

Wheat Quality in Ontario

Peter Tuinema

Ontario Wheat Producers' Marketing Board

55th Annual Soft Wheat Quality Laboratory Research
Review

March 12th, 2008

Wooster OH.



REPRESENTING ONTARIO WHEAT PRODUCERS BY PROVIDING STRATEGIC
LEADERSHIP INITIATIVES THAT PROMOTE AND IMPROVE ONTARIO WHEAT

Topics

- Introduction of who I am and my role in Ontario wheat.
- Overview of Ontario Wheat industry
 - # of producers, types of wheat, acres, yield and markets.
- Quality Management
 - Variety selection and registration system in Ontario and how it effects quality. (milling traits)
 - Managing weather related quality risks
- Questions?



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Manager Programs and Policy

- Manage the buying and selling of OWPMB wheat
- Manage Policy Development and Government Relations for OWPMB

Chair, Ontario Cereal Crops Committee

- Industry Committee that recommends varieties for registration.
- Give input to industry/government on cereal related issues



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Pigs will fly before we see \$10 wheat!!!

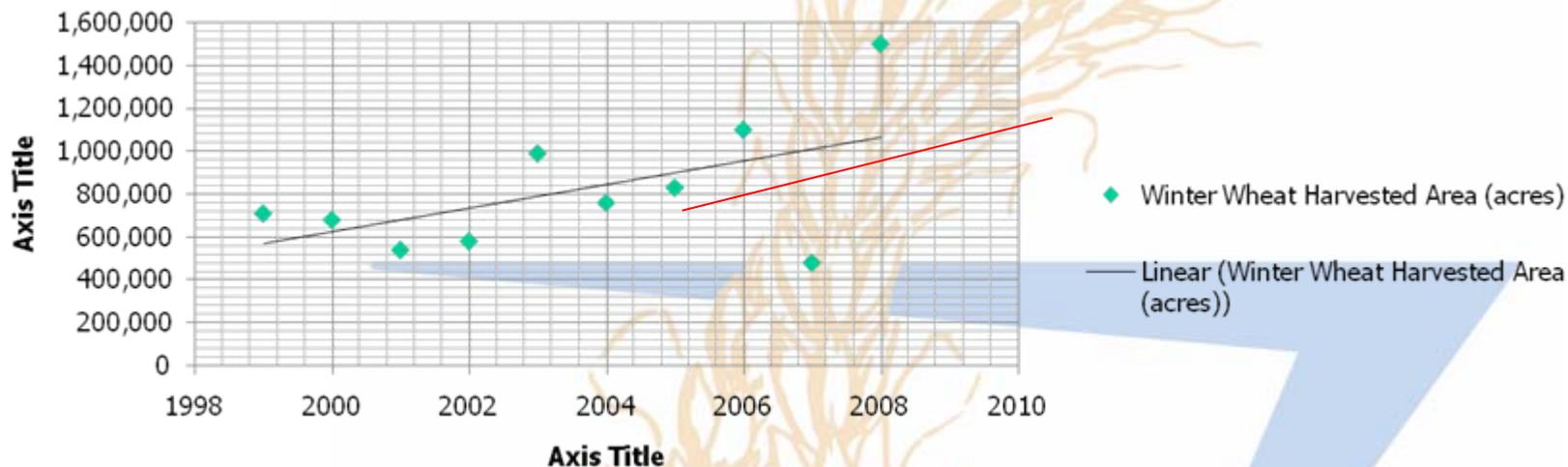


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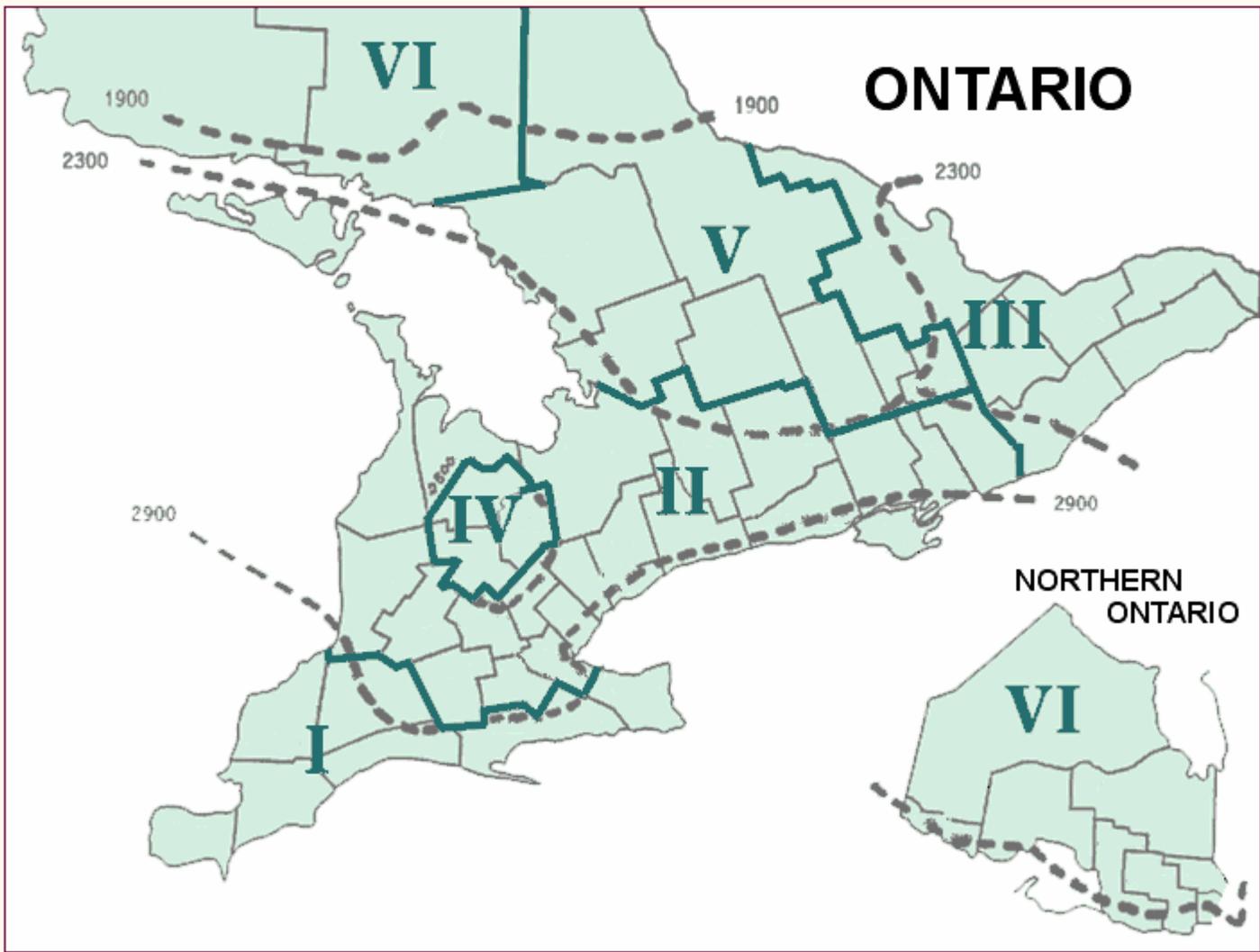
Producers are seeing value in growing wheat in Ontario



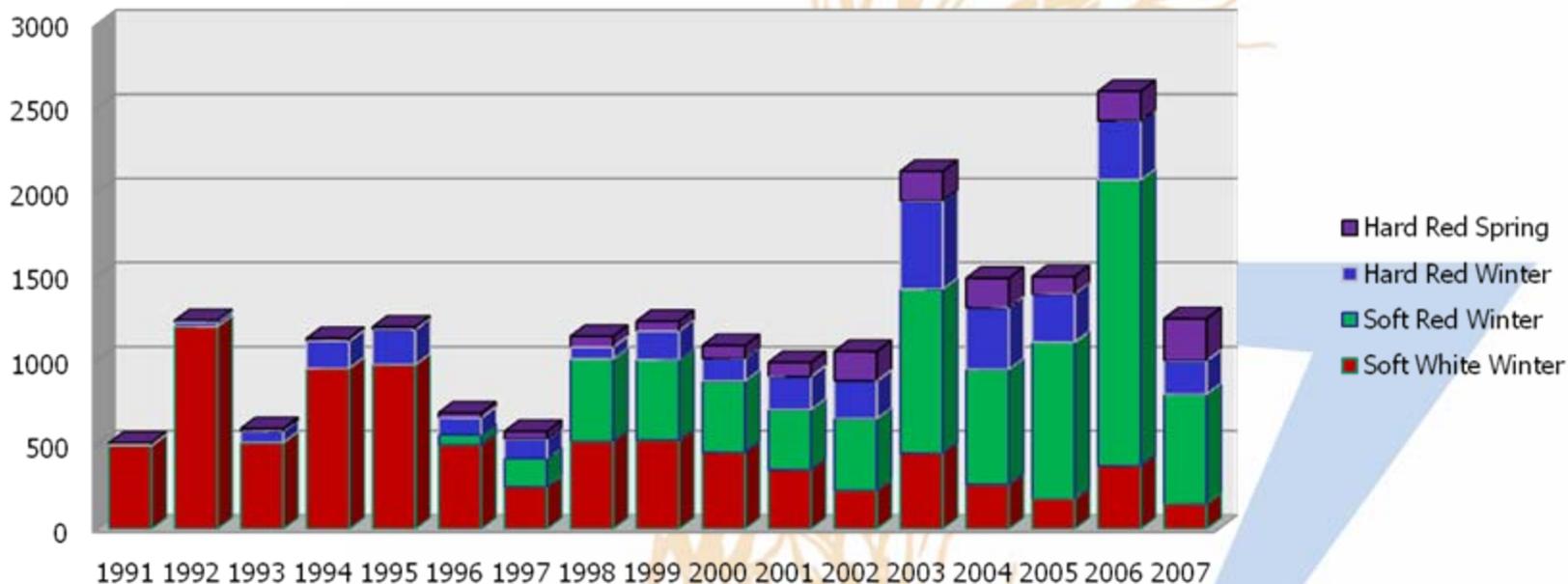
- 14,000 Ontario producers grow wheat in rotation
 - 65% SRW, 15% HRW, 10% SWW, 10% HRS
- 700,000 tonnes of wheat is used by the domestic flour, feed and seed industries
- 200,000 tonnes of wheat is exported to the nearby US



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10 Years of Diversity



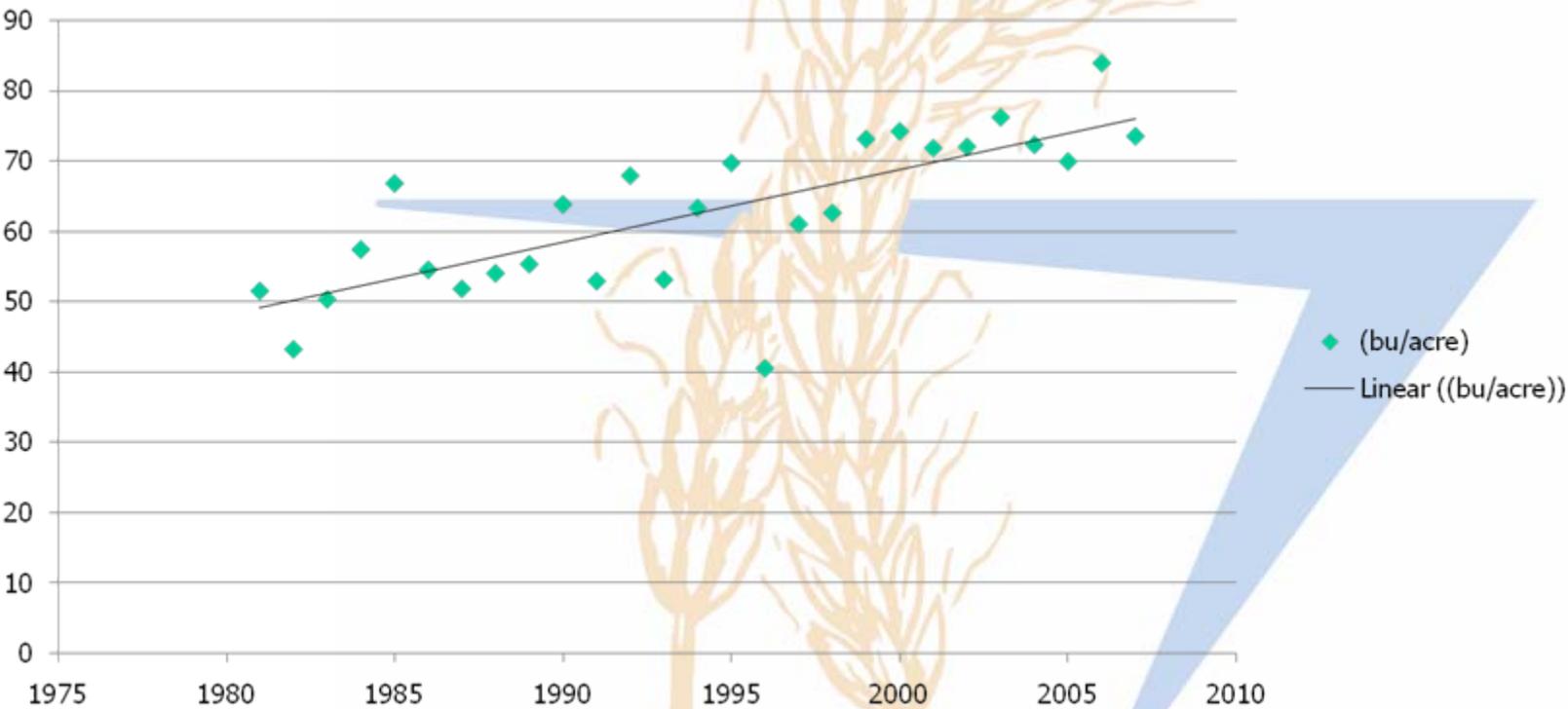
- Transition from predominantly SWW to 65% SRW has put us in a more effective export position
- Variety innovation has resulted in competitive hard wheat varieties for the domestic market

Ontario wheat was 10% of all Canadian wheat exports in 2006



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Ontario Winter Wheat Yield 1981-2007



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Markets - Ontario

- Soft White Winter
 - Cereal, cakes cookies.
- Soft Red Winter
 - Cakes, cookies, crackers
- Hard Red Winter
 - Crackers, breadings, coatings, flat breads, blends.
- Hard Red Spring
 - Flat breads, pizza, pan breads, specialty breads.



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Markets – Nearby U.S.A.

- SWW
 - Cereal, Michigan, Buffalo
- HRW
 - Toledo
- SRW
 - Toledo



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Overseas Markets

- SRW
 - SRW is the major wheat exported from Ontario.
 - Competitive with U.S. Great Lakes and Gulf of Mexico for sales east of North America



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Quality Management

- **Variety selection and registration system in Ontario**
 - All varieties must be recommended for registration by the Ontario Cereal Crop Committee. (OCCC)
 - OCCC has representation from entire industry.
 - Criteria for registration includes, quality, agronomic and disease factors.



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Quality Management

- **Variety selection and registration system in Ontario (cont'd)**
 - Disease factors include some resistance to fusarium.
 - Quality factors are based on a wide range of functionality traits.
 - Cultivars are compared to a check variety. Must have similar qualities or can not be registered.



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I. KERNEL

CULTIVAR	- name of analysed cultivar
TEST WEIGHT	- kg/hl ± 2 grams/hl
KERNEL WEIGHT	- g/1000 kernels (SKCS method)
KERNEL HARDNESS	- SKCS method
GRAIN PROTEIN	- percent of protein on 13.5% ($\pm 0.2\%$) moisture basis; N x 5.7 ; AACC method 46-30
FALLING NUMBER	- falling number in sec, ± 25 sec ; AACC method 56-81B
GRAIN ASH	- percent of ash ($\pm 0.03\%$)

II. FLOUR

FLOUR YIELD (I)	- yield percent ($\pm 1.5\%$) obtained from Buhler-mag mill model MLU-202; on constant input basis
FLOUR YIELD (A)	- yield percent ($\pm 1.5\%$) obtained from Buhler-mag mill model MLU-202; on constant input basis and 0.50% constant ash
FLOUR PROTEIN	- percent of protein ($\pm 0.2\%$) on 14.0% moisture basis; N x 5.7; AACC method 46-30
PROTEIN DIFFER	- difference between grain and flour protein content
FLOUR ASH	- percent of ash ($\pm 0.02\%$)
COOKIE SPREAD	- average width in cm (± 0.8 cm); AACC method 10-52
COOKIE W/T	- average ratio of cookie width to thickness (± 0.08)
FARIN ABSN	- farinograph absorption of water (± 0.7 cc). Amount of water which must be added to a flour of 14.0% moisture to give required consistency
FARIN PK TM	- farinograph peak time. Development time in minutes
FARIN STABIL	- farinograph stability of dough in minutes
FARIN MTI	- farinograph mixing tolerance index in B.U.
FARIN TMD	- farinograph twenty-minute drop in B.U.
LOAF VOLUME	- loaf volume in cm ³ (± 30 cc) - Remix method (GRL)
BAKING INDEX	- (Loaf Volume)/(Flour Protein)
ALV PEAK	- maximum alveograph ordinates in mm x 1.1
ALV LENGTH	- alveograph abscissa at rupture (length) in mm
ALV ENERGY	- deformation energy of dough in 10 ³ ergs
RVA PEAK_V	- viscosity at peak time (Rapid Visco Analyser; std. method #1)
RVA FINAL_V	- viscosity at the end of pasting curve (Rapid Visco Analyser; std. method #1)
STARCH DAMAGE	- starch damage as a percentage of flour weight ($\pm 0.05\%$) (McCleary method - AACC method 76-31)



Quality Management

Managing weather related quality risks

- Sprouting, mildew, etc.
 - Spreading the harvest load with classes and maturity.
 - Harvesting damp/early. (\$3 / Bus. versus \$10 / bus.)



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Quality Management

Managing weather related quality risks

- Fusarium damage
 - Variety selection
 - Spreading the risk with classes and maturity
 - Using resistant varieties



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Table 5 - Ontario Winter Wheat Varietal Characteristics Based on Data from Across Ontario 2007, OCCC, August 2007

Variety	Test Weight (kg/hl)	Thousand Kernel Weight (g)	Winter Survival (%)	Lodging (0-9) ¹	Height (cm)	Heading Date ² (JD)	Powdery Mildew (0-9) ¹	Leaf Rust (0-9) ¹	Leaf Septoria (0-9) ¹	Barley Yellow Dwarf Virus (0-9) ¹	Maturity Date (JD)	Fusarium Rating ⁴	Years (fusarium Data)
Superior	74.4	39.4	91	2.0	90	157	0.9	2.2	2.3	1.3	192	S	6
AC Mackinnon	75.2	37.0	95	1.8	88	155	0.8	2.7	2.3	1.0	191	HS	6
AC Mountain	73.9	39.1	94	2.0	93	156	1.4	2.3	2.8	1.2	192	S	6
Ashley	74.3	42.2	92	1.3	89	158	0.3	1.5	2.2	0.4	193	MS	4
25W41	76.9	35.1	92	1.0	73	155	2.4	1.0	1.6	0.7	192	S	4
D8006W	75.5	43.3	94	1.3	81	154	0.7	2.3	2.1	0.9	192	HS	4
Ava	75.7	36.2	89	1.8	88	157	1.8	1.7	2.5	1.5	193	MR	2
E1009W	76.9	38.0	89	1.5	75	156	0.9	2.5	2.4	1.1	192	S	2
FT Action	74.0	40.1	89	1.5	94	158	0.9	1.6	2.5	1.4	193	MR	1
Wisdom	76.2	36.9	94	2.0	83	154	1.8	1.7	2.8	1.0	192	MR	6
Warwick	75.8	39.4	92	2.5	84	154	1.0	0.4	2.5	1.2	192	MS	6
Vienna	75.6	32.4	91	2.3	83	155	0.5	5.3	3.2	2.0	192	MR	6
FT Wonder	77.1	41.3	94	2.5	83	154	1.6	4.2	3.2	1.3	191	MR	6
25R47	75.1	37.2	94	1.5	73	154	1.6	0.7	1.9	0.6	192	S	5

Quality Management

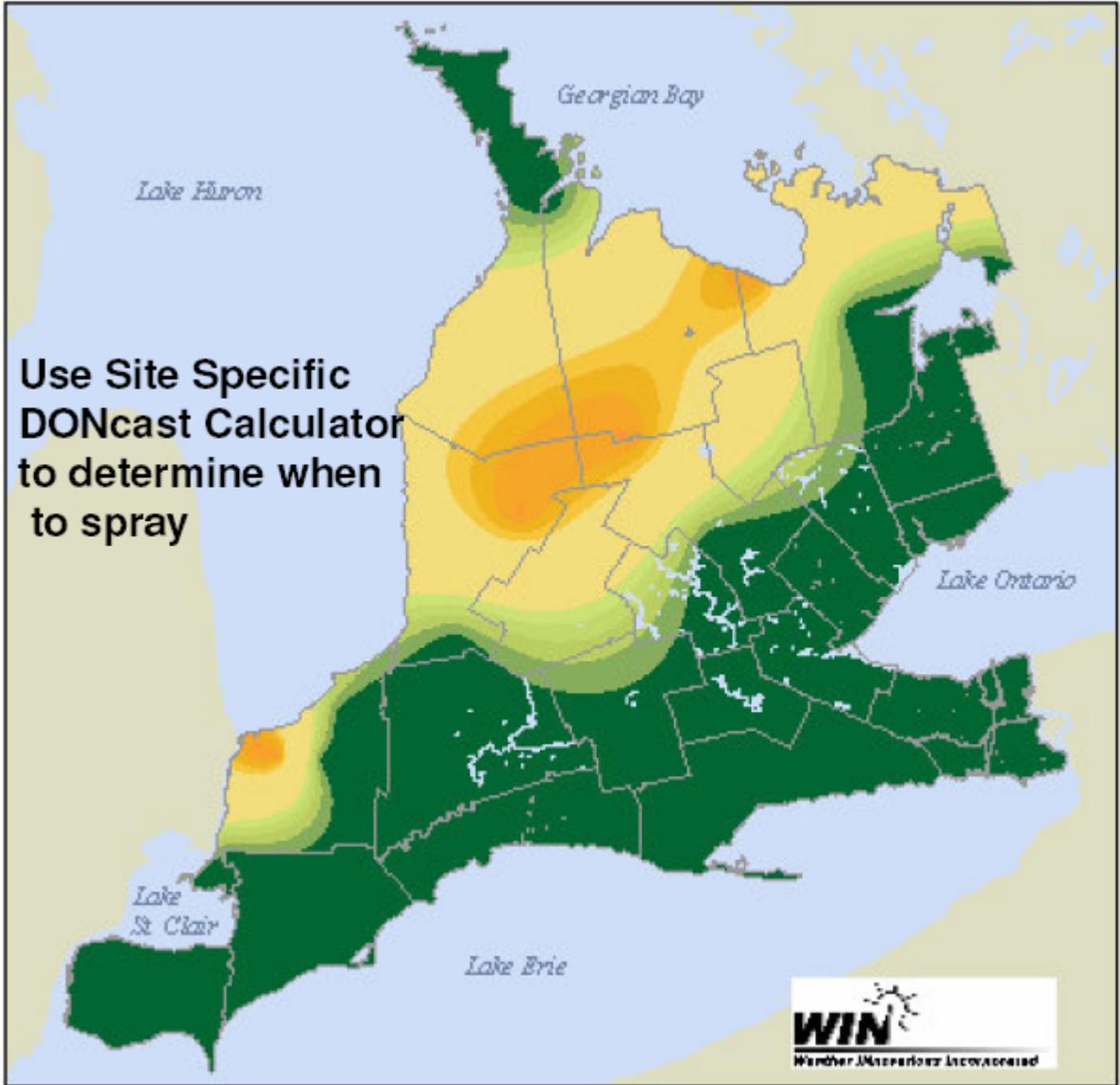
Managing weather related quality risks

- Fusarium damage
 - Use of fungicides along with weather models
 - Folicur, Proline.



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REGIONAL RISK MAP



Use Site Specific
DONcast Calculator
to determine when
to spray

DON
Risk
Levels



High



Moderate



Low

Probability
Thresholds





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Wheat Field 1

Field Name: (Name of your choice)

Latitude of Field: (ie. 42.44)

Longitude of Field: (ie. -82.234)

If you don't know your coordinates, click here.

Wheat Variety:

Estimated Heading Date:

Tillage Before This Wheat Crop:

Crop Grown in 2006:

Tillage Before 2006 Crop:

Crop Grown in 2005:

Wheat Field 2

Field Name: (Name of your choice)

Latitude of Field: (ie. 42.44)

Longitude of Field: (ie. -82.234)

If you don't know your coordinates, click here.

Wheat Variety:

Estimated Heading Date:

Tillage Before This Wheat Crop:

Crop Grown in 2006:

Tillage Before 2006 Crop:

Crop Grown in 2005:

Wheat Field 3

Field Name: (Name of your choice)

Latitude of Field: (ie. 42.44)

Longitude of Field: (ie. -82.234)

If you don't know your coordinates, click here.

Wheat Variety:

Estimated Heading Date:

Tillage Before This Wheat Crop:

Crop Grown in 2006:

Tillage Before 2006 Crop:

Crop Grown in 2005:

(Note: The 'Select Crop' dropdown menu is open, showing options: Barley, Corn, Dry Field Beans, Flax, Oil Seed Rape, Soybeans, Sugar Beets, Vegetable Crops, Wheat, Other)

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Wheat Field 1

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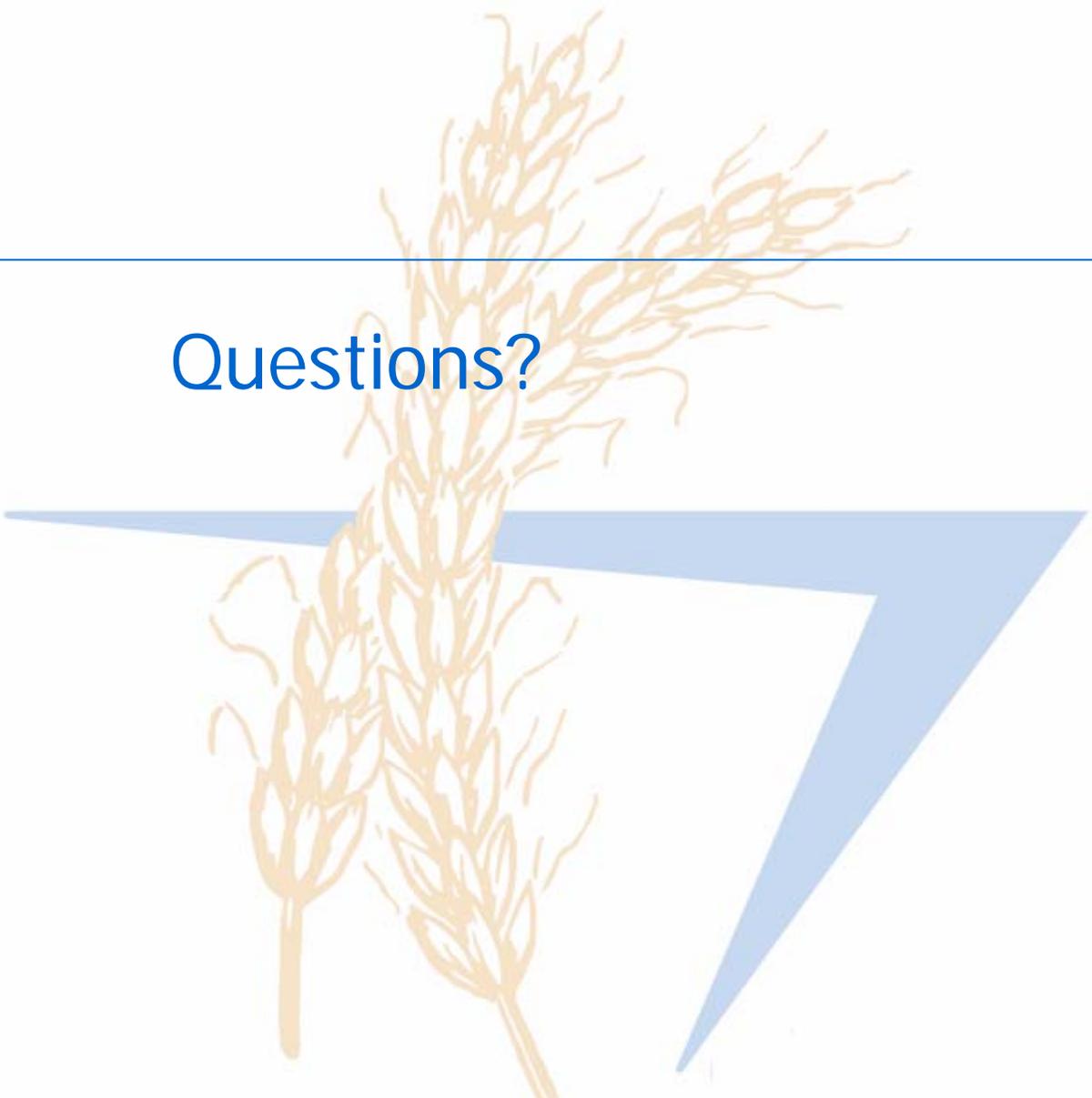
Crop Grown in 2006:

Tillage Before 2006 Crop:

Crop Grown in 2005:

Wheat Field 2





Questions?



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