

# **Sunflower Seed Development**



**Burton Johnson, North Dakota State Univ., Fargo  
Russ Gesch, USDA-ARS, Morris, MN  
Jon Lambert, North Dakota State Univ., Fargo**

The objective was to determine when physiological maturity occurs during sunflower seed development.



**North Dakota State University, Fargo  
Dept. of Plant Sciences**



**USDA-ARS North Central Soil  
Conservation Research Lab, Morris, MN**



**Prosper Research Site**



**Swan Lake Research Site**



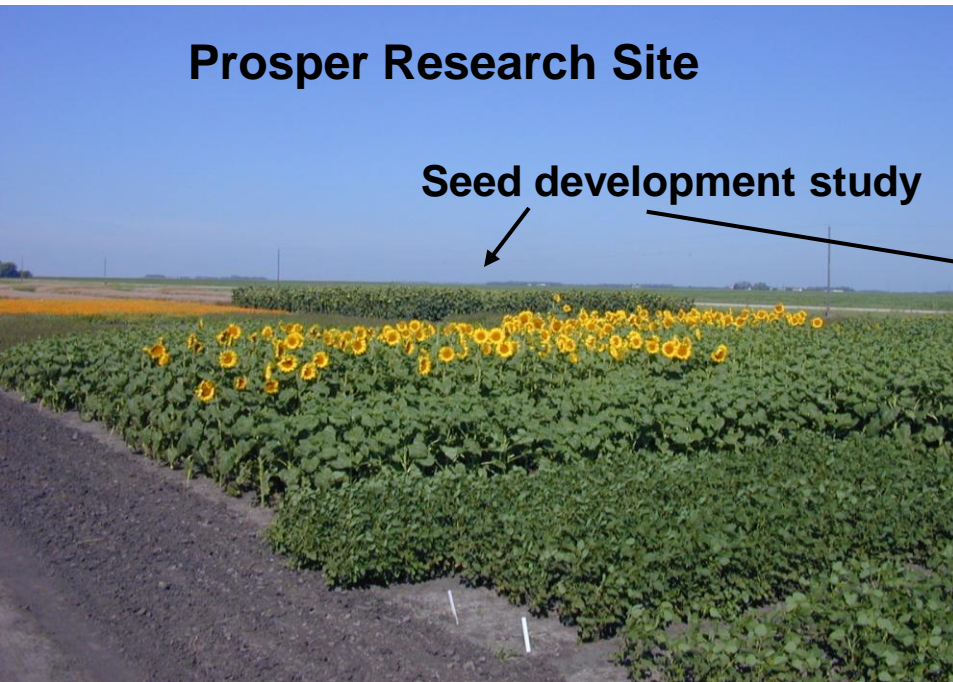
**North Dakota State University, Fargo  
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Conservation Research Lab, Morris, MN**



**Prosper Research Site**



**Seed development study**



**Swan Lake Research Site**



# Experimental Design

**RCB with 4 replicates**

**Main plot hybrid (3)**

- Mycogen 8N272
  - NuSun
- Croplan 378
  - High oleic
- Red River Commodities 2215
  - nonoilseed

**Subplot (9)**

- Harvest date

**Subsubplot (3)**

- Head position



**8N272**



**2215**



**378**



**Photos on 8 Aug 2008**

Photos on 5 Sept. 2008 Prosper



8N272

2215

378

Hybrid

Harvest date – at 3 to 5 d

Head position



Photo on 26 Sept. 2008 Prosper

Photos on 5 Sept. 2008 Prosper



8N272

2215

378

Head position  
for seed harvest

Outer 1/3

Middle 1/3

Center 1/3

Counted out 125 seeds/position/head

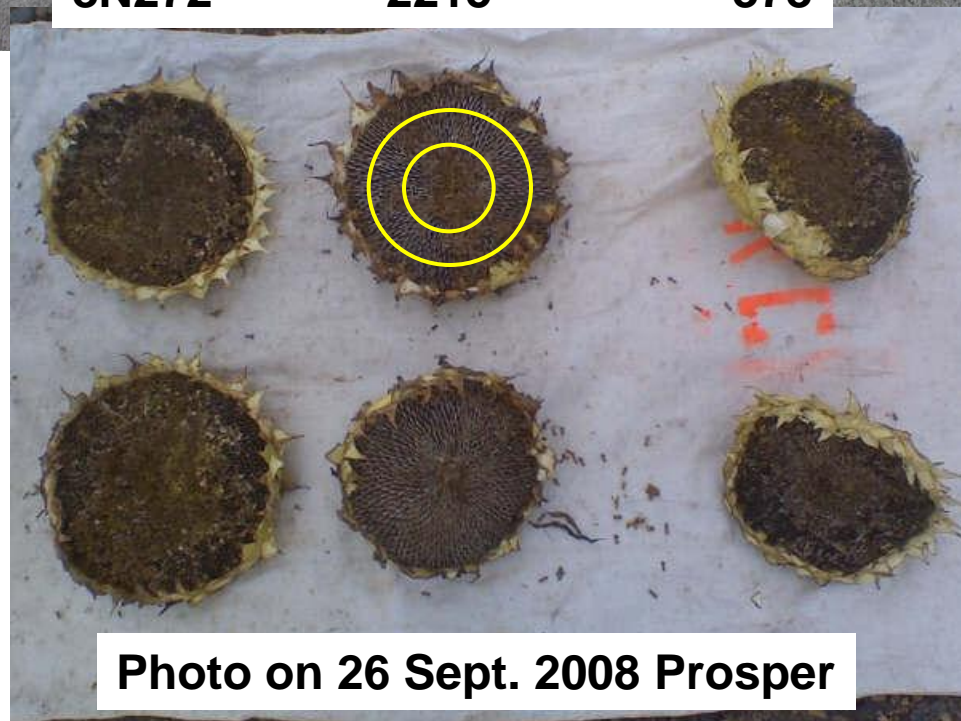


Photo on 26 Sept. 2008 Prosper



Photos on 5 Sept. 2008 Prosper



8N272

2215

378

Head position  
for seed harvest

Traits evaluated

Outer 1/3

Seed moisture ✓

Middle 1/3

Seed weight ✓

Center 1/3

Seed oil content

See oil composition

Counted out 125 seeds/position/head



Photo on 26 Sept. 2008 Prosper

**Outer head position seed moisture (% H2O) and dry weight (mg/seed) for nonoilseed hybrid 2215 at Prosper, ND, in 2008.**

**Date/Days from R5.1**

	28 Aug	05 Sept	12 Sept	17 Sept	22 Sept	26 Sept	01 Oct	06 Oct	10 Oct
	28	36	43	48	53	57	62	67	71
<b>H2O</b>	70	61	54	50	42	34	22	23	17
<b>Wt.</b>	99	121	140	140	157	155	164	162	158

**LSD (0.05) Seed moisture = 3; Seed weight = 9**

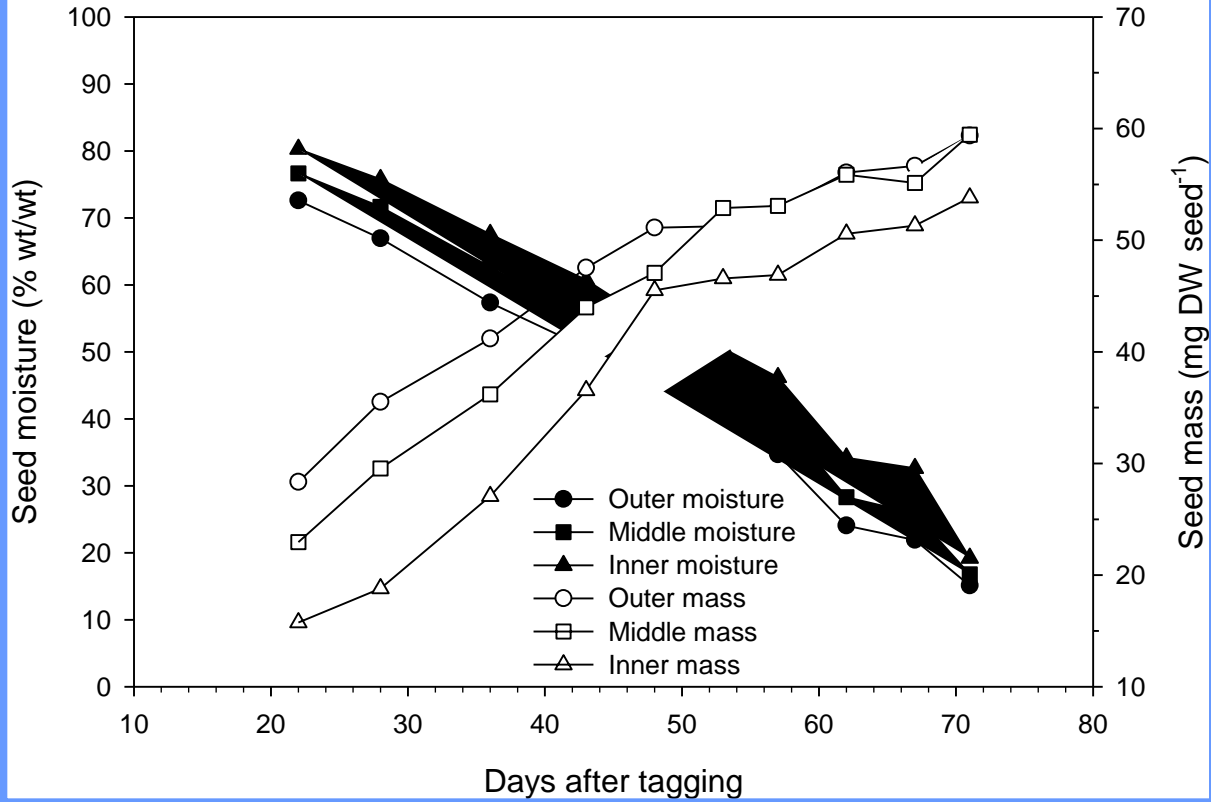
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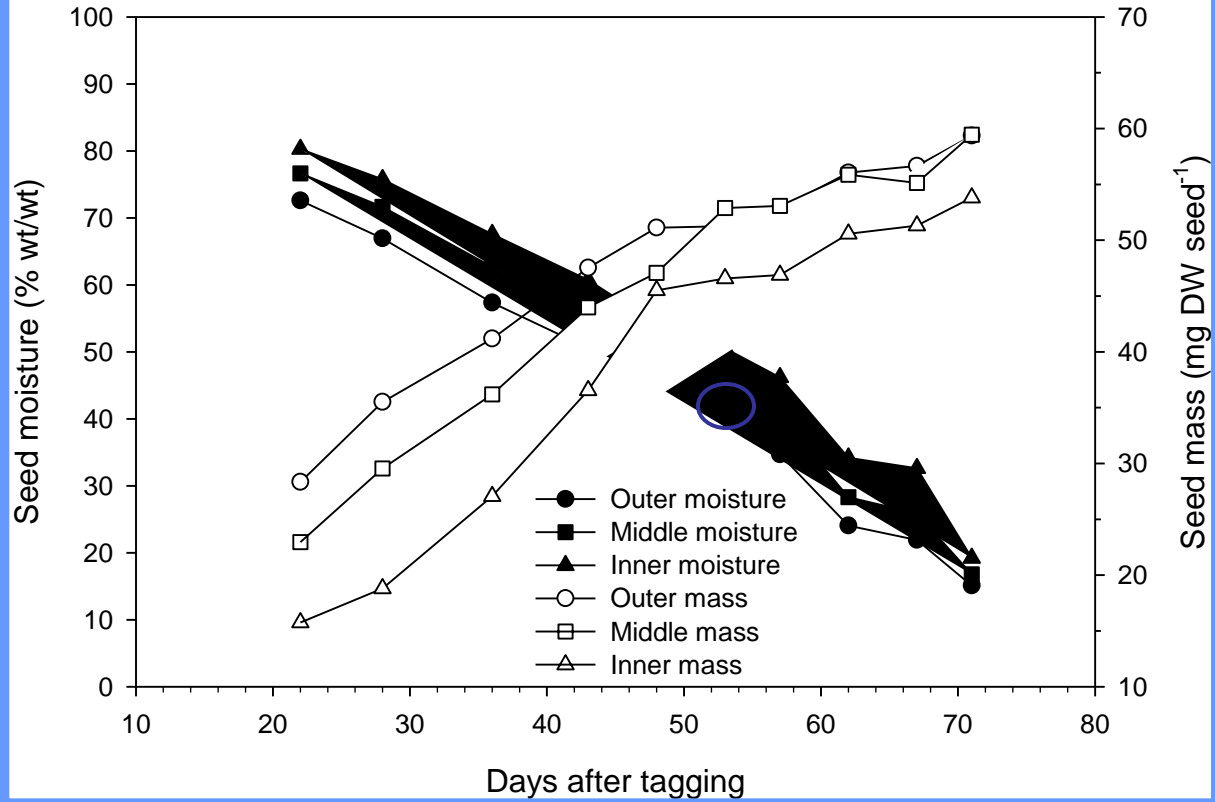
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# 8N272 at Prosper



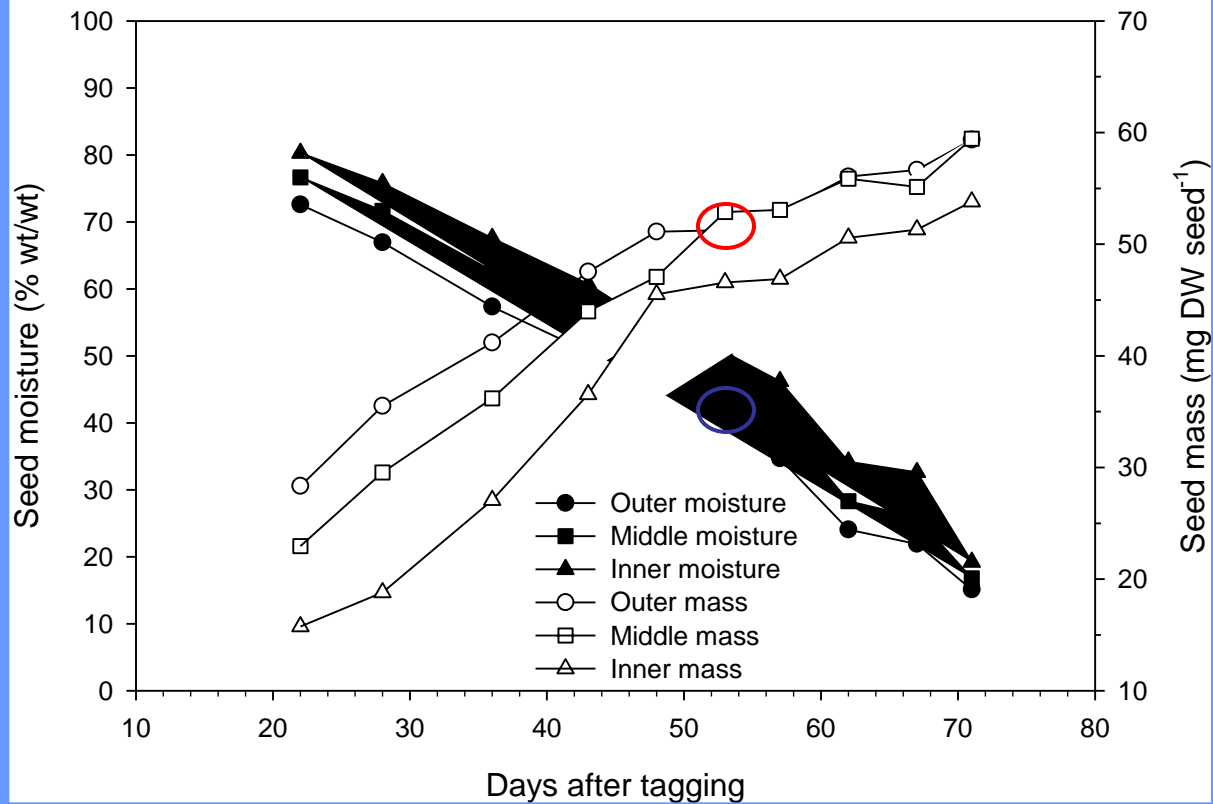
08/06/2008

# 8N272 at Prosper

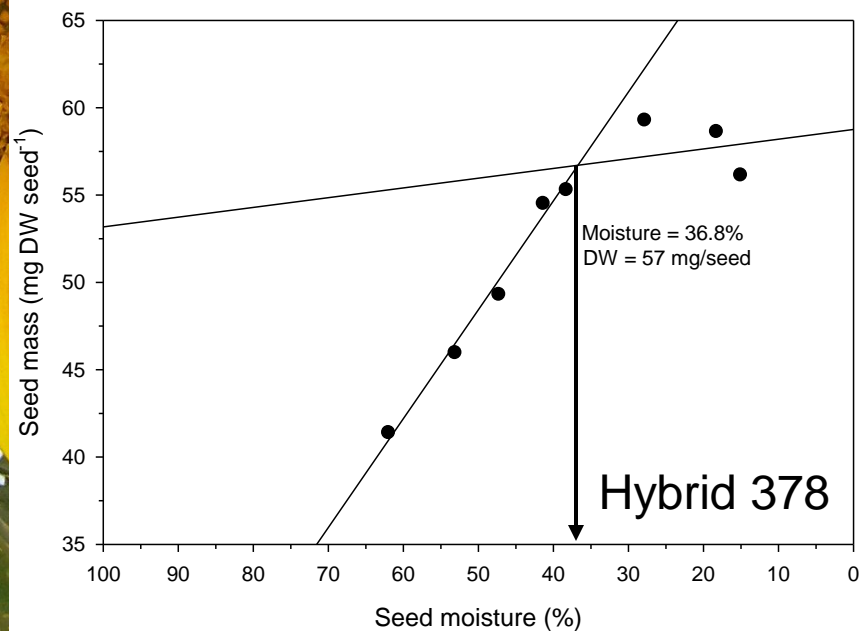
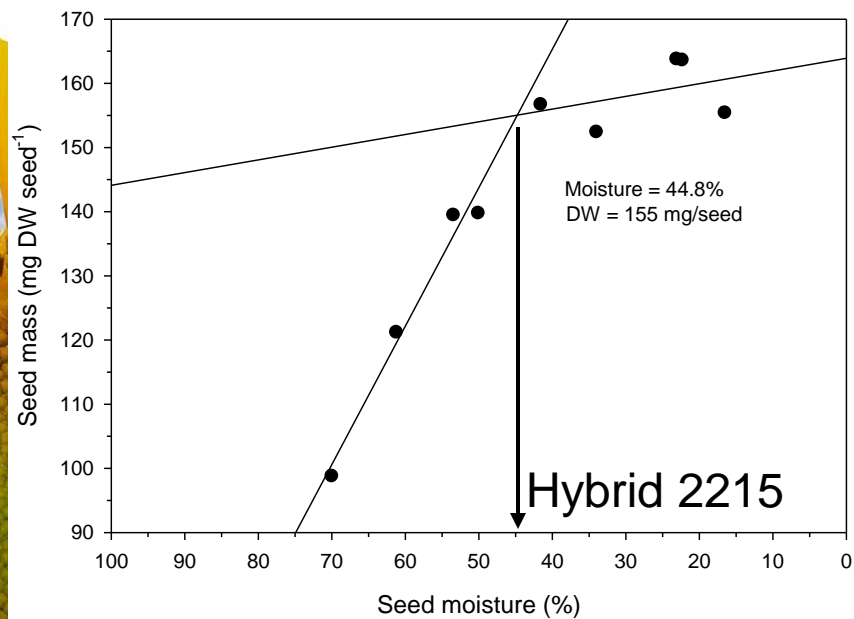
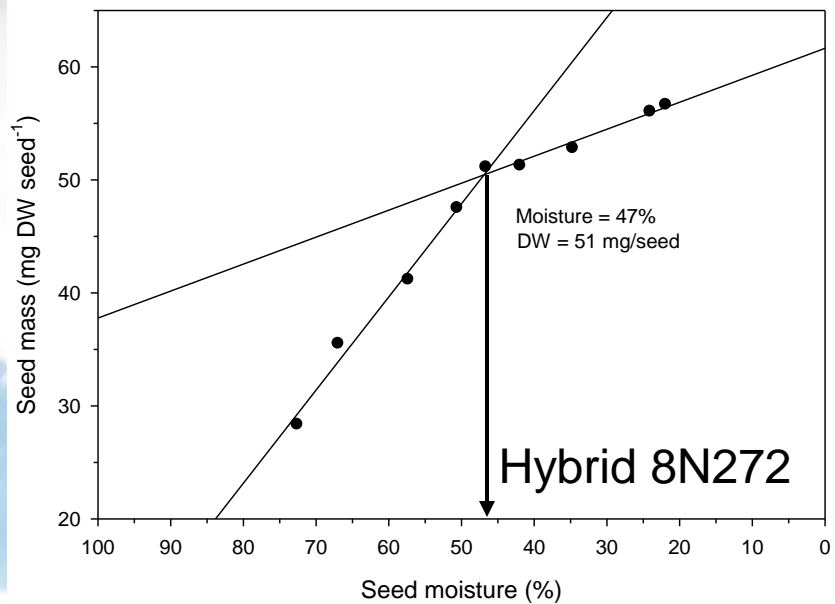


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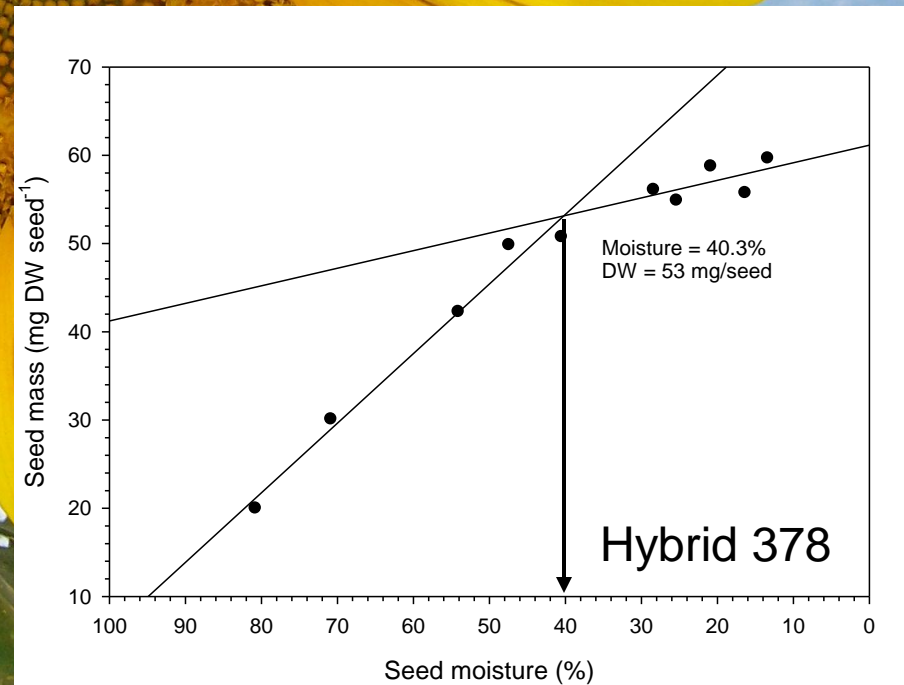
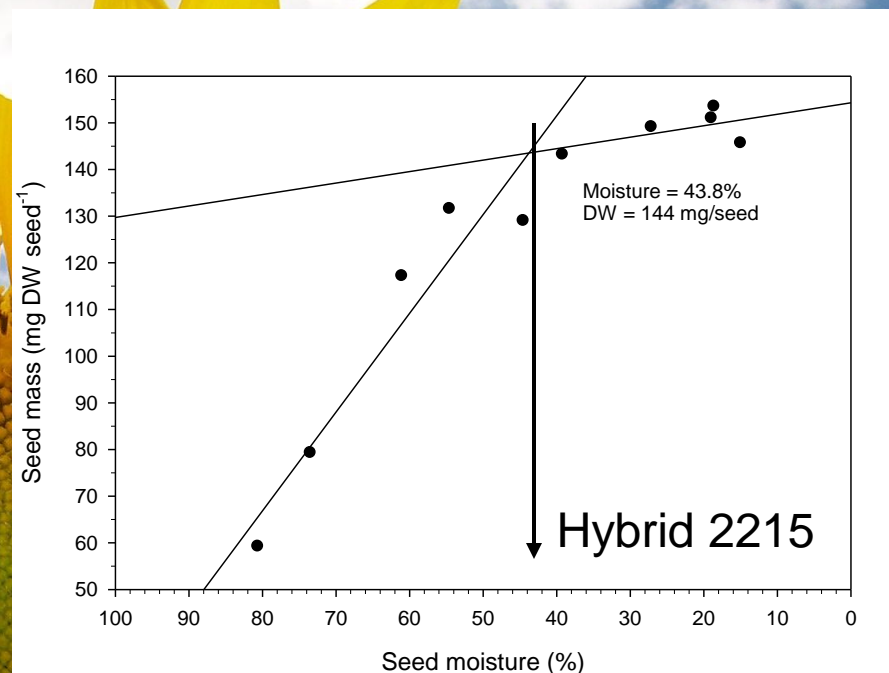
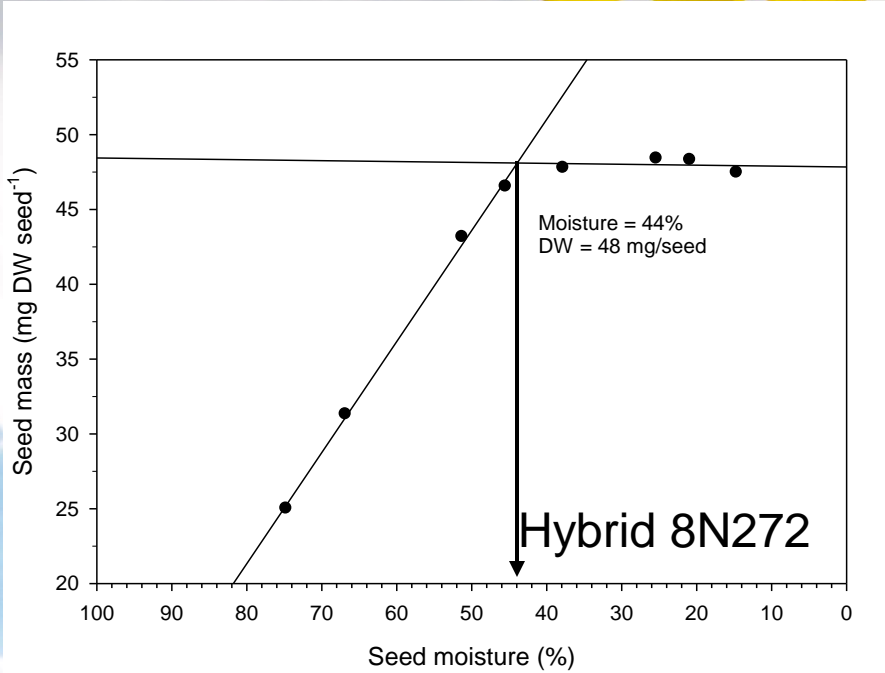
# 8N272 at Prosper



08/06/2008



Data of outer seed  
for Prosper, ND



Data of outer seed  
for Morris, MN





## **Summary**

**Maximum seed weight occurred between  
37 and 47% seed moisture**

**Thanks to the National Sunflower Assoc. for  
research funding and Mycogen Seeds, Croplan  
Genetics, and Red River Commodities for seed.**



***Questions?***