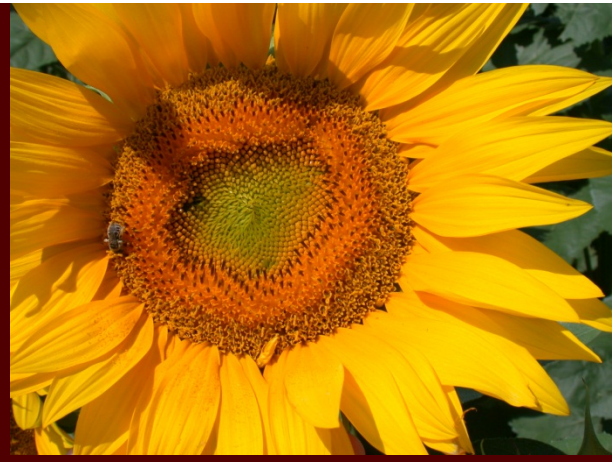
Height, Yield and Oil Content of Short-Stature Sunflower (Helianthus annus) *vs. Conventional Height Sunflower in the Southern High Plains*



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TEXAS A&M AGRILIFE EXTENSION

K-STATE Research and Extension

Short-Stature (SS) Sunflower

- Initial commercial release about 2002 with advent of NuSun
- Earliest hybrids were as much as 2.0-2.5’ shorter than many conventional hybrids

- What are implications of shorter sunflower?
- What about management?
  - Lodging?
  - Yield?
  - Oil content (thought this is not necessarily a trait of SS)
  - Field operations for sunflower moth and weed control?

TEXAS A&M AGRILIFE EXTENSION


Hybrid Trial, Lubbock, TX 2010

Hybrid Trial, Bardwell, TX 2011

How this summary is conducted

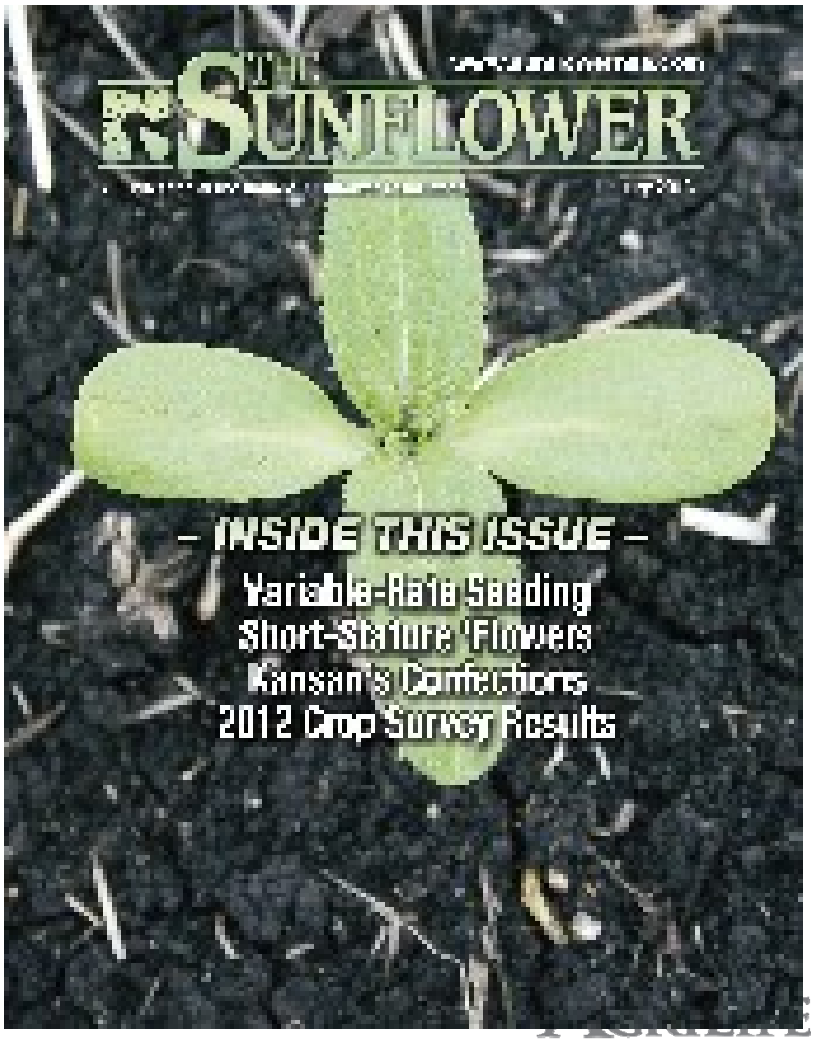
- Texas High Plains and Western Kansas public irrigated hybrid trial sites have 3 to 6 SS hybrids (Triumph Seed Co.) per site most years
- Comparisons (non-statistical) made of height, yield, and oil content as a group for SS and Conventional hybrids

- Northern producers may be interested in maturity of SS hybrids, which tend to be near full-season, which might preclude use of current SS hybrids in North Dakota

TEXAS A&M AGRILIFE EXTENSION

"*The Sunflower*," January 2013 Issue

- "Options Growing with Short-Stature Hybrids"
- Read scientist and industry comments on SS sunflower



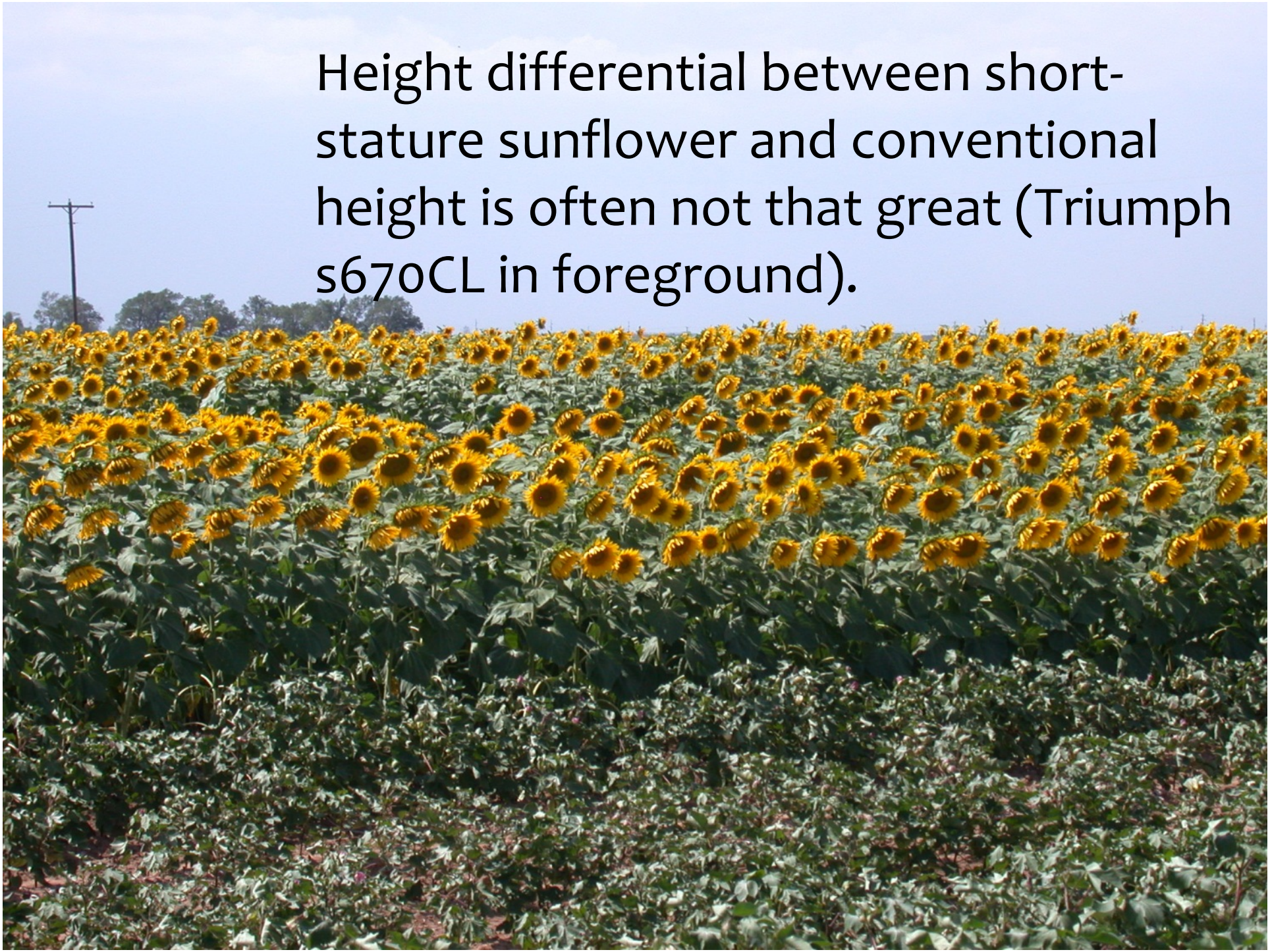
EXTENSION

Criteria for “Short Stature” Sunflower?

- There is none, but this is commercial designation
- How much reduced height is needed to change the characteristics or management requirement (something you have to do) or management opportunity (something you now *can* do)?

- Producer criteria:
  - In-field spray or cultivation mid-season?
  - Ease of harvest?
  - View may depend on row spacing?
  - Reduced lodging?

TEXAS A&M AGRILIFE EXTENSION


Height differential between short-stature sunflower and conventional height is often not that great (Triumph s670CL in foreground).

Short-Stature Sunflower on 30” Rows

Industry Offerings (Oilseed)

- Triumph Seed Company initiated commercial short-stature hybrids
- Other companies now also offer short-stature or at least ‘shorter’ hybrids (perhaps ‘reduced height’ is a better designation?)
  - Mycogen (8N678S)
  - Seeds 2000
  - Others?
  - Remember that environment affects actual height

- *This report is not an endorsement of any product or company by Texas A&M AgriLife Extension Service or K-State Research & Extension*.

TEXAS A&M AGRILIFE EXTENSION

2008-2011
TX Panhandle Oilseed Hybrid Trials

Year	Hybrid Type	# of Hybrids	Height Avg. (in)	Height Range (in.)	%Oil Content	Yield (Lbs/A)	Crop Value ($/A)
2008	SS	5	45	38 to 51	40.4	2,292	$564
	Conv	21	60	47 to 71	37.8	2,113	$493
2009	SS	5	52	49 to 59	47.1	2,646	$550
	Conv	28	73	62 to 90	44.8	2,609	$523
2010	SS	4	55	51 to 59	43.1	2,407	$402
	Conv	22	71	63 to 77	40.7	2,515	$395
2011	SS	3	42	41 to 44	41.2	2,168	$621
	Conv	25	56	48 to 66	41.3	2,237	$643
4-Year	**SS**	**17**	**48**	**45 to 53**	**42.9**	**2,379**	**$534**
	Conv	**96**	**65**	**55 to 76**	**41.1**	**2,368**	**$513**

Lodging, all kinds: SS, 2.0%; Conv, 3.7%

TEXAS A&M AGRILIFE EXTENSION

2008-2011
Lubbock, TX Oilseed Hybrid Trials

		Height	Height			Crop
Hybrid	# of	Avg.	Range	%Oil	Yield	Value
Type	Hybrids	(in.)	(in.)	Content	(Lbs/A)	($/A)
SS	15	47	44 to 51	43.2	2,184	$494
Conv	80	60	50 to 69	41.0	2,036	$453

Lodging, all kinds: SS, 0.4%; Conv, 2.5%

TEXAS A&M AGRILIFE EXTENSION

2009-2011
Tribune, KS Oilseed Hybrid Trials

Hybrid Type	# of Hybrids	Height Avg. (in)	Height Range (in.)	%Oil Content	Yield (Lbs/A)
SS	11	53	51 to 56	43.3	1,947
Conv	81	64	53 to 72	40.9	1,667

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2009-2010
Colby, KS Oilseed Hybrid Trials

Hybrid Type	# of Hybrids	Height Avg. (in)	Height Range (in.)	%Oil Content	Yield (Lbs/A)
SS	19	51	44 to 58	43.3	2,718
Conv	63	69	61 to 76	42.5	2,780

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Summary I

- Yields of short-stature sunflowers are at least comparable to conventional height sunflowers
- SS hybrids may allow better management of in-field operations such as sunflower head moth sprays (ground rig), cultivation of weeds, etc.
- Compact, short-stature growth habit does not penalize yield potential.
- Other intangibles: reduce potential blackbird roosting, acceptable (reduced) maturity for northern climes?, reduced root lodging?

Summary II

- Like any significant change in plant phenotype, producers will learn how to manage the plant type to their benefit
- Read the current issue of “The Sunflower” for additional grower and industry considerations
- Some current SS hybrids may be “reduced height” but not short enough to change management opportunities

TEXAS A&M AGRILIFE EXTENSION