ANNUAL PROGRESS REPORT

TO

NORTH CAROLINA SMALL GRAIN GROWERS ASSOCIATION, INC.

TITLE: **Advancing Sales and Marketing Opportunities for North Carolina Wheat**

LEADER(S): **Heidi Schweizer,[1] Lindsey Haynes-Maslow,[2] Jenny Carleo,[3] and Andrea Sherrill[3]**

DEPARTMENT(S): **Agricultural and Resource Economics,[1] Agricultural and Human Sciences** (adjunct),[2] **and NC Cooperative Extension[3]**

REPORT:

Summary: The project progress is on target, the majority of data has been collected and analyzed. The remainder of the work to be completed is in distilling the information into reports, documents and videos for educational purposes. During this project, one of our key team members Dr. Lindsey Haynes-Maslow left the university. The graduate student working on the project, Laura Schumacher, has completed all of her targets and has graduated. All of the year two funds should be expended by the end of the project.

Objective 1: Find additional avenues for North Carolina-grown soft red winter wheat (SRW) update

- *Small grain growers will receive a report on the practicality of expanding the SRW food use and export markets. It will include:*

  1. *List of elevators that are containerizing already and documentation of challenges to containerization. This information can be used by elevators to assist in decision-making about containerization plans. It can also be used for future funding applications such as USDA Rural Development Grants and USEDA planning grants to local economic development agencies to assist with building new containerization facilities.*
  2. *Quantities, qualities and characteristics that potential international customers are seeking for NC SRW. This information will assist growers and elevators in effectively marketing products overseas.*

  Status: In year one a survey was designed to address a set of key topics to better understand the NC grain handling industry: general marketing, international marketing, services and market structure, transportation and logistics, quality, and storage. These topics were selected in consultation with the board and extension agents and the focus on international exports was reduced (not removed) and there was added focus on the challenges NC grain handlers face and identifying local opportunities for NC farmers and agribusinesses.

  So far in year 2 all three rounds of survey administration are complete. We reached out to 145 locations identified as likely to buy wheat across NC and received responses from 45 locations. All survey data has been collected and analyzed. We still plan to complete follow-up interviews to give more context to the survey data.

  A Master's thesis portraying the current state of the NC grain handling industry using data collected in the course of this project paired with business intelligence data is available at: https://repository.lib.ncsu.edu/handle/1840.20/40773. A subset of preliminary survey results are included as an addendum to this report and are available at: https://drive.google.com/file/d/1fFJKgDbbsYUethIlD87qO3YN6MHziHWD/view.

A complete set of results and the final summary report will be available publically on the NC State Extension small grains portal.

Objective 2: Grain marketing education update

- *One report presentation will be developed on the results of the project. This will simply explain the results and findings of the project so that anyone interested can put the information to use. We will also record it and post it online.*

  Status: In process, the summarized version of the grant report will be widely available on the NC State Extension Small Grains portal.

- *The five marketing videos produced will educate 1,000 growers on the containerizing and grain marketing topics.*

  Status: One video is complete on exporting grain out of NC (http://www.go.ncsu.edu/readext?870034) (798 views of portal post and video), 4 others are in process on forward contracts with an elevator; understanding basis; basics of the futures market, and grain marketing strategy for extracting the most value from your crop ("the marketing cross").

- *Elevators and growers will report increased confidence in their marketing plans as a result of the education provided through the project.*

  Status: Will be conducted once more of the project is complete.

Objective 3: Consumer education update

- *The three SRW recipes and accompanying videos will be viewed 500 times.*

  Status: 3 videos are complete and have a total of 1,881 views of portal post and videos.

  Chocolate Chip Cookies (http://www.go.ncsu.edu/readext?926948),

  Flatbread Pizza (http://www.go.ncsu.edu/readext?916938)

  Three Ingredient Biscuits (http://www.go.ncsu.edu/readext?879674)

- *20 NC consumers in Iredell County will be surveyed on the impact of the educational program on their decisions to purchase SRW. This information can be used towards requesting additional funding for multiple aspects of growing milling and selling SRW.*

  Status: In process – we are developing a short online survey to send to Iredell County Extension clients in preparation for the final report.

Budget / Financial Status Update:

Through the end of June 2023, nearly all of year 2 funds awarded, $11,250, have been spent primarily on student wages and benefits, but also for mailing materials and data access subscriptions essential to the project.

Year 1 (Oct 21 - Sep 22) Expenditures	
Total Awarded: $26,380	
Cost Category	**Amount**
Student Aid / Tuition	8,147.50
Student Wages and Benefits	11,519.77
Travel	2,418.32
Supplies and Services	991.29
Total Spent	$23,076.88
Returned to NCSGGA:	$3,303.12

Year 2 (Oct 22 - Sep 23) Expenditures to Date	
Total Awarded: $11,250	
Cost Category	**Amount**
Student Wages and Benefits	10,396.91
Supplies and Services	519.00
Total Spent	$10,915.91
Remaining (June 30, 2023)	$334.09

IMPACT STATEMENT

This project empowers North Carolina small grain growers by identifying additional avenues for selling North Carolina grown soft red winter wheat (NC SRW) and educating buyers and sellers in these alternative markets. These marketing strategies include both promoting North Carolina grown SRW to local consumers and exporting NC SRW through the Port of Wilmington. North Carolina is uniquely poised to capitalize on both of these markets as the Port of Wilmington expands and the Plant Science Initiative at NC State provides opportunities for interdisciplinary collaboration. Our team's diverse expertise in grain transportation, marketing, crop production, mixed methods study designs, and consumer nutrition are being used in this project to address both local and international channels to increase marketing opportunities for NC SRW.

Table of Contents

Survey Response Rate

Table 1: Survey response rate for each round of contact and in total.

	First Contact	Second Contact	Third Contact	Total	Total (w/out DNBG)
Total Facilities	145	115	120	145	128
Response	18	6	21	45	28
Response: Completed	13	6	9	28	28
Response: DNBG	5	0	12	17	n/a
Returned (Mail)	16	6	n/a	22	22
Response Rate	12%	5%	18%	31%	22%

Facility Demographics

Table 2: Survey respondents' business activities.

Business activities	**Percent of respondents**
Elevator that sells locally	54% (15)
Elevator that sells locally and internationally	21% (6)
Miller	25% (7)
Farmer and elevator	21% (6)
Feed integrator	21% (6)
*Facilities often engage multiple activity types, and some activities did not receive enough responses to be reportable.	

Table 3: Ownership structure of survey respondents.

Ownership structure	**Percent of respondents**
Family-owned	57% (16)
Privately held	29% (8)
*Other structures did not receive enough responses to be reportable.	

Table 4: Survey respondents' that are subsidiaries.

Subsidiary of another location	**Percent of respondents**
Yes	21% (6)

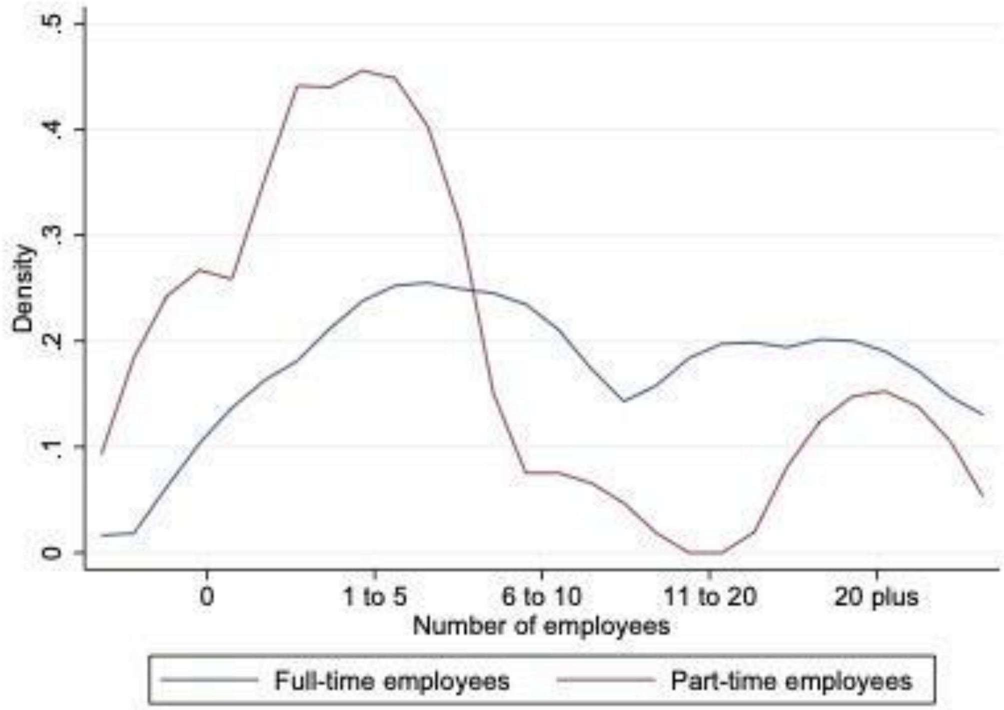
Table 5: Survey respondents' duration of being in business.

Duration in business	Percent of respondents
21+ years	89% (25)
*Other selections did not receive enough responses to be reportable.	

Table 6: Survey respondents with business activities outside of the grain handling industry that contribute significantly to their business revenue.

Business activities	Percent of respondents
Any activities	63% (17)
Activities outside of farming	41% (11)
Farming	30% (8)
None	37% (10)

Figure 1: Probability distribution function of the number of full-time and part-time employees survey respondents employ.



Respondent Demographics

Table 7: Survey respondent demographics.

Demographic variable	Percent of respondents
Male	93% (25)
Age 30-39	15% (4)
Age 40-49	23% (6)
Age 50-59	15% (4)
Age 60-69	31% (8)
White/Non-Hispanic	96% (27)
College graduate	85% (23)
Owner of facility	46.4% (13)
Not the owner of facility	50% (14)
*Omitted demographic classifications did not receive enough responses to be reportable.	

Table 8: Percentage of income derived from grain & oilseed procurement/storage/marketing versus other activities (if the survey respondent is an owner).

Percentage	Percent of respondents
21-40%	31% (4)
41-60%	23% (3)
81-100%	23% (3)
*Omitted ranges did not receive enough responses to be reportable.	

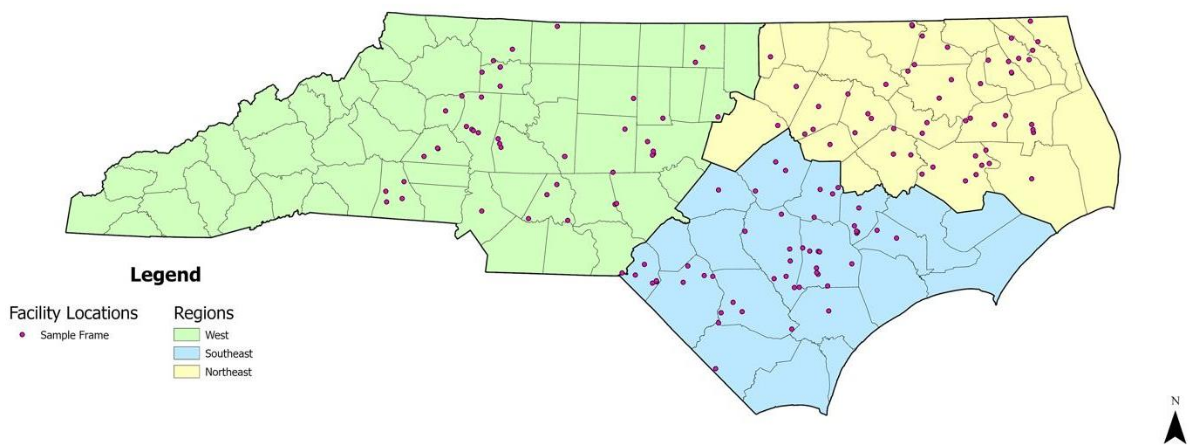
Table 9: Percentage of income derived from this role (if the survey respondent is an employee).

Percentage	Percent of respondents
81-100%	92% (11)
*Omitted ranges did not receive enough responses to be reportable.	

Geography

Figure 2: Geographical representations of the sample frame and survey respondents.

A. Sample frame facility locations



B. Center of gravity analysis of sample frame and survey respondents

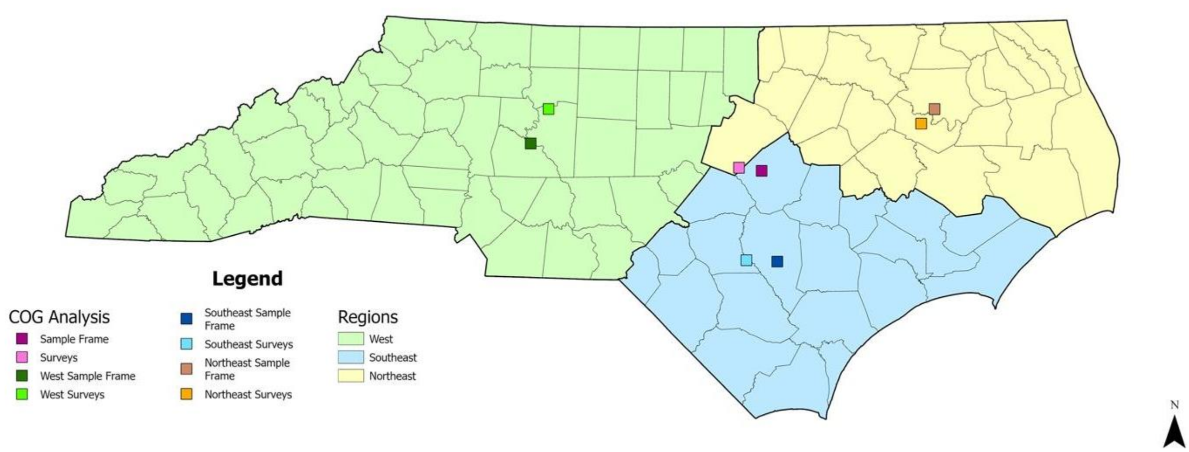


Table 10: Small grains buying facilities and survey respondents located in each North Carolina agricultural region.

Region	**Number of facilities**	**Percent of total facilities**	**Number of respondents**
Southeast	49	33%	10
Northeast	53	36%	9
West	43	29%	9
Sample Frame without DNBG Facilities			
Southeast	44	35%	
Northeast	44	35%	
West	39	31%	

General Marketing

Table 11: Forward contracting usage among survey respondents.

	Number of respondents	**Percent of respondents**
Facilities using forward contracting	26	93%
Facilities using forward contracting for wheat	23	82%
Facilities using forward contracting for corn or soybeans	22	79%
Facilities with a standard contract	24	92% (percent of facilities using forward contracting)

Table 12: Offer and use of specific marketing contracts.

Contract Type	Percent of respondents offering	Percent ranked as first	Percent ranked as second
Forward Price Contract	88% (23)	73% (16)	18% (4)
Basis Contract	77% (20)	32% (7)	45% (10)
Hedge to Arrive	31% (8)	0%	
Other	15% (4)		
*Some rankings did not receive enough responses to be reportable.			

Table 13: Percentage of wheat or total grain procured via marketing contracts.

Percentage procured via marketing contracts	Wheat - number of facilities	Total grains - number of facilities
None		
1-20%	5 (19%)	
21-40%	5 (19%)	12 (46%)
41-60%	7 (27%)	5 (19%)
61-80%	4 (15%)	5 (19%)
81-100%	3 (12%)	
*Some categories did not receive enough responses to be reportable.		

Table 14: Procurement method preferences among survey respondents.

Procurement method	Number of respondents	Percent of respondents
Contracting (any type: forward price, basis, etc.)	15	58%
Purchasing at harvest	4	15%
No preference	7	27%

Figure 4: Probability distribution function of the number of growers survey respondents work with.

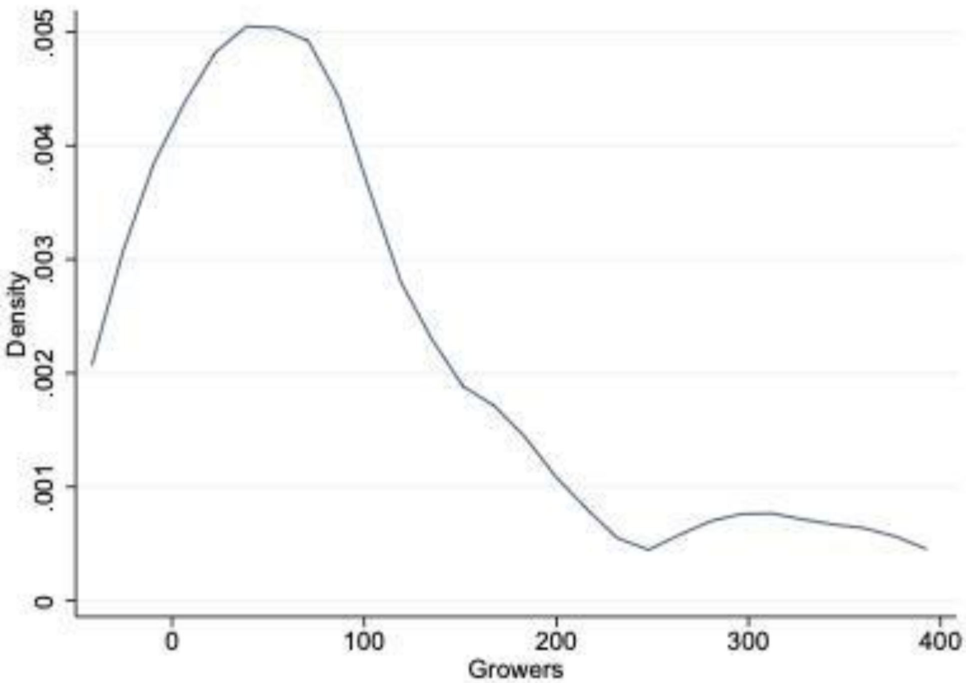
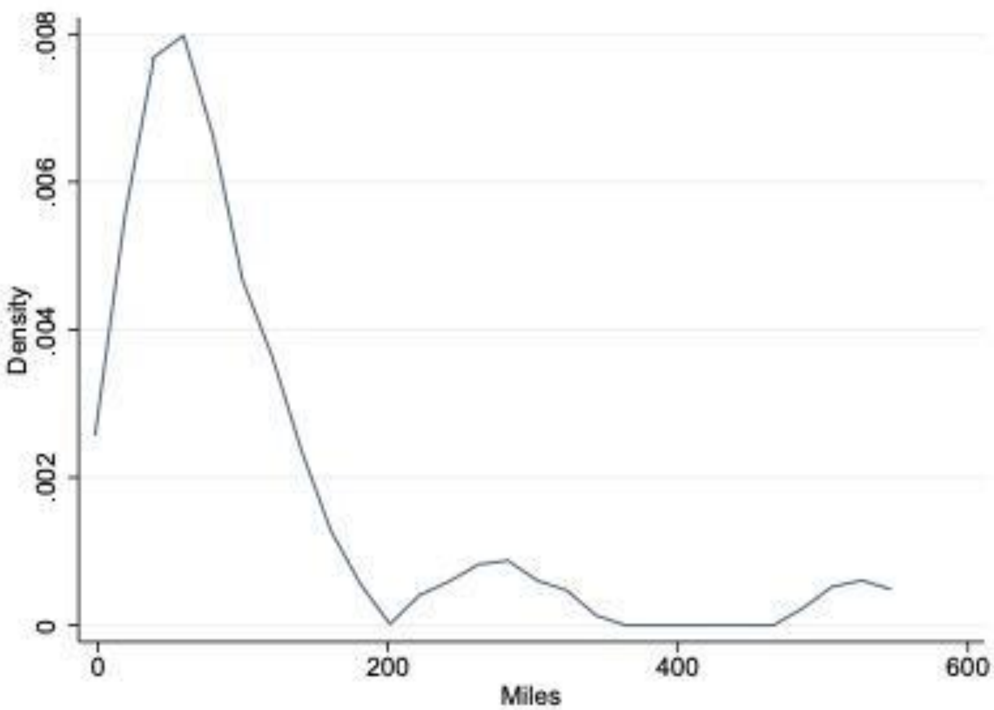


Figure 5: Probability distribution function of the farthest distance growers travel to deliver grains to survey respondents.



For millers only

Table 15: Forward contracting usage among millers.

	Number of respondents	Percent of respondents
Facilities using forward contracting	5	71%
Facilities using forward contracting for wheat	5	71%
Facilities using forward contracting for corn or soybeans	3	43%
Facilities with a standard contract	4	80% (percent of facilities using forward contracting)

Table 16: Offer and use of specific marketing contracts among millers.

Contract Type	Percent of respondents offering	Percent ranked as first	Percent ranked as second
Forward Price Contract	80% (4)		
Basis Contract	100% (5)	75% (3)	
Hedge to Arrive			
Other			

Table 18: Procurement method preferences among millers.

Procurement method	Number of respondents	Percent of respondent
Contracting (any type: forward price, basis, etc.)	5	100%
Purchasing at harvest	0	0
No preference	0	0

For elevators only (locally and internationally)

Table 19: Forward contracting usage among elevators.

	Number of respondents	Percent of respondents
Facilities using forward contracting	18	95%
Facilities using forward contracting for wheat	15	79%
Facilities using forward contracting for corn or soybeans	16	84%
Facilities with a standard contract	17	94% (percent of facilities using forward contracting)

Table 20: Offer and use of specific marketing contracts.

Contract Type	Percent of respondents offering	Percent ranked as first	Percent ranked as second
Forward Price Contract	100% (18)	81% (13)	19% (3)
Basis Contract	78% (14)	19% (3)	56% (19)
Hedge to Arrive	39% (7)		
Other	17% (3)		

Table 21: Percentage of wheat or total grain procured via marketing contracts.

Percentage procured via marketing contracts	Wheat - number of facilities	Total grains - number of facilities
None		
1-20%	4 (22%)	
21-40%	5 (28%)	8 (44%)
41-60%	5 (28%)	5 (28%)

61-80%		3 (17%)
81-100%		

Table 22: Procurement method preferences among elevators.

Procurement method	Number of respondents	Percent of respondent
Contracting (any type: forward price, basis, etc.)	9	50%
Purchasing at harvest	4	22%
No preference	5	28%

International Marketing

Table 23: International marketing survey questions.

Demographic variable	**Percent of respondents**
Percent of facilities selling internationally	29.63% (8)
Ports used	Norfolk (6 – 75%) & Wilmington (4 – 50%)
Facilities encountering challenges obtaining containers	67% (6)
Facilities stating that product marketed internationally is different in quality to that marketed in NC	50% (4)
Facilities considering selling internationally	33% (5)
Facilities not considering selling internationally	67% (10)

Services and Market Structure

Figure 6: Probability distribution function of survey respondents' distance to closest competitor.

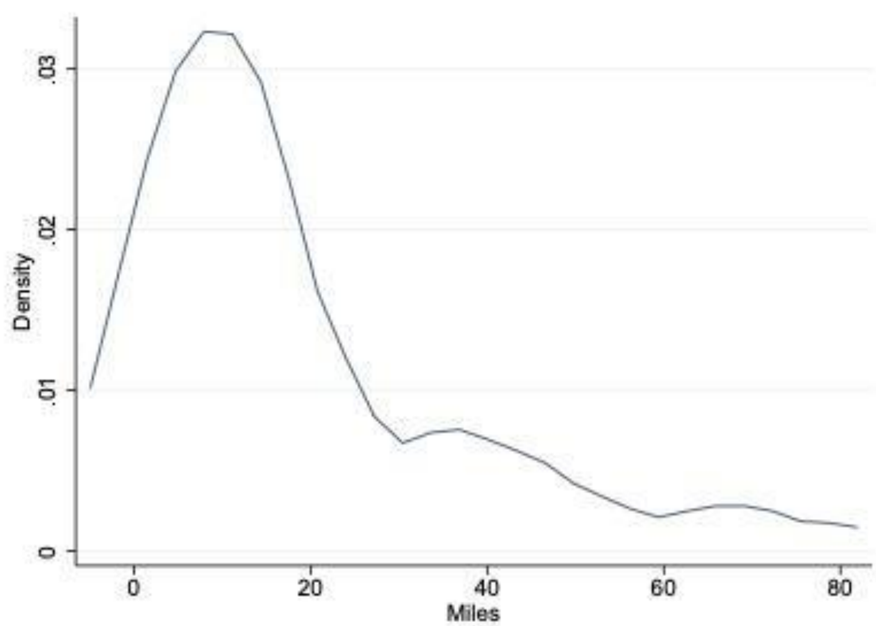


Table 24: Services offered by survey respondents and proportion of respondents claiming their services provided them with a competitive edge.

Services	Number of respondents offering service	Number of respondents claiming a competitive edge	Percent of respondents offering service and claiming a competitive edge
Marketing	21	14	67%
Storage	17	11	65%
Drying	13	11	85%
Other	6	5	83%

Table 25: Primary ways respondents compete with competitors to entice growers to sell them their grain.

Primary methods of competing	Percent of respondents
Price	81% (22)
Specialty services	22% (6)
Volume	15% (4)
Other	33% (9)
*Omitted categories are not reportable due to the number of responses	

Table 26: Participants providing trucking service to transport grain from the farm/field to the facility.

	Number of respondents	Percent of respondents
Farmer delivers	26	93%
Farmer hires a trucking service to deliver from the farm/field	17	61%
Elevator hires a trucking service to deliver from the farm/field	18	64%

Both the farmer and elevator provide trucking services	16	57%
Only the farmer delivers	10	36%

Table 27: Average wait times during harvest if growers' self-truck or procure trucking services to transport grains to facilities.

	Number of respondents	**Percent of respondents**
0-15 minutes	4	14%
16-30 minutes	12	43%
31-60 minutes	8	29%
61-90 minutes		
Prefer not to answer		
*Omitted cells are not reportable due to the number of responses		

Transportation and Logistics

Table 28: Survey respondents with rail service.

Rail Access	Number of respondents	Percent of respondent
Yes	9	32%
No	16	57%
Prefer not to answer		
*Omitted cells are not reportable due to the number of responses		

Table 29: Rail carriers survey respondents use.

Rail Carriers	Number of respondents	Percent of respondent
CSX	7	78%
Norfolk Southern	6	67%
Other carriers		
*Some facilities have access to multiple carriers; omitted cells are not reportable due to the number of responses		

Table 30: Survey respondents that have heard or/are in discussions of reciprocal switching.

Have heard/are in discussions of reciprocal switching	Number of respondents	Percent of respondent
Yes	4	44%
No	3	33%
Other answers		
*Omitted cells are not reportable due to the number of responses		

Table 31: Survey respondents that are aware of problematic road/highway bridges

Aware of problematic road/highway bridges	Number of respondents	Percent of respondent
Yes	6	21%
No	20	71%
Other response		
*Omitted cells are not reportable due to the number of responses		

Table 32: Types of restrictions survey respondents have noted.

Type of restrictions	Number of respondents	Percent of respondent
Weight restrictions on bridge	6	100%
Weight restrictions on road	4	67%

Quality

Table 33: Wheat attribute qualities deemed as high priority for feed use and exporting internationally by survey respondents.

Wheat attribute qualities	Percent of respondents marking as high priority for feed use	Percent of respondents marking as high priority for international markets
Moisture	71% (15)	73% (8)
Test weight	67% (14)	100% (11)
Protein content	33% (7)	36% (4)
Falling number		82% (9)
Don levels		55% (6)
Other		
*Omitted cells are not reportable due to the number of responses		

Table 34: Survey respondents with customers interested in specific quality attributes that are hard to verify later.

Customers interested in specific quality attributes that are hard to verify later	Number of respondents	Percent of respondent
Yes	10	36%
No	11	39%
Don't know	7	25%

Table 35: Survey respondents that are selling wheat for feed use.

Selling wheat for feed use	Number of respondents	Percent of respondent
Yes	23	82%
No	5	18%

Storage

Figure 8: Probability distribution function for storage duration among survey respondents.

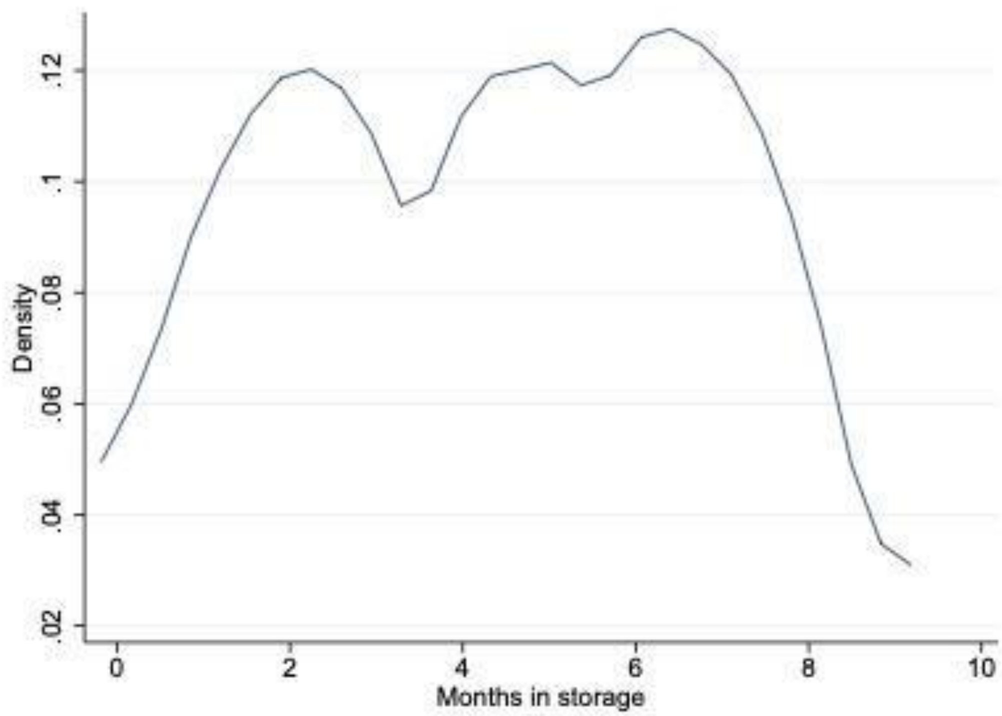


Table 36: Type of storage survey respondents use.

Type of Storage	Number of respondents	Percent of respondent
Bin	27	96%
Warehouse	8	29%
Ground Bags		
Other		
*Omitted cells are not reportable due to the number of responses		

Table 37: Duration in months that survey respondents typically store wheat.

Average	Min	Max
4.36 months	1 month	8 months

Table 39: Total storage capacity of survey respondents.

Average		
775,154.17 bu		
Storage capacity (in bushels)	**Number of respondents**	**Percent of respondents**
1-500,000	13	54%
500,001-1,000,000	5	21%
1,000,000+	6	25%