

**TILTH AGRONOMY**  
Growth Begins Here.

# An Agronomic Look at Low Lignin Crops.

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## 2 Company Introduction



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## 3 Company Introduction

- 6 Full time Agronomists, 4 Associate Agronomists
- Work in approx. 18 counties
- 350 Farm Clientele
- 250,000 Acres
- Consult mainly in Eastern WI
- Write NMP's, CNMP's, Crop Scout, GPS Soil Sample, Nutrient and Pesticide Recommendations, Precision Ag Dept.

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### Outline

- BMR Corn
  - Seed Selection
  - Planting Considerations
  - In Season Management
  - Harvest Management
  - Yield Comparisons
  - Odds n Ends
- Low Lignin Alfalfa
  - Seed Selection
  - Planting, In Season
  - Harvest Issues
  - Quality Comparisons

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### Management Strategies for BMR Corn

- Seed Selection
- Planting Considerations
- In Season Management
- Harvest Management
- Yield Comparisons
- Odds n Ends

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### BMR Corn- Seed Selection

- Two Companies- Sell BMR
- Maturity
- Traits
- Agronomic Characteristics
- Comparison with Conventional Silage (Non BMR)

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### BMR Corn- Seed Selection

- Companies
- Seed industry more about relationships than any other part of agronomy
- Mycogen- Old hat to the BMR market
- Pioneer- New kid on the block
- Other companies that have limited selection of BMR

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### BMR Corn- Seed Selection

- Maturity
- Select a variety that fits your farm management
  - Day length
  - BMR only farm, Mix
  - Chopping order
- Limited selection (number of varieties)
- Mycogen- 90 day- 116 day
  - About 3 varieties every 5 days of maturity group
- Pioneer- 102-114
  - 5 varieties total

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### BMR Corn- Seed Selection

- Traits
- Pioneer- AMX and XR(HXX)
  - AMX- 2 Above (YGCB, HX1), 1 Below HXRW, RR, LL
  - XR (HXX)- 1 Above HX1, 1 Below HXRW, RR, LL
- Mycogen- SS, HXX, RR, Conventional, Some RA
  - SS- 2 Above YGCB, HX1, 2 Below YGRW, HXRW, RR, LL
  - RA- Refuge in a bag
- Herculex does have some activity on Western Bean Cutworm- Sandy Soils

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### BMR Corn- Seed Selection

- Agronomic Characteristics
- Emergence
  - No- till, Corn on Corn, Early planting
- Early Vigor
  - Disease resistance, Cold wet soil
- Drought Tolerance
- Root Strength
- Stalk Strength
- Plant Height
- Take with a grain of salt

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### BMR Corn- Seed Selection

- Comparison with Conventional Silage (Non BMR)
- BMR varieties tend to hold moisture longer than Conventional ones
- How to compare with those conventional hybrids
  - Good rule of thumb is BMR varieties are 5 days maturity more than Conventional ones - I.E. - 100 day BMR = 95 day conventional

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### BMR Corn- Planting Decisions

- Planting Populations
- Tillage Type
- Field Selection
- Crop Rotation
- Straight or Comingle

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### BMR Corn- Planting Decisions

- Planting Populations
- Keep population consistent- No real benefit to VRT planting
- Cannot handle high populations
  - As compared to conventional 36,000-40,000
- Low populations give up to much yield
- Target approx. 30,000-32,000 seeds/acre

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### BMR Corn- Planting Decisions

- Tillage Type
- Conventional Tillage is best case scenario
- Can make No- till work
  - Watch Emergence and Early vigor Characteristics
- May consider planting later when No-till planting

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### BMR Corn- Planting Decisions

- Field Selection
- Drainage
  - Field Tile
- Soil Type
  - Well Drained Silt loam
- Fertility
  - Fields Close to farm- Higher Fertility?
  - Manured
  - Potash
  - Push the N
    - Sidetress N

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### BMR Corn- Planting Decisions

- Crop Rotations Considerations
- 1<sup>st</sup> year corn the best
- Crop scout for Disease and insects if Corn on Corn
- After alfalfa watch for Black Cutworm- Insect Traits have poor activity
- Good weed control very important

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### BMR Corn- Planting Decisions

- Co Mingle- Planting 1/2 and 1/2 BMR and Conventional in Same field
  - Extra yield
  - Good Quality
  - BMR competitive advantage
  - Bunker Space
  - 2 and 2
  - Make sure to match up BMR Maturity with Conventional Maturity

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### BMR Corn- In Season Management

- Side dress Nitrogen
  - Type doesn't matter, Rate does
- Fungicide V5-7, VT
  - V5-7 is convenient if 2 pass herbicide application is made with Roundup
  - VT applications more important than V5-7, if only one application is done
  - Coverage, Coverage, Coverage- Ground rig better than plane

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### BMR Corn- In Season Management

- Fungicide application at VT
  - Most applications are done by plane, Speed, Less Crop damage, Easier
  - Several different products- Priaxor, Stratego Yld, Headline AMP
  - Ballpark cost of Plane and Fungicide is \$36/a
  - If spoken for early in the season (Feb, March) usually Farmer gets a rebate from chem company
- Keep any and all stresses out of crop
  - Seems obvious but more important than conventional corn
  - Weed control

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### BMR Corn- Harvest Management

- BMR corn will hold on to moisture longer than conventional corn
- Can use this corn to lengthen harvest window
- If comingled test moisture on both hybrids
- Standability can be an issue, but very flexible

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### BMR Corn- Yield Comparison

- BMR corn will yield less than Conventional Corn- Approximately 10%
- 1<sup>st</sup> year corn fields on Alfalfa- Can yield upward of 28 ton as fed
- Co Minged varieties will yield more than straight BMR
  - Have seen 2 ton DM increase
- Weighed Fungicide trials- BMR vs. Untreated- 2-3 ton as fed basis increase in yield
  - Not so much yield gain, but how much can you lose due to disease pressure
  - NCLB- Northern Corn Leaf Blight
  - Fast dry down

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### Odds and Ends

- Mycogen (BM3) claims 8%-15% NDFD advantage over Pioneer (BM1)
- Have had nutritionist tell me both ways
- Mycogen coming out with new BMR hybrid focusing on better Starch digestibility
- NEW Consultants Silage plots- Replicated, multi locations
- BMR vs. Conventional
  - NDFD 2016- 8.5 pt adv BMR, 2017- 9.3 pt adv BMR
  - DM 2016- 0.94 tons adv Conv., 2017- 1.2 tons adv Conv.
  - Starch 2016- 3 pt adv Conv., 2017- 5 pt adv Conv.

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### Odds and Ends

- Mycogen vs. Pioneer
  - NDFD- 3.3 pt adv Mycogen
  - DM- 0.4 ton adv Pioneer
  - Starch- 3.4 pt adv Pioneer
- Have noticed in the field Pioneer having better agronomics and higher yields, with Mycogen seeming to have better digestibility.

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### Management Strategies for Low Lignin Alfalfa

- Low Lignin Alfalfa
  - Seed Selection
  - Planting, In Season
  - Harvest Issues
  - Quality Comparisons

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### Low Lignin Alfalfa- Seed Selection

- HarvXtra
  - True Low Lignin Trait
- Hi-Gest
  - Conventional Plant breeding
- Coated vs. Un Coated
  - Forage Genetics 34% Coating- Fungicide, MicroNutrient, Growth Regulator, Rhizobium
  - Non Coated (IE Pioneer)
  - is it all marketing????????? New Seedling stands very similar

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### Low Lignin Alfalfa- Seed Selection

- Same characteristics as Conventional Alfalfa
  - Fall Dormancy
  - Winterhardiness
  - Phytophthora and Aphanomyces ratings
  - Roundup Ready comes along with the ride
- Cost- Sticker Shock
  - Rough cost per bag \$500
  - Of that \$500- \$300 is tech fee
    - \$140 is RR Tech Fee, \$160 is Low Lignin Tech Fee
  - Volume, Cash Discounts and bundling programs can bring that down

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### Low Lignin Alfalfa- Seed Selection

- How do we integrate it into our rotation
- Probably a 2-4 year process
- Do we separate Conventional alfalfa feed pile from LL
- Winter kill can accelerate the incorporation into rotation

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### Low Lignin Alfalfa- In Season Management

- Again similar to Conventional or Roundup Ready alfalfa
- Spray for weeds, with RR Technology need to kill out nulls in seeding year
- Push the Potash and Sulfur
- Scout and Spray for Weevils and Leafhoppers
- Fungicide Considerations
- Stand termination- Roundup Ready, need some type of Growth Regulator herbicide to terminate stand
  - Status/Banvel, 2,4-D
  - Don't forget the Roundup too, Dandelions and grass in field

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### Low Lignin Alfalfa- Harvest Issues

- 4 strategies a grower can take with LL alfalfa
  - 1. Higher quality feed with keeping same cutting interval as conventional (28 days)
  - 2. Push for higher yields without losing quality- longer cutting interval (35 days)
  - 3. Reduce cut get same quality and yield as normal cutting interval
  - 4. Hold quality when we get stuck in Rain event or rainy period
- Custom harvested or Farm Harvested?????

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### Low Lignin Alfalfa- Quality Comparisons

- Forage Genetics (Croplan)
- 12-20% lower AD Lignin- as compared to conventional at same stage of maturity
- Then can choose between
  - 14-18% Higher NDFD (normal cutting schedule)
  - 20% higher yield (Delayed harvest)
- Listed in Seed Guide

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### Low Lignin Alfalfa- Quality Comparisons

- On Farm forage testing
- Farm A
  - Mid July
    - 1<sup>st</sup> Cut New Seeding LL- 146 RFV
    - 2<sup>nd</sup> Cut Conventional- 138 RFV
  - Mid August
    - 2<sup>nd</sup> Cut New Seeding LL- 167 RFV
    - 3<sup>rd</sup> Cut Conventional- 151 RFV

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### Low Lignin Alfalfa- Quality Comparisons

- Farm B
  - Mid July
    - 1<sup>st</sup> Cut New Seeding LL- 166 RFV
      - Range of 3 fields 153-182
    - 2<sup>nd</sup> Cut Conventional- 164 RFV
      - Range of 4 fields 154-172

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### WHY IS ALL THIS SO IMPORTANT?



A photograph showing four children and a dog mascot. The children are smiling and looking towards the camera. The dog mascot is a yellow dog wearing a blue cap with a white 'T' on it. They are in a store with shelves of products in the background.

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### Questions?

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