

Add filler to bulk up to 15 – 20 lbs per acre

Seeding Methods

Float

Any method that does not allow for packing will require more seed to get the same stand

One-third to one-half germ rate; smaller seeds work better

Seeding Methods

Aerial

Double the seeding rate (and cost)

Application cost $10-15/ac

Seed anytime when dry-down starts

Seeding Methods

Broadcast

Effective, but requires more seed; Small seeds work better

May need some filler to obtain desired seeding rate

Seeding Scenarios Making It Work For You

July/August following cereal grain Air seed, or Drill

Species	Seed rate/acre	Cost
Oats	*½ bu.*	*$5.00*
Foxtail millet	*5 lb.*	*$5.00*
Turnip	*3 lb.*	*$9.00*
Radish	*1 lb.*	*$3.50*
Winfred	*1 lb.*	*$2.00*
Filler	*5 lb.*	*$2.50*
Total	*45 lbs.*	*$27.00*

Seeding Scenarios Making It Work For You

Corn to chop for silage

Fly on early or drill after chopped

Seeding Scenarios Making It Work For You

Corn to chop for silage Fly on early or drill after chopped

Species	**Seed rate/acre**	**Cost**
Oats	***1/2 bu.***	***$5.00***
Turnip	***3 lb.***	***$9.00***
Winfred	***2 lb.***	***$4.00***
Filler	***5 lb.***	***$2.50***
	40 lb.	***$20.50***

Seeding Scenarios Making It Work For You

Crop insurance

Seeding Scenarios Making It Work For You

Into corn or soybeans to improve residue quality and yield

Float, aerial,

Cows		
Species	**Seed rate/acre**	**Cost**
Annual ryegrass	***20 lb.***	***$10.00***
Crimson clover	***3 lb.***	***$7.50***
Dwarf Essex rapeseed	***1 lb.***	***$1.00***
Filler	***4 lb.***	***$2.00***
Total	***28 lbs.***	***$20.50***

How Many Acres Will I Need?

General Rule of Thumb:

Plant in late-July or early August = ½ acre/cow/month

= 1/3 acre/calf/month

Plant in mid-July to early September = 1 acre/cow/month

= ¾ acre/calf/month

Plant after early September = 1.5 – 2 acres/cow/month

= 1 ¼ - 1.5 acres/calf/month

Thank you!

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