Texas High Plains:
Spring-Planted Oats for Forage

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Since ~2002

- Oats planted in late winter for “catch up” small grains forage production
  - There’s not enough wheat for grazing
  - Wheat condition is poor (2006, 2011, 2021)
  - More cattle on hand than expected
- Up to 50,000 acres per year in TX High Plains
- Oat forage yields look very good, but seldom grazed
  - Oats may be more tender, don’t take grazing as well

Why not stay with wheat?

- Wheat—has greatly reduced grazing potential from winter & early spring seedings
- Inadequate chilling of wheat seed: At some unpredictable point wheat seed gradually fails to vernalize (minimum amount of chilling) in order to grow reproductively which is needed for high forage yield
- This risk in the Texas South Plains probably begins late January some years around Lamesa to early February in the NW South Plains

Why not stay with wheat?

- Example: wheat (TAM 200) vs. oats in 2001 (Hale Co.) and 2002 (Lubbock Co.)
  - 2001, seeded March ~20th, and one-time hay harvest, TAM 200 wheat ranked 11 of 13 for total forage but comparable to short-maturity oats
  - 2003, seeded Feb. 15th—5 weeks earlier than 2002!—only about 10-15% of wheat vernalized and forage yield was less than half of lowest yielding oat variety
  - 2003, most wheat was less than 10” tall in spite of irrigation

Why not stay with wheat?

- Hard to predict when the wheat may vernalize
- Oat is a safer bet (vernalization not required)
- But oat seed cost might make you think about drilling wheat anyway
  - What is the risk if you don't get much forage production due to potential lack of adequate chilling in wheat?

Why not stay with wheat?

- Wheat can be seeded earlier than oat in late winter as it is a bit more cold tolerant
- But with little rainfall and cold conditions, seeding earlier may not make much difference in forage yield
  - What is 10 relatively cold days worth in terms of forage production?

Why not stay with wheat?

- Dr. Brent Bean, former extension agronomist, Amarillo, suggests you could consider seeding wheat for forage in the TX Panhandle to ~Feb. 10 using a variety with a low vernalization/chilling requirement
- Chilling requirement for wheats (limited AgriLife field evaluations 2006-2008):
  - Low: Jagger, Overley, TAM 401 (beardless)
  - Intermediate: TAM 112, Jagalene, Fannin, Fuller, Jackpot, Greer, TAM 203, Billings
  - More recent data (unpublished) may be available from the Texas A&M AgriLife Center, Amarillo (Dr. Jackie Rudd, jcrudd@ag.tamu.edu)
- If the Panhandle farmer is wanting forage, then after early February consider oats.

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Wheat cut-off for South Plains

- Based on Panhandle suggestions (later) then for South Plains, cut-off or transition from wheat to oats suggests that wheat planting conclude as follows:
  - Lamesa area, last week of Jan.
  - Lubbock, by Feb. 1
  - NW South Plains, first week of February
- Stay with low chilling requirement wheats
- Otherwise, delay seeding & go to oats in Feb.

Other small grains?

- Rye also is more tolerant of colder seeding conditions, but rye isn't a preferred grazing forage
- Triticales are not well suited for late winter seeding in this area
  - T-2700 is only variety triticale experts would recommend for spring-seeding—not sure in 2021 if this variety or a comparable spring triticale is still available.

OK, you choose oats…

- Whoa! Seed cost is high, so maybe I will consider wheat again
- But at what risk?—Especially if you must have forage production, and wheat might not deliver yields
- Shop around for oat seed varieties and availability throughout the Texas High Plains

Oat Seed Quality& Seeding Rate

- Oat standard test weight is 32 lbs./bushel
- Minimum germination of 85%
- Well irrigated, agronomically target oats at 90-100 lbs./A (3 bushel/A)
  - Good yields observed with 2 bushels/A (Lubbock)
- Dryland, 2 bushels/A, but lower seed rates (~50 lbs./A) probably adequate provided you can get stand
  - Dryland oat forage will require good soil moisture
  - Seed cost might be unreasonable for dryland

Spring-Planted Oats, TX South Plains

- Plant early when average daily soil temperature = 45 F although 50 F is ideal
  - Lamesa, about Feb. 1-10 (general estimate)
  - Lubbock, Feb. 7-14
  - Dimmitt, Feb. 10-20
- For Lamesa, ideally seed no later than March 1 (and not recommended after about March 15)
- Excellent spring forage production
- Perhaps best used for hay

Lubbock Oat Forage Trials, 2002-2003

- Seeded mid-Feb. to mid-March
- Flood irrigated
- ~60 lbs. N/acre
- Replicated

Lubbock Oat Forage Results 2001-2002 (dry lbs./A)

Oat Maturity	Multiple Clipping	One-time Hay Harvest
Short	4,600	3,260
Long	5,040	5,660

Five long-maturity varieties; seven short.

Conclusions, LBB 2001-2002

- Short maturity oats produced more grain
- Longer maturity varieties yield more forage in A&M--Lubbock testing, especially for one-time hay harvest
  - Medium-long: Troy, Monida
  - Long: Charisma, Magnum (now Magnum 2000)
  - Very Long: Walken
  - Short maturity, lower forage yielding oats: Bob, Jerry, Nora, Chilocco, TAMO 397, Dallas
- Most of these varieties, especially the medium-longs (and which are mostly norther Spring oats) are still available commercially in Texas

Recent Oat Varieties for Hay

- Past oat forage varieties that are still available—unless noted these are spring oats:
  - Monida is most common, also Walken;
  - Troy may no longer be available (difficulty getting foundation seed for seed production)
  - Have not seen Magnum or Charisma available for several years.
  - Newer oat lines that are promising and will be testing beginning later winter 2021: EverLeaf 126, Goliath, TAMO 606; others could be Harrison, Hytest, AC Morgan.
  - Jerry is a common dual-purpose oat that has performed well in multiple clipping forage trials but not hay; it produces better grain yields

Recent Oat Varieties for Hay

- Remember, the medium and longer maturity oat varieties produce more forage in haying systems
- Recent Texas A&M AgriLife oat variety testing for grain and also forage: http://varietytesting.tamu.edu/wheat/
  - Scroll down to the section “Oat Variety Trials” and “Small Grains Forage Trials”
  - Mostly Central Texas data, but some from Rolling Plains & Concho Valley

TX South Plains Oat Production Tips

- N requirements met sufficiently with 40-60 lbs. N/acre for most production
- Delay in planting may cause heat stress, especially for Walken: very long maturity
- Pre-plant glyphosate or 2,4-D
- Once established, if needed: Aim, Glean, Buctril, Peak, 2,4-D (but not Ally)

Extra, Extra…

- Will you bale oat or other small grains?
- When will you do it? What will you use the hay for (feed or sell)? If you are feeding it, what type of animal (stockers needing more protein vs. cows)
- Key Question: What happens to forage quality the longer you wait to harvest?

Lubbock Co. Oat Trial
One-time Hay Harvest (variety Troy)

Growth Stage at Harvest	Harvest Date	Dry Hay Lbs./A	% Crude Protein	Lbs. CP per acre
Early Boot	May 17	3,240	18.4	596
Init. Heading	May 24	4,510	16.3	735
Fully Headed	May 31	5,465	13.9	760
Milk	June 7	6,010	12.5	751
Mealy Ripe	June 14	6,420	11.5	738
Firm Dough	June 21	6,845	8.7	596

Troy oat was harvested for six Fridays in a row among extra plots. Yield was taken for three plots at each date, each sample analyzed for crude protein. When you consider your tonnage and forage quality goals, and your use or your market, which scenario is best for you?

Wheat Hay—Castro Co.
2002

Growth Stage at Harvest	Dry Hay Lbs./A	% Crude Protein	Lbs. CP per acre
Boot	2,590	18.6	482
Mid-heading	4,890	14.1	689
Soft Dough	6,230	9.4	586

Hay Forage Quality

- Overlooked, underrated

- Selling hay?
- What kind of livestock is the forage for? Don't waste good boot quality forage on cows
- Poor quality forage to stockers, trying to gain weight, will have to be supplemented

Plant Quality Oat Seed

- Test Wt. ≥ than 32 lbs./bu
- Germination ≥ 85%
- You have a right to ask about seed quality before they ship your oats!
- If seed is poor quality
  - Plant higher seeding rate
  - Plant under optimum conditions
  - Seed treatments may help