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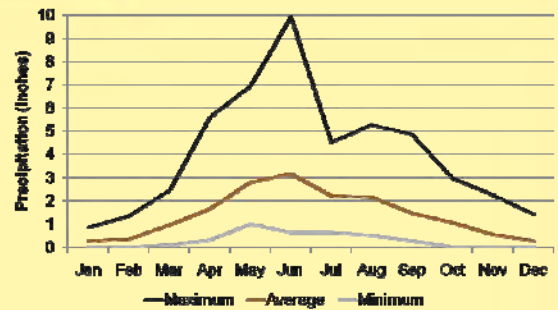
The Importance of Winter Wheat to Cropping Systems

Drew Lyon, Extension Dryland Cropping Systems Specialist, Scottsbluff
Randy Pryor, Extension Educator, Saline

Nebraska
Lincoln EXTENSION



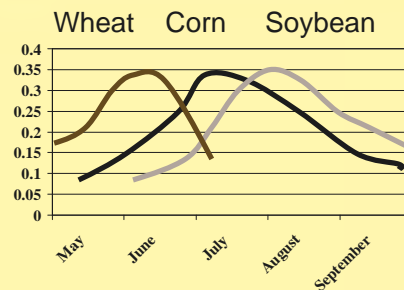
Monthly Precipitation Sidney; 1980-2009

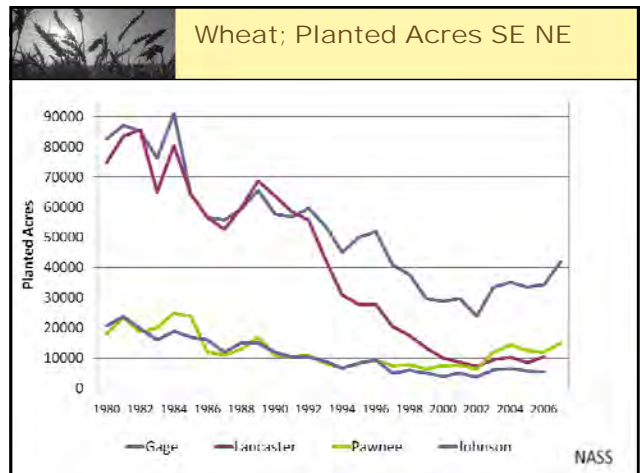
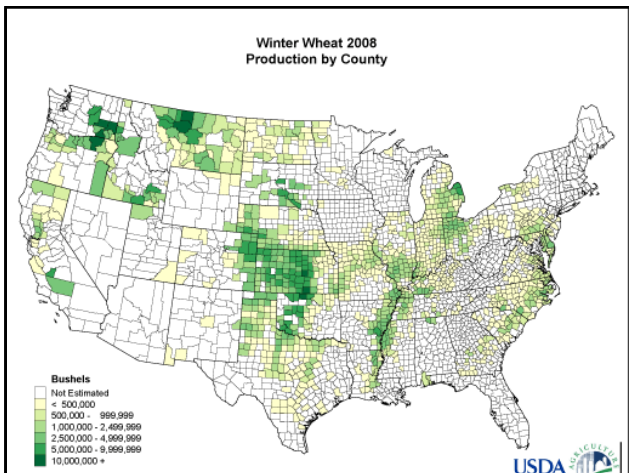
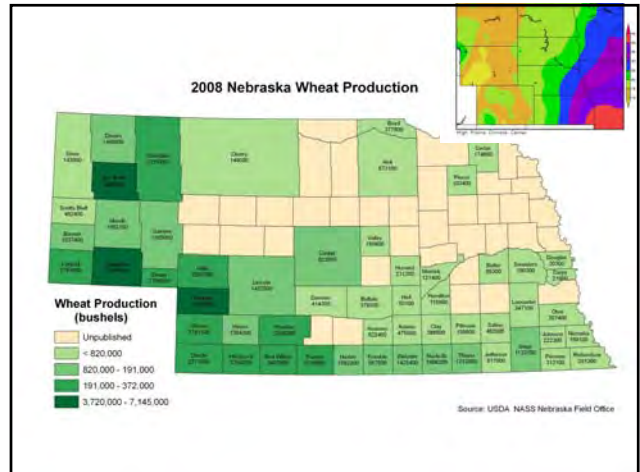
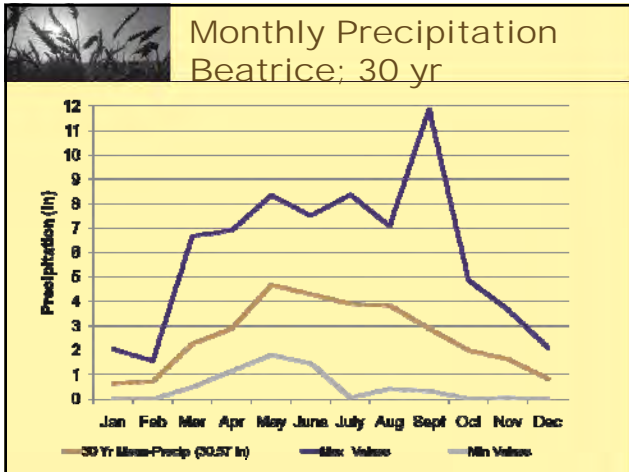


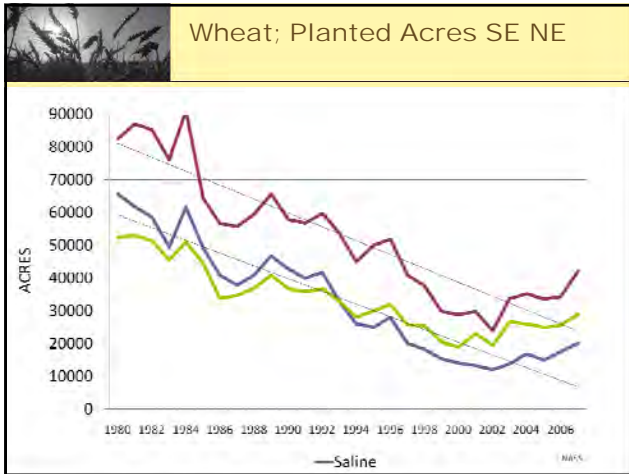
Wheat's Origin

- Wheat is grown on more land area worldwide than any other crop
- Earliest remains crop found in Syria, Jordan and Turkey. Primitive relatives found in Eastern Iraq excavations date back 9,000 years
- Wheat grown in SE Nebraska today we can thank immigrants who brought the "Grand Daddy" of U.S. winter wheat
Turkey Red

Growing Season ET



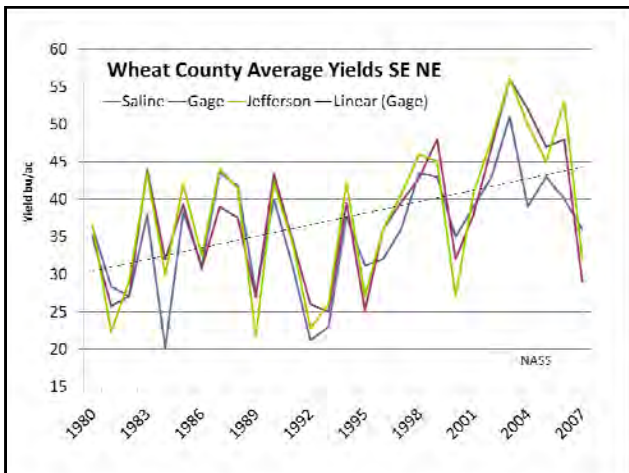




Adaptive Development

Wheat has:

- Morphological plasticity (Many ways to make grain)
 - Tiller number
 - Head size
 - Grain size & weight



Wheat Adds Diversity

Spreads work load & production risk

Reduced Dryland Production Risk



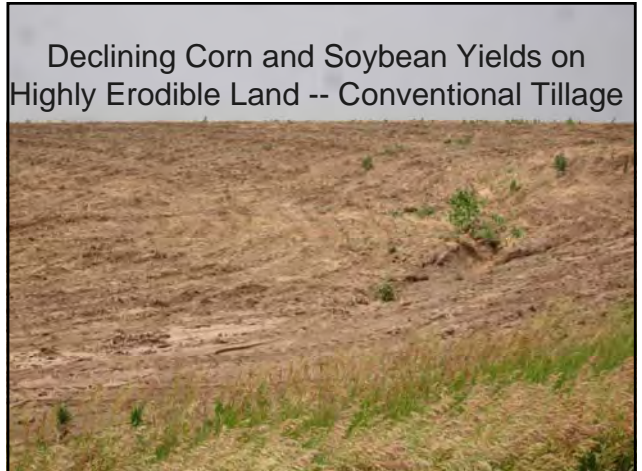
Soil & Yield Capabilities



Weather Risk



Declining Corn and Soybean Yields on Highly Erodible Land -- Conventional Tillage



NT Corn into Wheat Stubble



Profitable Dryland Crop Rotations SE Nebraska

The following were assumptions used to compare crop rotation economics

- 2009 University of NE Crop Budgets cropwatch.unl.edu
- Harvest Delivery price Farmers Co-op Jan. 7th
- Long term average yields from 2,894 farmer fields 1994 to 2007; Crop Rotation Study <http://gage.unl.edu/multimediapresentations>

Excellent Certified Seed Producers SE NE



2 Year Crop Rotation

	Cost (\$/ac)	Yield (bu/ac)	Price (\$/bu)	Net (\$/ac)
NT Corn	\$278	108	\$3.92	\$147
NT Beans	\$120	39	\$9.19	<u>\$234</u>
				\$190


Rotation per 1,000 acres = 500 corn/500 soybeans

3 Year Crop Rotation

	<u>Cost</u> (\$/ac)	<u>Yield</u> (bu/ac)	<u>Price</u> (\$/bu)	<u>Net</u> (\$/ac)
NT Corn	\$278	130	\$3.92	\$232
NT Beans	\$120	39	\$9.19	\$234
NT Wheat	\$193	53	\$5.03	<u>\$74</u>
				\$180

Rotation per 1,000 acres = 334 corn, 333 soybean, 333 wheat
(Reduced production risk on 100% corn acres)

Double & Relay Cropping



Requires:

1. Adequate time for production of second crop
2. Adequate water to produce two crops

5 Year Crop Rotation

	<u>Cost</u> (\$/ac)	<u>Yield</u> (bu/ac)	<u>Price</u> (\$/bu)	<u>Net</u> (\$/ac)
NTCorn	\$278	108	\$3.92	\$145
NTBeans	\$120	39	\$9.19	\$234
NTWheat	\$193	53	\$5.03	\$74
NTCorn	\$278	130	\$3.92	\$232
NTBeans	\$120	39	\$9.19	<u>234</u>
				\$184


Rotation per 1,000 acres = 400 corn, 400 soybean, 200 wheat
(Reduced production risk on 1/2 corn acres)

Winter Wheat vs. Warm Season Weeds


Winter wheat is very competitive with weeds that emerge in the spring



Extend Crop Rotations



Rhizoctonia Root Rot



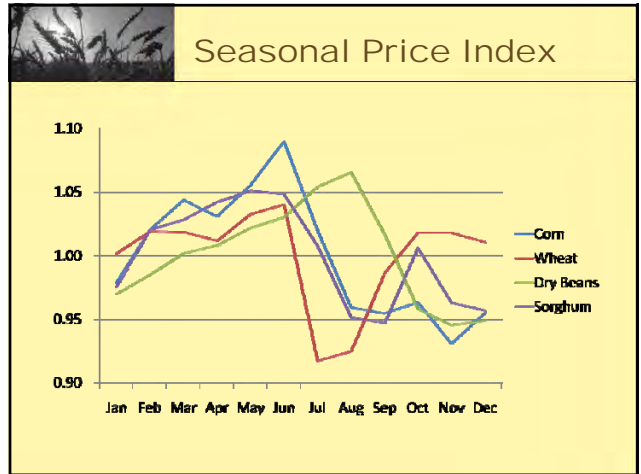
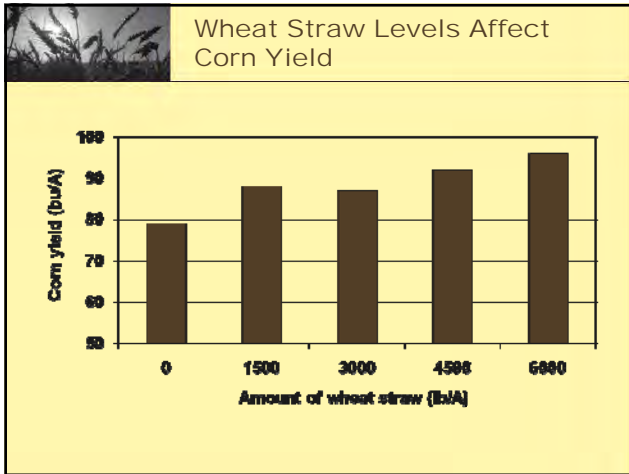
Sugarbeet Cyst Nematodes

Cyst



Wind Erosion





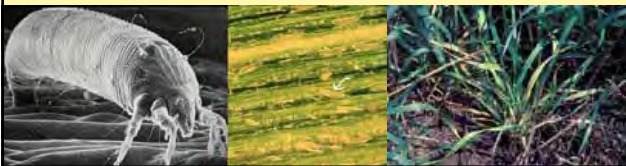
- ### Wheat Markets
- Food grain versus feed grain
 - Price premium in some years
 - Quality (protein) premium not seen in feed grains
 - Seasonal pricing is independent of the feed grains (in most years)
 - All have spring run
 - Wheat gets a fall run

- ### Production Tip #1
- #### Only Use Treated Seed
- Black Point
 - Common Bunt/Stinking Smut
 - Loose Smut
 - Scab (seedling blight phase)
 - Ergot
- 
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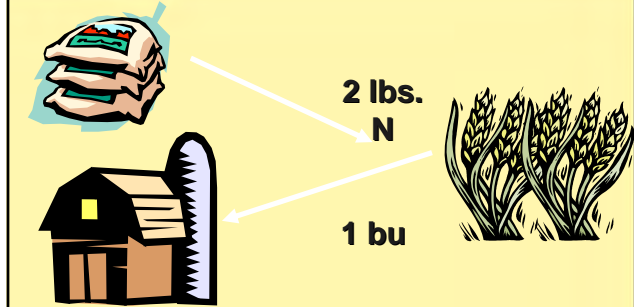
Production Tip #2

Avoid Wheat Streak Mosaic Disease
 --Use a 10 day to 2 week "Brown Out" period on any volunteer wheat

Wheat Curl mite --Vector of the Virus Major Yield Hit – 25 to 60%



Production Tip #4



2 lbs. N

1 bu

But consider N credit for soil nitrate and manure applied fields.

Production Tip #3


--Plant in late September/Early October in firm seedbed conditions. Avoid shallow plantings which lead to winter injury and root and crown rot.

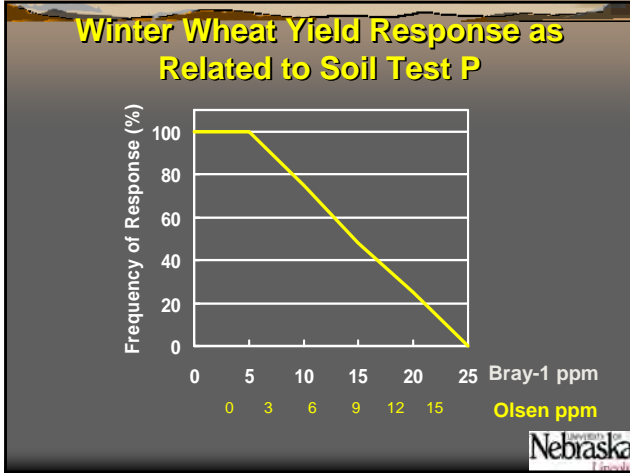
--Use starter fertilizer for a quick fall emergence along with recommended N and P to achieve top production

Nitrogen Fertilizer Recommendation for Rainfed Wheat (NebGuide G1460)

Soil Test N* (ppm)	Wheat Price (\$/bu)		Fertilizer Price (\$/lb N)	
	\$3.00	\$4.00	0.20	0.30
1	111	87	124	105
2	101	77	113	95
4	80	56	92	74
6	59	35	71	53
8	38	13	50	32
10	16	0	29	10
12	0	0	7	0

*Average at 3 feet use 3 ppm if no soil test was taken.
 For yields 70 bu/acre and above add 20 pounds extra





Production Tip #5

- Use Recommended Varieties for SE NE
- University of Nebraska Extension Wheat Variety Test Data

<http://cropwatch.unl.edu/web/varietytest/wheat>

SE Nebraska Varieties include: **Overland, Hallam, Millennium, Wahoo, PostRock, Santa Fe, Armour, and Art.**

http://soilfertility.unl.edu/... Winter Wheat Nutrient Recommendation Calculators

This spreadsheet contains calculators for the Nitrogen, Phosphorus and Potassium recommendations for winter wheat in Nebraska.

Use these calculators in conjunction with NebGuides: 002-1460-A, 002-1461-A. <http://soilfertility.unl.edu>

Enter data into grey areas. Output is bright yellow.

Field ID	Average Soil Profile Residual Nitrate-Nitrogen (ppm)	Nitrogen Price (\$/lb)	Wheat Price (\$/bu)	lbs. N/acre

Field ID	Expected Yield (bu/acre)	Phosphorus Price (\$/lb)	Wheat Price (\$/bu)	Seed P (ppm)	lbs. P ₂ O ₅ /acre
Bray P - For use in non-saline soils, pH > 7					
Olsen P - For use in alkaline soils, pH > 7					

Sample Depth (inches)	Soil Residual Nitrate-Nitrogen (ppm)
1	
2	
3	
4	
5	

To calculate a correct average, if you input two of this calculator you will need to input concentrations.

Consider Fungicide Application Tip #5

Headline Application June 2007

Saline County 2007 Millennium Wheat

Saline County Wheat Fungicide Trial 2008

Fungicide Treatment	Yield (bu/A)
Headline 6 fl oz/A	70
Check	<u>65</u>
LSD(0.05)	8

Wheat variety: Millennium
 Sprayed: May 16, 2007
 Non-ionic surfactant: added to spray mix at 0.25% v/v

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Saline County Wheat Fungicide Trial 2008

Variety 2137 Sprayed May 21, 2008 Diseases observed: Septoria Blotch and Scab	Rate fl. oz /acre	Disease severity (%) June 9	Disease severity (%) June 16	Yield bu/acre
Check	...	34.6 a	79.0 a	37.9 c
Headline + NIS	6 0.25% v/v	0.2 b	1.2 c	53.8 ab
Confidential	7	0.2 b	0.8 c	52.5 ab
Confidential	9	1.0 b	3.0 c	55.5 ab
Quilt	10.5	1.8 b	4.2 bc	50.5 ab
Quilt	14	8.2 b	15.0 b	46.1 bc
Stratego	7	2.4 b	10.8 bc	53.0 ab
Stratego	10	1.7 b	9.0 bc	49.8 ab
LSD (0.05)		9.7	11.0	10.8
Proble...		0.0001	0.0001	0.0450





Questions?



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