Risk Management Considerations - Barley, Rye, Wheat, and Specialty Corn

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Center of Farm Management
THE UNIVERSITY OF TENNESSEE

Tennessee Acres

	NASS Acres Harvested for Grain 2022 (2017 Census)	RMA Insured Acres 2022	2022 FSA Crop Acreage (Grain)
Barley	- (842)	1,320	2,358 (1,793)
Corn	835,000 (716,733)	706,643	799,454 (789,085)
Oats	- (581)	90	3,898 (1,289)
Rye	- (-)	-	3,666 (144)
Wheat	335,000 (312,973)	284,608	345,737

NASS Quick Stats: https://quickstats.nass.usda.gov/
NASS Tennessee Ag Census: https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_1_State_Level/Tennessee/
RMA Summary of Business: https://www.rma.usda.gov/SummaryOfBusiness
FSA Crop Acreage Data: https://www.fsa.usda.gov/news-room/efoia/electronic-reading-room/frequently-requested-information/crop-acreage-data/index

Corn Acres in Tennessee USDA FSA

- Crop Acreage Data Reported to FSA
  - Blue Corn: 0.5 acres
  - Ornamental: 1.1 acres
  - Red Corn: 63.6 acres
  - White: 22,653 acres
  - Yellow: 766,366 acres

Tennessee Organic Grain Production

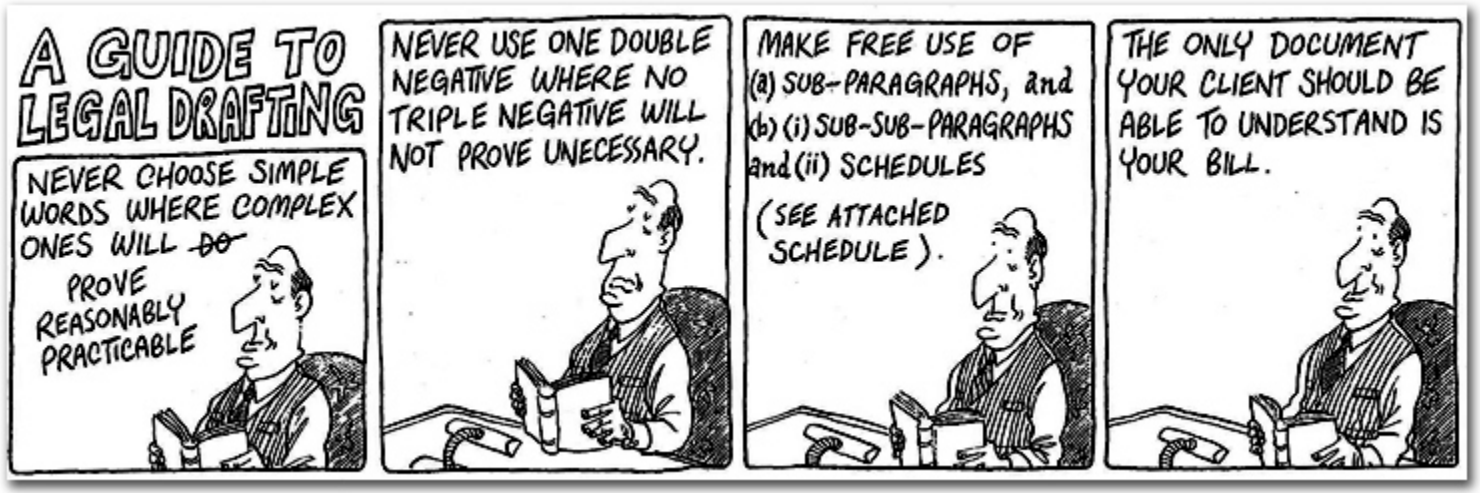
- 2021 Certified Organic survey
  - https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Organic_Production/index.php
  - Certified Organic Corn in Tennessee
    - 1,920 acres;
    - 174,906 bu;
    - 91 bu/acre;
    - $9.40/bu.
  - Certified Organic Wheat in Tennessee
    - 400 acres;
    - 21,000 bu;
    - 52.5 bu/acre;
    - $9.12/bu.
- AMS National Organic Grain and Feedstuffs Report https://www.ams.usda.gov/mnreports/lsbnof.pdf
  - December 14, 2022 – Yellow corn: Spot - $10.48-$11.15; New Crop - $11.00-12.00.

Risk Management

- Contracting
  - Examples
- Crop insurance
  - What are your options?
- Profitability analysis
  - Comparing enterprise alternatives
- Counterparty risk & alternative markets
  - Access to markets and discounts

Contracting

- Obtain proper legal advice
- Read and understand clauses in the contract
- Make sure you can comply to with the contract
- Be aware of counterparty risk



Basic Provisions

- Crop year
- Acres contracted
- Production / Location
- Variety
- Pricing mechanism
- Delivery location

As a lawyer woke up in the hospital after surgery he asked, “Why are all the blinds drawn in here?” The nurse answered, “There’s a fire across the street and we didn’t want you to think the operation had been a failure.”

Malt Barley Purchase

- The producer grants the purchaser first right to purchase a minimum of 60 bu/acre of any or all of the barley produced on the contracted acreage provided the barley is selected by the purchaser and that it meets or exceeds the quality parameters outlined.

Q: How can a pregnant woman tell that she's carrying a future lawyer?

A: She has an uncontrollable craving for bologna.

Sample Delivery

- Once the producer has completed harvesting the crop, the producer will provide production estimates and a representative 500-gram sample of the barley from each storage bin used by the producer within 10 days of completing harvest and a recheck upon request. The purchaser will advise the producer of suitability of submitted samples for malting within 10 business days of sample submission.

- USDA – Practical Procedures For Sampling Grain At Farm Sites And Remote Locations
  - https://www.ams.usda.gov/sites/default/files/media/PracticalSamplingProcedures2017.pdf

Q:What's the difference between a vacuum cleaner and a lawyer riding a motorcycle?
A:The vacuum cleaner has the dirt bag on the inside.

Quality Specification (Example: CMC)

Protein	10%-12.5%	Germ (4ml/3-day)	95% Min	Green Kernels	1.0% Max
Moisture	Max 13.5%	Germ (8ml/3-day	81% Min	Sprout	Nil
Plump (>6/64ths)	85% Min	Color	Bright and Uniform	DON (vomitoxin)	0.5 PPM Max
Thin Kernels	3.0% Max	Foreign Material	2.0% Max	Chitted	Nil
Peeled & Broken	5.0% Max	Other Cereal Grains	1.0% Max	Heated	Nil
Primary Insect	Nil	Ergot	Nil	Excreta	Nil
Stones	Nil	Varietal purity	97%	Wild Oats	1.0% Max

Q: Why did God invent lawyers?

A: So that real estate agents would have someone to look down on.

Other Contract Provisions

- Storage and delivery interval.
- DON/Fusarium Head Blight other production practice controls.
- Notification of crop failure.
- Transfer of contract.

Q: What's the difference between an accountant and a lawyer?

A: Accountants know they're boring.

Contracting Summary

- Contracting can be a valuable tool to share risk between the producer and the purchaser.
- Not all contracts are equal, quality matters.
- Both parties should obtain independent legal advice.

Q: What do you call a lawyer with an IQ of 100?
A: Your Honor.
Q: What do you call a lawyer with an IQ of 50
A: Senator.

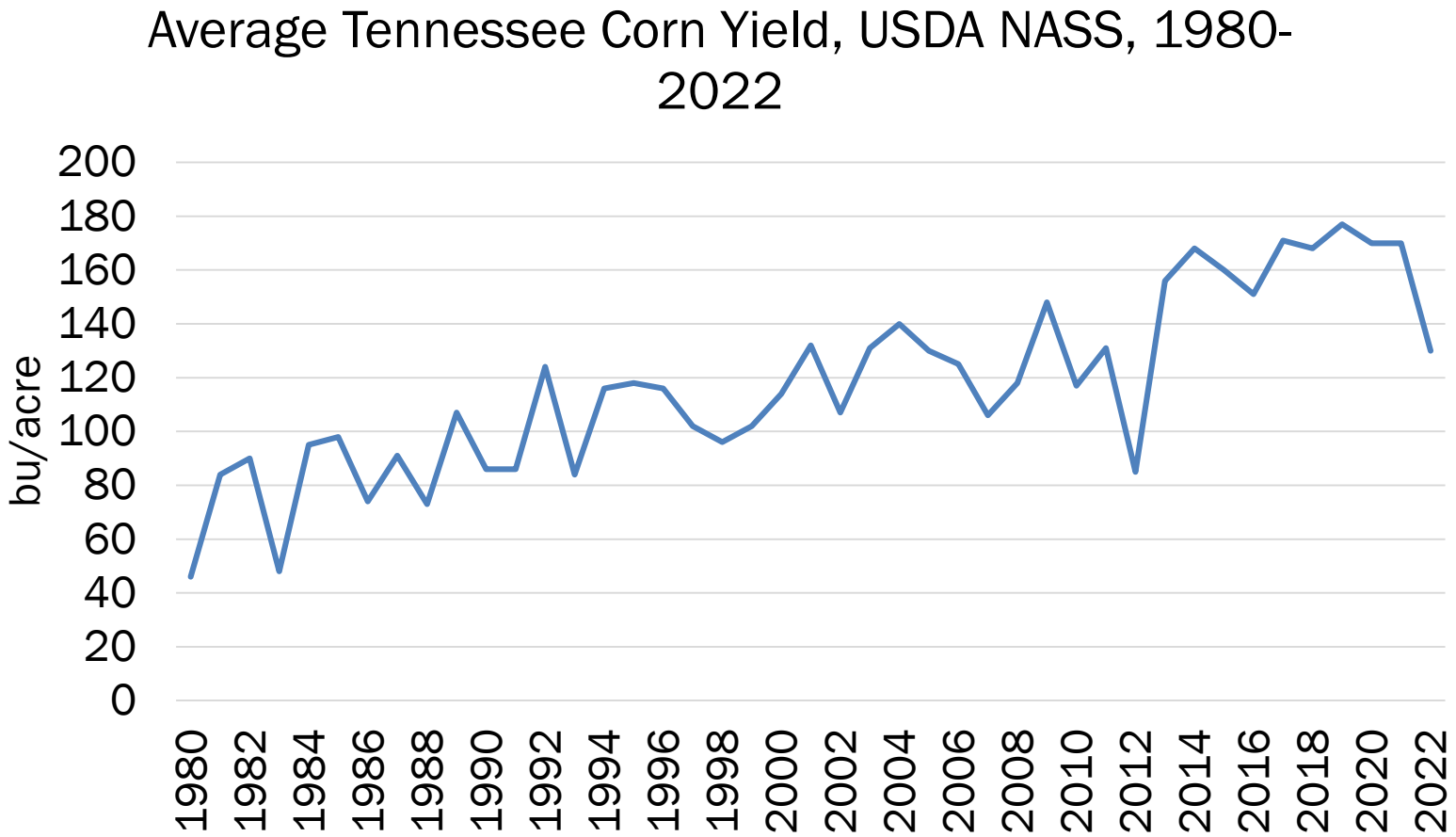
Crop Insurance

- Discuss available crop insurance alternatives with your crop insurance agent.
  - Insurable practices in your county
  - Data and information requirements
  - Coverage versus expected gross revenue
- Multiperil Crop Insurance (MPCI)
  - https://www.rma.usda.gov/en/Topics/National-Fact-Sheets
- Whole Farm Revenue Protection (WFRP)
  - https://www.rma.usda.gov/Fact-Sheets/National-Fact-Sheets/Whole-Farm-Revenue-Protection
- Noninsured Disaster Assistance (NAP)
  - https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/FactSheets/noninsured_crop_disaster_assistance_program-nap-fact_sheet.pdf

Profitability Analysis

- Operation specific
- To compare alternative enterprises, determine:
  - Expected yield
  - Projected harvest or post harvest prices
  - Cost of production
  - Sensitivity analysis

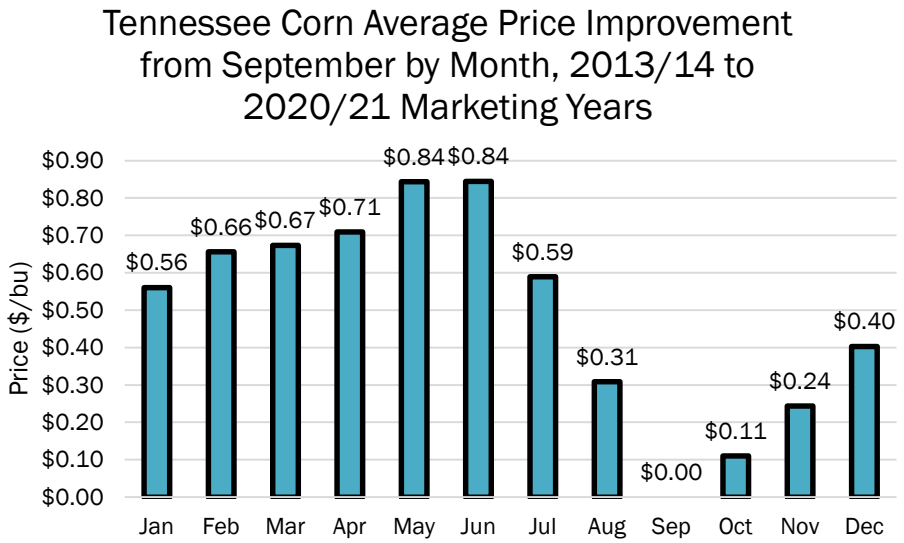
Projected Yields



- Projected yield by crop
- Yield variability
- Yield trend

Harvest or Post Harvest Price

- Contracted price
- Local cash price at terminal market(s)
- Pricing alternatives
- Returns to storage



Cost of Production

2022 Corn, No-Till, Non-Irrigated Budget				
	Unit	Quantity	Price	Total
Revenue [1]				Gross Revenue ($/Acre)
Corn	Bu/acre	175	$5.65	$988.75
Government Payments	$/acre	1	$0.00	$0.00
Other Revenue	$/acre	1	$0.00	$0.00
			Total Revenue	**$988.75**
Variable Expenses				
Seed[2]	Thous.	32	$3.65	$116.80
Fertilizer & Lime (Table 1)	Acre	1	$318.44	$318.44
Chemical (Table 2)	Acre	1	$64.79	$64.79
Crop Scout or Consultant	Acre	1	$15.00	$15.00
Repair & Maintenance (Table 3)	Acre	1	$43.89	$43.89
Fuel, Oil & Filter (Table 3)	Acre	1	$19.66	$19.66
Operator Labor (Table 3)	Acre	1	$13.98	$13.98
Crop Insurance[6]	Acre	1	$15.91	$15.91
Machinery Rental	Acre	1	$0.00	$0.00
Custom Work	Acre	1	$0.00	$0.00
Drying (Fuel/Electric)	Bu	175	$0.00	$0.00
Other	Acre	1	$0.00	$0.00
Other	Acre	1	$0.00	$0.00
Operating Interest[7]	%	$608.47	4.35%	$13.23
			Total Variable Expenses	**$621.71**
			Return Above Variable Expenses	**$367.04**
Fixed Expenses				
Machinery				
Capital Recovery (Table 3)	Acre	1	$103.81	$103.81
Other Fixed Machinery Costs	Acre	1	$0.00	$0.00
General Overhead	Acre	1	$20.00	$20.00
Cash Rent[8]	Acre	1	$104.00	$104.00
Insurance (Non-Machinery)	Acre	1	$0.00	$0.00
Management Labor	Acre	1	$25.00	$25.00
Other	Acre	1	$0.00	$0.00
			Total Fixed Expenses	**$252.81**
			Total Expenses	**$874.52**
			Return Above Specified Expenses	**$114.23**

- Develop cost of production estimates for the crops being considered.
- Start with a template and modify to meet your specific needs.
- Note uncertainty and variability in estimates.
- Changes in capital requirements or specialized equipment.
- Track actual costs compared to budgeted.

UTIA MANAGE Program:
https://arec.tennessee.edu/extension/manage/

Profitability Analysis

Net Returns for Select Price and Yield Combinations ($/acre)

Option 1	#2 Yellow Corn	Price ($/bu)						
		$5.75	$6.00	$6.25	$6.50	$6.75	$7.00	$7.25
Yield (bu/acre)	135	-174	-140	-106	-73	-39	-5	29
	145	-116	-80	-44	-8	29	65	101
	155	-59	-20	19	58	96	135	174
	165	-1	40	81	123	164	205	246
	175	56	100	144	188	231	275	319
	185	114	160	206	253	299	345	391
	195	171	220	269	318	366	415	464
	205	229	280	331	383	434	485	536
	215	286	340	394	448	501	555	609

Assumptions:

Cost of Production: $950/acre

Expected Harvest Price: $6.50/bu

Projected Yield: 175 bu/acre

Profitability Analysis

Net Returns for Select Price and Yield Combinations ($/acre)													
Option 2	**Organic**	**Price ($/bu)**											
		$11.75		$12.00		$12.25		$12.50		$12.75		$13.00		$13.25	
Yield (bu/acre)	55		-394		-380		-366		-353		-339		-325		-311
	65		-276		-260		-244		-228		-211		-195		-179
	75		-159		-140		-121		-103		-84		-65		-46
	85		-41		-20		1		23		44		65		86
	95		76		100		124		148		171		195		219
	105		194		220		246		273		299		325		351
	115		311		340		369		398		426		455		484
	125		429		460		491		523		554		585		616
	135		546		580		614		648		681		715		749

Assumptions:

Cost of Production: $1,040/acre

Expected Harvest Price: $12.50/bu

Projected Yield: 95 bu/acre

Profitability Comparison

Option 2-Option1	Price Premium or Discount ($/bu)											
Organic - #2 Yellow Corn												
Yield Difference (bu/acre)	-220	-160	-100	-40	20	80	140	200	260			
	-240	-180	-120	-60	0	60	120	180	240			
	-260	-200	-140	-80	-20	40	100	160	220			
	-280	-220	-160	-100	-40	20	80	140	200			
	-300	-240	-180	-120	-60	0	60	120	180			
	-320	-260	-200	-140	-80	-20	40	100	160			
	-340	-280	-220	-160	-100	-40	20	80	140			

Under what price, yield, and cost of production scenarios is option 1 superior to 2.
What are the differences in risk or uncertainty of outcomes.

Counterparty Risk & Alternative Markets

- For the crop produced:
  - How many buyers are available?
  - Distance to market (s).
- Secondary markets if quality is not obtained:
  - Animal Feed (# of buyers distance)
  - Price discounts
  - Incorporate secondary markets into sensitivity analysis.

USDA Agricultural Marketing Service Federal Grain Inspection Service U.S. Standards

- Barley: https://www.ams.usda.gov/sites/default/files/media/BarleyStandards.pdf
- Corn: https://www.ams.usda.gov/sites/default/files/media/CornStandards.pdf
- Rye: https://www.ams.usda.gov/sites/default/files/media/RyeStandards.pdf
- Wheat: https://www.ams.usda.gov/sites/default/files/media/WheatStandards.pdf

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