

choosing cover crops varieties and mixtures

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Many Cover Crop Options out there

At least 20 different varieties of Rye
alone

Add Clovers, Winter Peas, Radishes,
Vetches, other Small Grains such as
Oats or wheat, mixtures, etc....

Potential Options are nearly endless



Southern Cover Crop Council Area Map



Functional Groups

- Group different species that share common characteristics
- 6 Basic groups – warm season, cool season, grass, legume, and broadleaf
- Example – Rye, wheat, and Oats all belong to the same functional group. Crimson clover and Blue lupine are in the same group. Cowpea and clover are in different groups.

Identify the Benefits

- Weed Suppression
- Reduced Erosion
- Increased Water Infiltration
- Increased Soil Moisture Retention
- Reduce Compaction
- Provide Nitrogen to the next crop
- Retain Excess Nitrogen
- Promote Soil Health



There is no one cover crop “tool” that will do it all!

Species /Rating	Compaction Reduction	Residue Persistence	Erosion Control	Weed Control	Nitrogen Producer	Tolerates poor drainage	pH range
Black Oats	F	G	VG	E	No	Y	4.5-6.5
Crimson clover	F	G	VG	VG	Yes	N	5.5-7.0
Lupine	G	F	G	G	Yes	N	5.6-7.0
Mustard	G	F	VG	VG	No	N	5.5-6.8
Oats	F	G	VG	E	No	Y	4.5-6.5
Radish	VG	F	VG	E	No	N	5.8-6.8
Rapeseed	G	G	VG	VG	No	N	5.5-7.0
Rye	G	E	E	E	No	Y	5.0-7.0
Hairy Vetch	F	F	G	G	Yes	N	5.5-7.5
Wheat	G	VG	VG	VG	No	N	6.0-7.5
Winter Pea	F	F	VG	G	Yes	N	6.0-7.0

Time Available and Crop Rotation

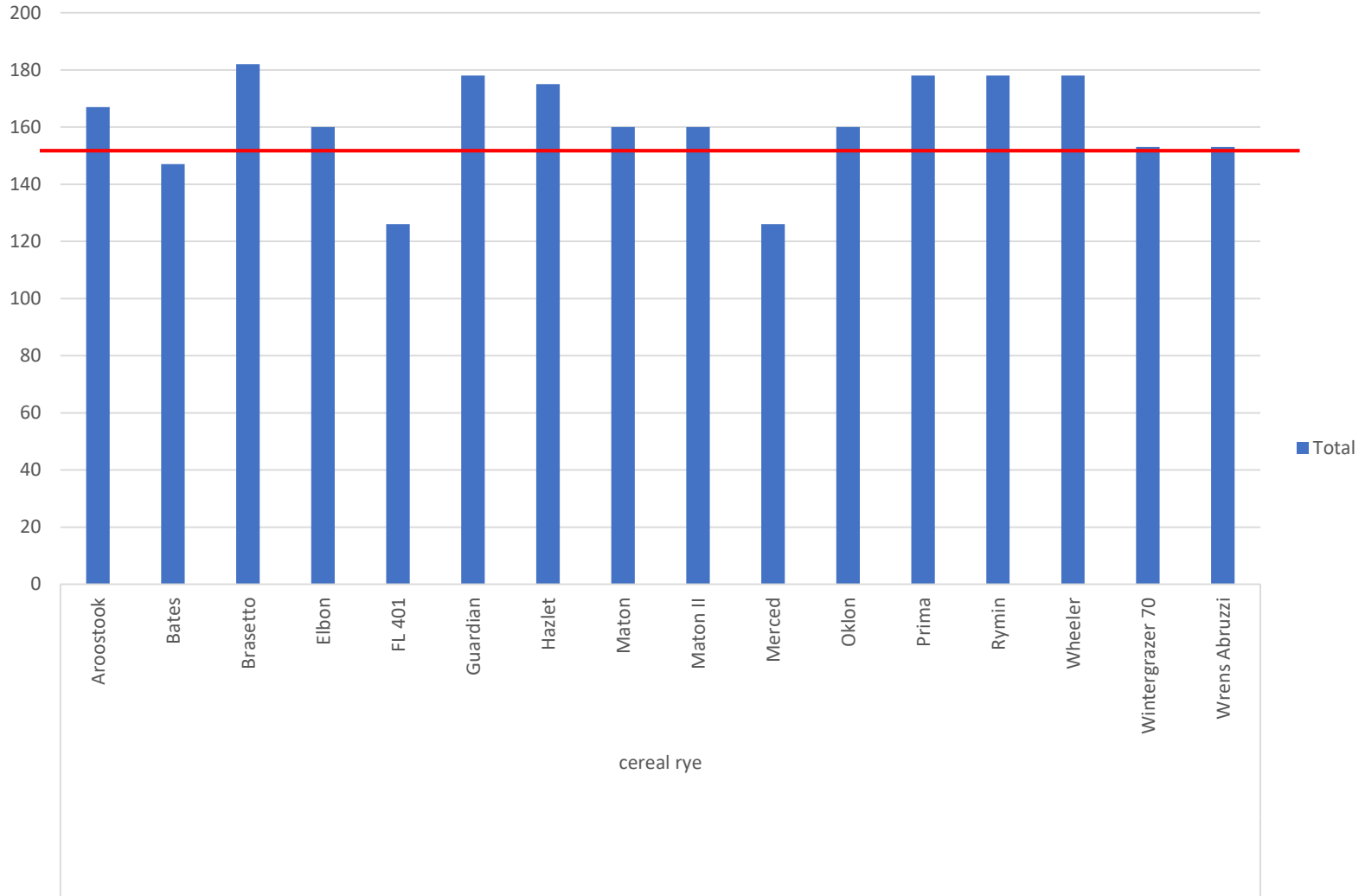
Time

- Begins with realistic planting dates for cover crop
- Ends with termination based on following crop

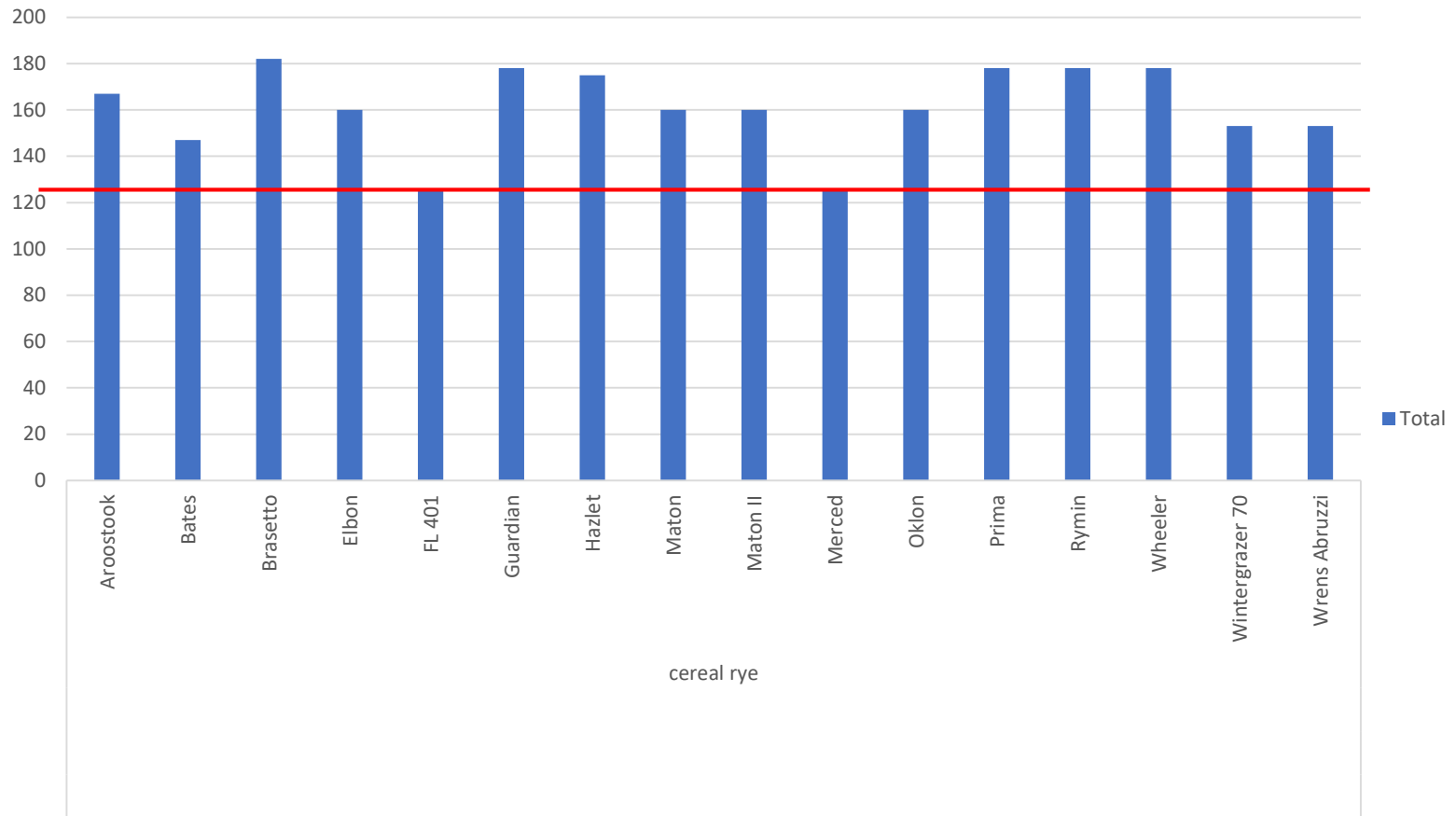
Crop Rotation

- Sequence of crops
- Residual herbicides

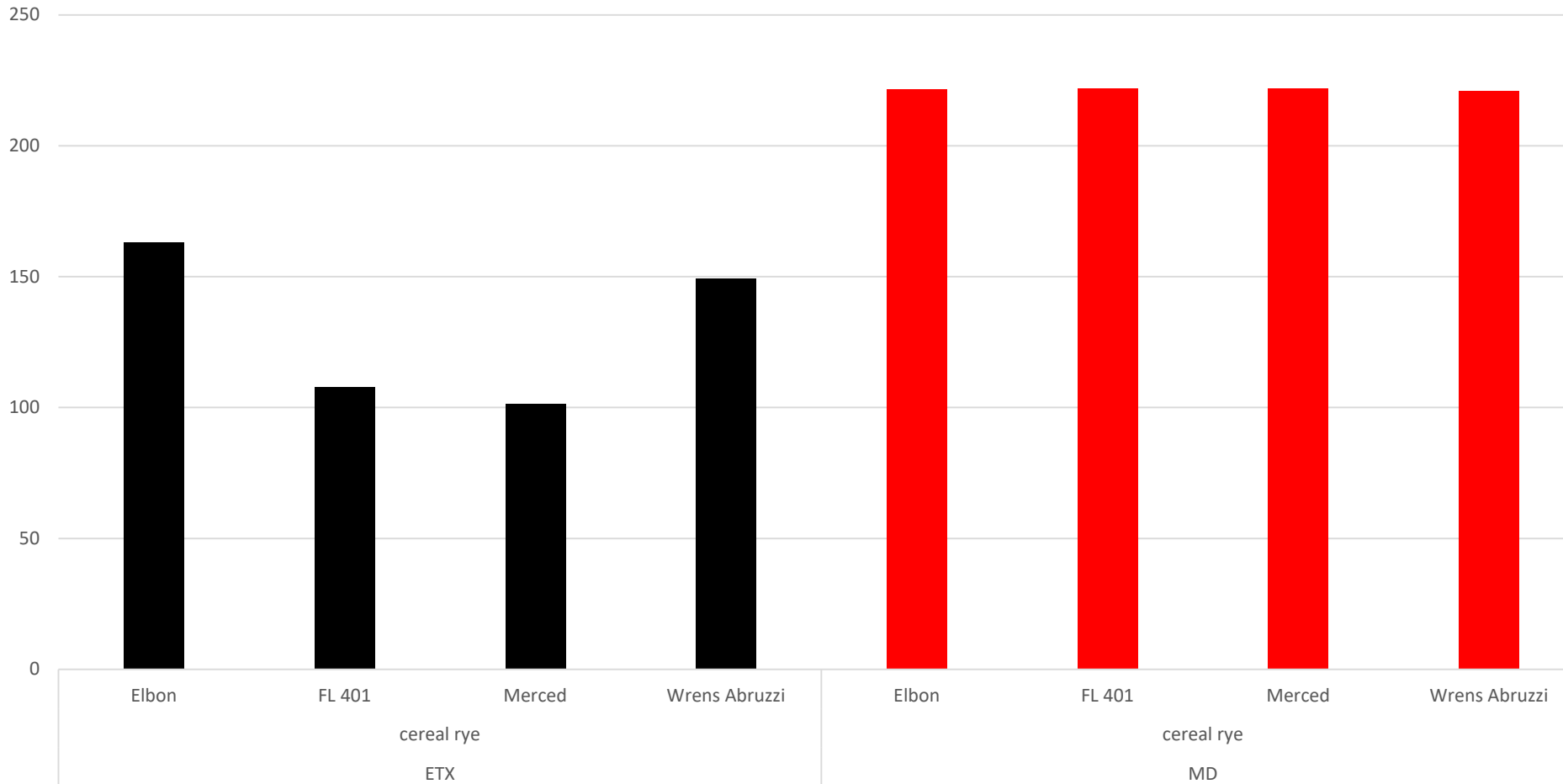
Rye Maturity –late planted crops



Rye Maturity – early planted crops



Rye Maturity – early planted crops



Well Adapted Cover Crop Specie/Variety

- Cold Tolerance – ie. Winter Kill
- Disease Resistance
- Insect Resistance

Daikon Radish Winter kill

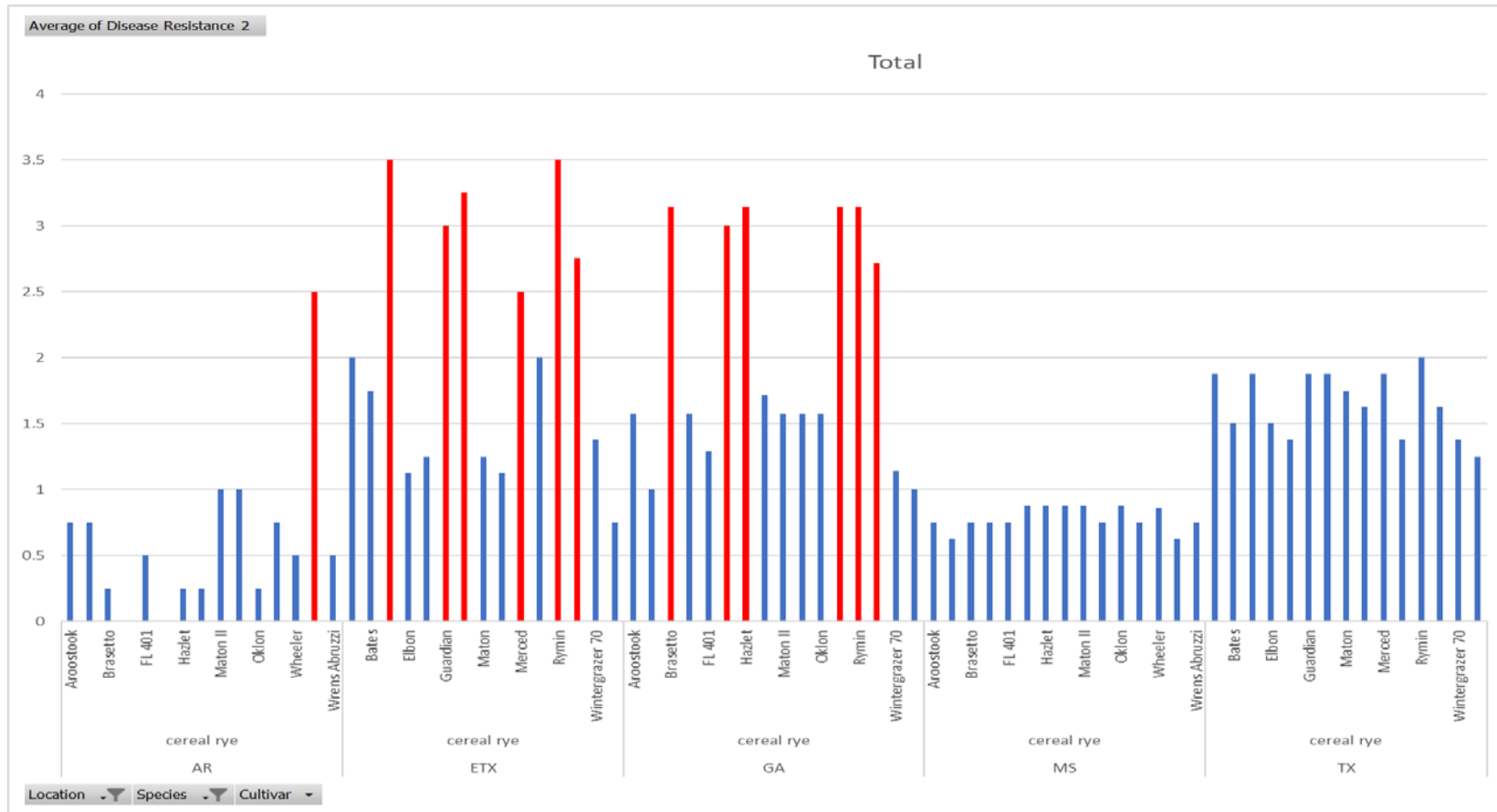
Cultivar	Arkansas	Texas	Georgia	W. Virginia	Maryland	Mississippi
Big Dog	X	X		X	X	X
Concorde		X		X		
Control		X		X		
Defender		X		X		
Driller	X	X		X	X	X
Eco-till	X	X		X	X	X
Graza		X		X		
Groundhog	X	X		X	X	X
Lunch	X	X		X	X	X
Nitro	X	X		X	X	X
Sod Buster	X	X		X	X	X
Tillage	X	X		X	X	X

Daikon Radish

Management across the South

- Upper areas radish will winter kill due to low temperatures
- Mid-South can select for or against winterkill
- Deep South develop termination plan given winter survival

Rye Disease



Determine what will fit

Cost and Availability

- What seed is available?
- What are you willing to pay for CC seed?

Does it fit in the system?

- When do you plan to plant the cover crop?
- When do you plan to terminate the cover crop?
- What is your experience level with cover crops?
- What soil residual herbicides have you applied that could affect your cover crop?
- What is the crop rotation?

What goals do you have for the cover crop?

- What reason do you want to grow the cover crop?



Varieties/Species Concerns

- **Inoculants are specie specific**
 - Clover is different than vetch, Vetch is different than Lupine, etc.
- **“VNS”-Variety not stated**
 - Does not mean its bad seed
 - May or may not perform the same from one year to the next
 - May or may not perform the same from one dealer to the next
 - Reliability of performance is in question
- **Premixes**
 - Reduces need to weigh and mix seed yourself
 - Be sure that all of the components in are well suited for your region and with each other
 - If everything checks out, they can be a time saver.

Factors that affect mixture designs

- Include diversity by adding functional groups
- Maturity
- Growth forms and habit
- Soil fertility, Planting date and weather
- Planting equipment and methods
- Seeding rate
- Cost \$\$

Mixes – Functional Groups

Cover Crop Chart

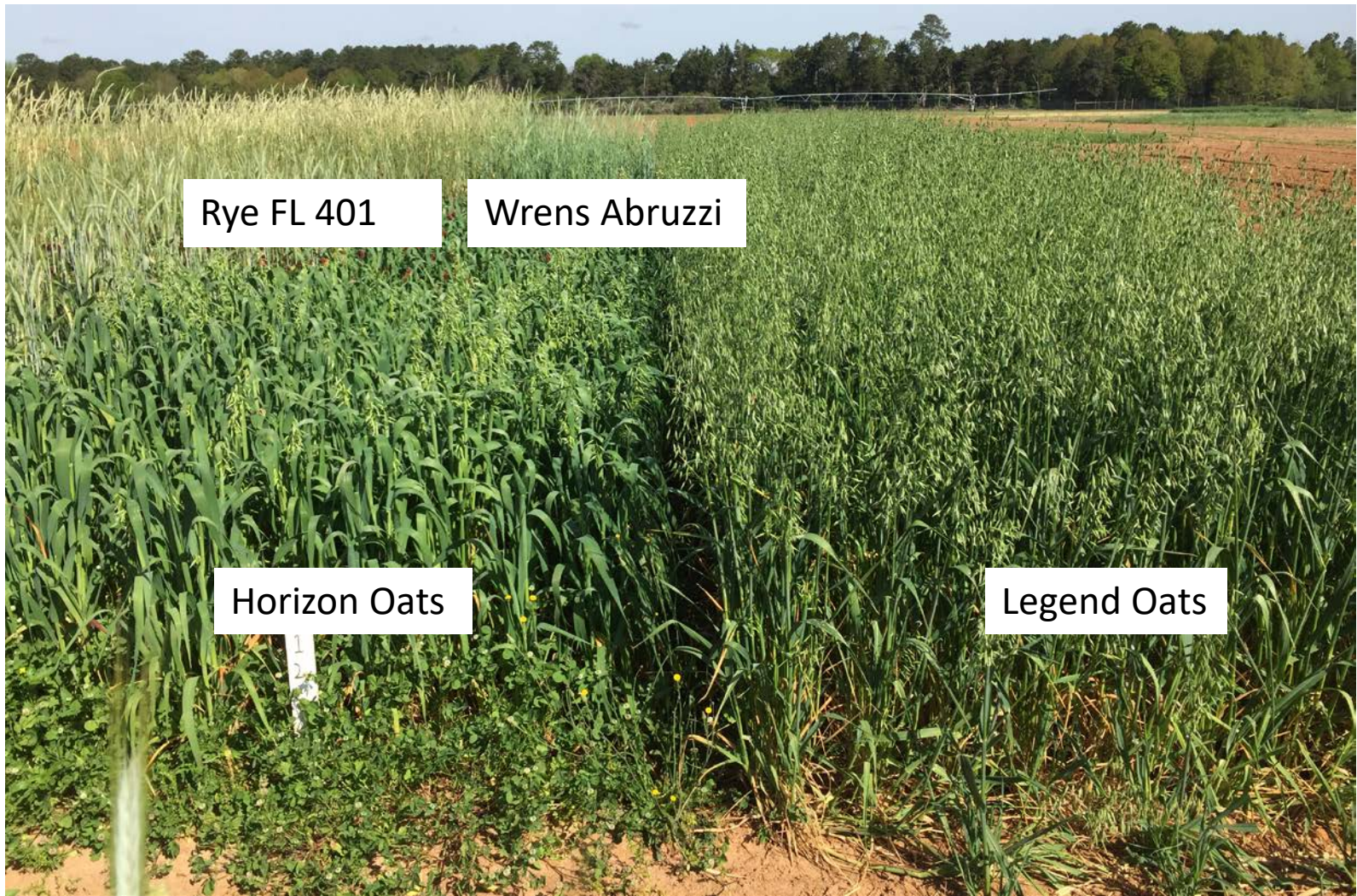
GROWTH CYCLE	PLANT ARCHITECTURE	RELATIVE WATER USE
A = Annual	☿ = Upright	● = Low
B = Biennial	* = Upright-Spreading	●● = Medium
P = Perennial	≡ = Prostrate	●●● = High

---COOL---			---						---WARM---			
--GRASS--			---BROADLEAF---						--GRASS--			
A ANNUAL FESCUE										A BROWNTOP MILLET		
A BARLEY										A AMARANTH	A FOXTAIL MILLET	
			----- LEGUME -----									
A OAT	A/B CAMELINA	A/P MUSTARD	A BALANSA CLOVER	A CHICKPEA	A/P MEDIC	A COWPEA	A CLUSTER BEAN	A BUCKWHEAT	A PEARL MILLET			
A SPELT	A PHACELIA	A/B CANOLA	A BERSEEM CLOVER	A PEA	A LUPIN	A/P LABLAB	A/P JACK BEAN	A QUINOA	A PROSO MILLET			
A WHEAT	A FLAX	A RADISH	A CRIMSON CLOVER	A LENTIL	A FABA BEAN	A/P FENUGREEK	A VELVET BEAN	P CHICORY	A GRAIN SORGHUM			
A CEREAL RYE	A KALE	B TURNIP	B/P RED CLOVER	A/P LESPEDEZA	A/B SWEET CLOVER	A/P PIGEONPEA	A MUNG BEAN	A CUCURBITA	A SUDAN GRASS			
A TRITICALE	A SPINACH	B BEET	P WHITE CLOVER	P BIRDSFOOT TREFOIL	P ALFALFA	A PARTRIDGE PEA	A SOYBEAN	A SAFFLOWER	A TEFF			
P SALINE TOLERANT	A/B CHARD	A/B CARROT	P KURA CLOVER	A/B VETCH	P SAINFOIN	A SUNNHEMP	A/P PEANUT	A SUNFLOWER	A CORN			



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Mixes – Maturity



Rye FL 401

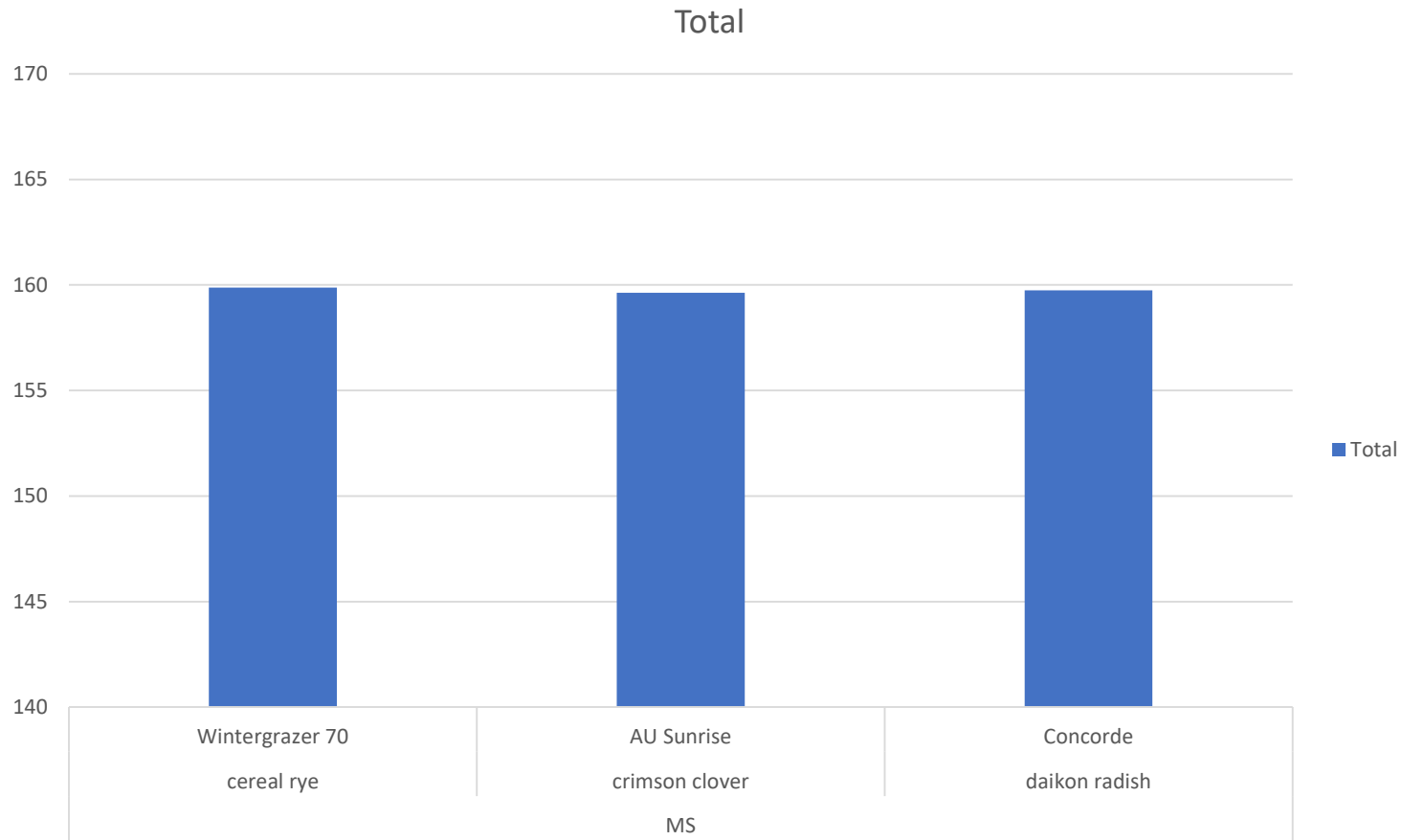
Wrens Abruzzi

Horizon Oats

Legend Oats



Mixes – Matching Maturity





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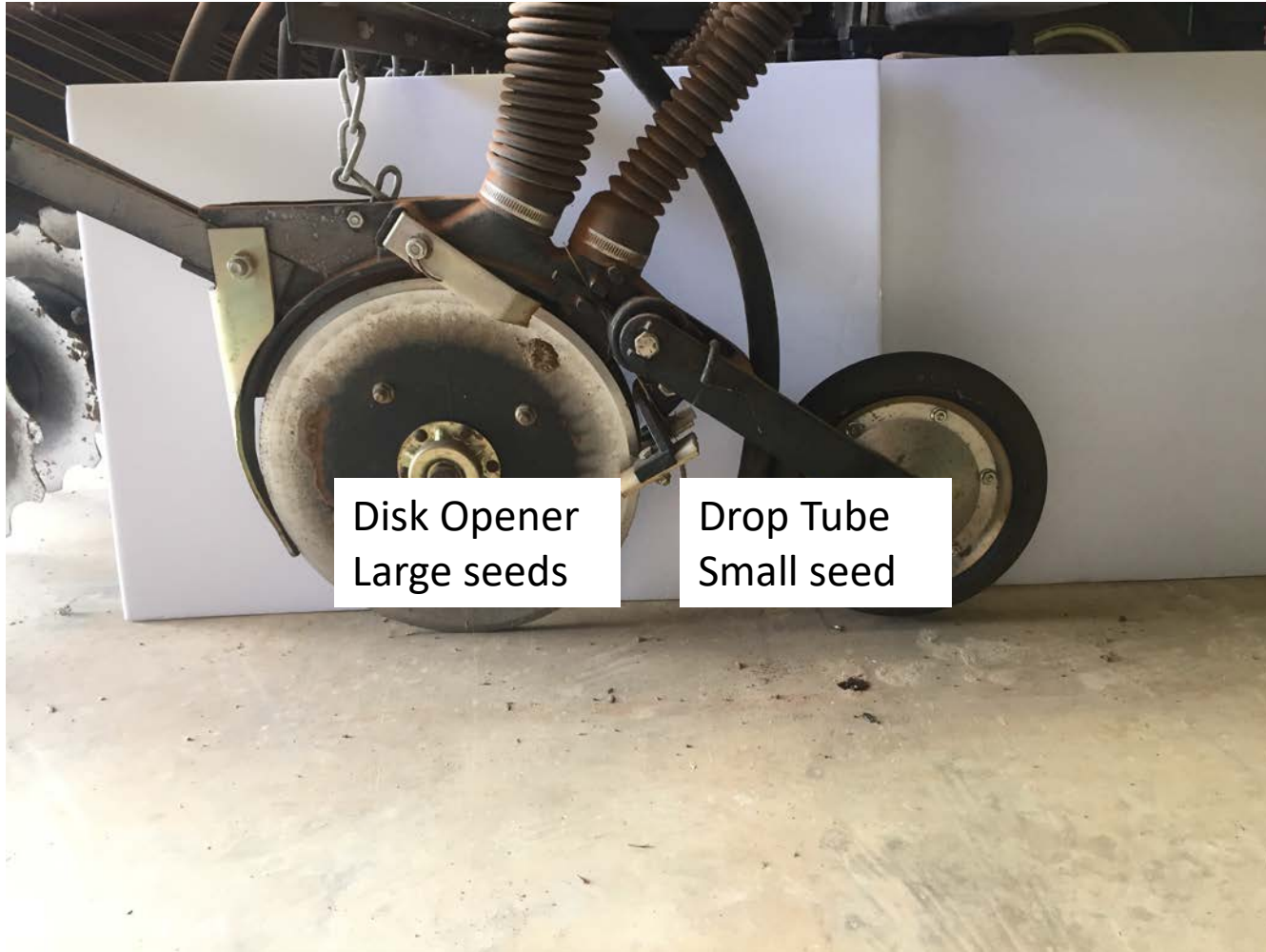
Mixes – Growth Form and Habit



Mixes – Fertility, Planting Date, Weather

- Soil Fertility – available N favors grasses
- Planting Date – range to fit all species
- Weather – plan and manage for ?normal?

Mixes – Seeding Dates, Rates, Methods, and Cost



Cover Crop Options Decision time



- There are many different options available to use as a cover crop
- Your Goals for the cover crop should drive the selection process
- Consider **ALL** of the variety/species differences and position the cover crops to promote that goal
- Use proven, well-performing, adapted varieties for the Southeast



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