Ag Econ Misc Report No. 159-S December 1991

Pricing and Marketing Practices for North Dakota Durum and HRS Wheat: 1990 Crop Year

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The value of durum and hard red spring wheat (HRS) is comprised in part by the quality characteristics that it possesses. The value of individual quality characteristics vary through time depending on the supply and demand for that characteristic. The cash market conveys the value of each characteristic in the form of a premium or discount.

Premiums and discounts are determined among individual market participants. The premium and discount schedule changes frequently and differs with location, time, and the current and perceived market conditions. Thus, explicit premiums and discounts rarely are published. Because of their importance and of the fact that they seldom are published, the Department of Agricultural Economics began surveying North Dakota country elevators in 1984 about pricing and marketing practices. This report contains partial results of the December 1990 survey, which is examined and compared to the previous years. The previous report, along with the full 1990 report, can be obtained from the Department of Agricultural Economics, North Dakota State University.

General Characteristics of Participating Elevators

Questionnaires were sent to 489 country elevators in North Dakota, and 75 usable surveys were returned. Of the responding elevators, 71 percent were classified as cooperatives - Harvest States line elevators are included in this group. The remaining 29 percent of the elevators were investor-owned elevators, similar to 1989 results.

Elevators with a load-out capacity of 7 to 26 cars per day represented 48 percent of the elevators. And 84 percent of the elevators had a load-out capacity of 7 or more cars per day. The storage capacity of the responding elevators increased from 1989. Of the responding elevators, 82 percent had a storage capacity of 300,000 bushels or more.

Harvest States continues to be the largest purchaser of durum and HRS wheat. Benson-Quinn and Atwood Larson also continue as the second and third largest purchasers of durum and HRS wheat (Table 1).

Cargill and Continental lost market share in both durum and HRS wheat from investor-owned elevators, while Peavey gained in both commodities from the previous year. The three commission firms (Atwood Larson, Benson-Quinn, and Kellogg) and Peavey dominated the purchases from investor-owned elevators, comprising 79 percent and 76 percent of the market share for durum and HRS wheat, respectively. Harvest States purchased 48 percent of the durum and 46 percent of the HRS wheat from cooperative elevators. Benson-Quinn had the second largest market share in both commodities from cooperative elevators, with 22 percent of the durum and 20 percent of the HRS market share (Table 2).

Harvest States had roughly one-third of the business from elevators with storage capacity greater than 300,000 bushels. Benson-Quinn and Atwood Larson held the second and third largest market share in both commodities from

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elevators with storage capacity greater than 300,000 bushels except for HRS wheat from elevators with a storage capacity greater than one million bushels. Cargill and firms comprising the "Other" category each held 15 percent of the market share from elevators with a storage capacity greater than one million bushels (Table 3). The large percent of HRS wheat sold to firms in the "Other" category may be the result of larger elevators being able to sell wheat to firms that are not traditional outlets for grain.

Harvest States had the majority market share for all the different load-out capacities. Atwood Larson and Benson-Quinn usually had the next largest market share. Peavey and Kellogg had 19 percent of the durum and HRS, respectively, from elevators with a load-out capacity of 6 cars per day or less. Cargill and firms in the "Other" category had 15 and 13 percent market share, respectively, of the HRS wheat from elevators with a load-out capacity greater than 54 cars per day (Table 4).

Premiums and Discounts

The 1990 HRS wheat crop had fair quality characteristics compared to previous years. One noticeable difference from 1988 and 1989 is the lower protein level in the HRS wheat crop. Figure 1 shows the lower protein level in the 1990 HRS wheat crop compared to 1988 and 1989, and the lower protein level of the hard red winter (HRW) wheat crop from 1989. The protein premium increased over 1989 (Figure 2). Figures 3 to 5 show the discounts for selected grade factors over the years for both wheats.

Average premiums and discounts since 1984 are given in Table 5. All discounts for durum in 1990 are less than discounts since 1987. The premium for 16 percent HRS increased substantially over the previous two years, and the discount for 12 percent protein HRS wheat increased over the 1989's level, probably because the average protein levels was lower in both the HRS and HRW wheats this year.

Price adjustment averages for durum and HRS wheat for individual crop report districts (CRD-Figure 6) are presented in Table 6. CRD #4 tended to have lower discounts for durum. Premiums for 16 percent protein HRS wheat were lower for CRD #1, 4, and 7.

The premiums and discounts for durum and HRS wheat for both cooperatives and private elevators were similar to 1989 except for the 16 percent protein premium in HRS wheat. The private elevators offered a 41 cent premium compared to the 32 cent premium cooperative elevators offered (Table 7).

Premiums and discounts did not vary substantially based on load-out capacity, except for the 16 percent protein premium for HRS wheat. Elevators with a load-out capacity of 7 to 26 cars per day offered a higher premium for 16 percent protein in HRS wheat.

Elevators with competitors within 6 to 10 miles tended to have higher discounts for durum. Also, elevators that handle durum and have competition within 5 miles tend to have lower discounts than elevators with competition more than 10 miles away. Elevators that handled HRS wheat and had competition 6 to 10 miles away also tended to have higher discounts. They also had the highest premium for 16 percent protein HRS wheat.

Premiums for 16 percent protein HRS wheat were greater for elevators with storage capacity of 300,000 to 399,000 bushels and storage greater than one million bushels, and were 40 cents and 38 cents, respectively. Elevators with storage capacity of 99,000 bushels or less had the smallest premium for 16 percent protein HRS wheat, 27 cents.

Dockage Removal

About 70 percent of the wheat was cleaned before shipment in 1990. At harvest, managers considered wheat with a dockage level of 1.92 percent or less as clean and did not clean this wheat. After harvest, wheat with dockage levels

of 1.50 percent or less was considered clean. When wheat was cleaned it was cleaned to 0.82 percent and 0.70 percent dockage levels during harvest and post-harvest, respectively.

Two important variables affecting the economics of wheat cleaning are cost of cleaning and the price received for wheat screenings. The average cost of cleaning was 4.37 cents per bushel, and the average price received for screening was $29.54 per ton in 1990, virtually unchanged from 1989.

Summary and Conclusion

Premiums and discounts are dynamic with respect to location, time, and current and perceived market conditions. The 1990 HRS and HRW wheats protein levels fell from their 1988 and 1989 highs, and the protein premium for HRS wheat increased over the past year. Discounts for other factors generally have decreased (became less) since 1988.

TABLE 1. MARKET SHARE OF COMMISSION COMPANIES AND TRACK BUYERS BY RESPONDING ELEVATORS FOR DURUM AND HRS WHEAT (FALL, 1990)

Company	Durum	HRS Wheat
	percent	
Harvest States	35	34
Atwood-Larson	14	13
Benson-Quinn	20	19
Kellogg	7	7
Cargill	3	5
Peavey	10	10
Continental	2	2
International Multifoods	0	1
North Dakota State Mill	3	1
Others	6	8

SOURCE: Question 7, Grain Marketing Questionnaires, Fall 1990, NDSU, Dept. of Agr. Econ., Fargo.

Note: Percentages shown are not weighted by the amount of durum and HRS wheat each elevator handles and thus indicate the average among the elevators, not the amount of durum and HRS wheat each company handled in North Dakota.

TABLE 2. MARKET SHARE OF COMMISSION COMPANIES AND TRACK BUYERS BY ORGANIZATION FROM RESPONDING ELEVATORS FOR DURUM AND HRS WHEAT (FALL, 1990)

Commodity (Base Grade)	Company	Investor-Owned Firm	Cooperative
		percent	
Durum	Harvest States	3	48
	Atwood-Larson	25	9
	Benson-Quinn	15	22
	Kellogg	10	5
	Cargill	6	2
	Peavey	29	2
	Continental	2	2
	IMF	0	0
	ND State Mill	2	4
	Others	8	6
		100	100
HRS	Harvest States	4	46
	Atwood-Larson	18	11
	Benson-Quinn	18	20
	Kellogg	19	3
	Cargill	8	4
	Peavey	21	5
	Continental	1	3
	IMF	2	0
	Others	9	8
		100	100

SOURCE: Question 3 and 7, Grain Marketing Questionnaires, Fall 1990, NDSU, Dept. of Agr. Econ., Fargo.

TABLE 3. MARKET SHARE OF COMMISSION COMPANIES AND TRACK BUYERS BY SIZE OF ELEVATORS FOR DURUM AND HRS WHEAT (FALL, 1990)

Commodity (Base Grade)	Company	Elevator Size (By Bushels) 0 to 99,000	100,000 to 199,000	200,000 to 299,000	300,000 to 399,000	400,000 to 999,000	Over 1,000,000
		percent					
Durum	Harvest States	33	37	3	36	33	44
	Atwood-Larson	0	12	25	19	14	10
	Benson-Quinn	0	14	0	31	28	11
	Kellogg	33	0	48	4	1	7
	Cargill	0	0	0	2	1	10
	Peavey	33	29	25	0	6	6
	Continental	0	1	0	0	1	5
	IMF	0	0	0	0	0	0
	ND State Mill	0	2	0	0	7	2
	Other	0	4	0	8	9	5
HRS	Harvest States	25	60	15	35	31	36
	Atwood-Larson	15	1	15	12	17	8
	Benson-Quinn	0	20	0	21	29	6
	Kellogg	25	0	34	9	3	6
	Cargill	0	0	0	3	3	15
	Peavey	1	19	33	8	7	11
	Continental	0	0	0	0	5	2
	IMF	0	0	0	3	0	1
	Others	35	0	4	9	4	15

SOURCE: Question 6 and 7, Grain Marketing Questionnaires, Fall 1990, NDSU, Dept. of Agr. Econ., Fargo.

TABLE 4. MARKET SHARE COMMISSION COMPANIES AND TRACK BUYER BY LOAD-OUT CAPACITY FROM RESPONDING ELEVATOR FOR DURUM AND HRS WHEAT (FALL, 1990)

Commodity (Base Grade)	Company	Load-out Capacity: Less Than 6 Cars	7 To 26 Cars	27 To 54 Cars	Greater Than 54 Cars
		percent			
Durum	Harvest States	29	32	34	57
	Atwood-Larson	25	11	11	14
	Benson-Quinn	8	28	16	13
	Kellogg	11	7	6	1
	Cargill	0	1	8	7
	Peavey	19	10	7	0
	Continental	1	2	2	1
	IMF	0	0	0	0
	ND State Mill	0	2	9	1
	Other	7	6	7	7
HRS	Harvest States	29	31	36	49
	Atwood-Larson	15	10	20	8
	Benson-Quinn	8	23	21	10
	Kellogg	19	7	5	0
	Cargill	1	3	8	15
	Peavey	9	12	8	2
	Continental	0	4	2	2
	IMF	1	1	0	0
	Others	18	9	1	13

*Totals may not add to 100 due to rounding.

SOURCE: Question 4 and 7, Grain Marketing Questionnaires, Fall 1990, NDSU, Dept. of Agr. Econ., Fargo.

TABLE 5. AVERAGE PRICE ADJUSTMENTS FOR EACH FACTOR AMONG RESPONDING NORTH DAKOTA COUNTRY ELEVATORS (FALL OF 1984, 1985, 1986, 1987, 1988, 1989, AND 1990)

Commodity (Base Grade)	Factor	1984	1985	1986	1987	1988	1989	1990
		¢/bu						
Durum #1 HAD	58 lbs test weight	-2.2	-2.2	-2.7	-7.0	-10.7	-6.4	-4.5
	14.5% moisture	-6.0	-7.6	-7.2	-7.3	-7.8	-7.1	-5.2
	Amber durum	-5.7	-16.7	-21.0	-22.6	-26.8	-15.3	-10.2
	4% damaged kernels	-6.0	-6.9	-8.4	-8.9	-12.8	-10.7	-8.4
	1% foreign material	-2.8	-1.9	-1.9	-2.4	-2.9	-3.2	-2.0
	5% shrunken & broken kernels	-6.6	-3.9	-5.0	-4.8	-5.9	-5.6	-3.9
	2% contrasting classes	-2.0	-4.4	-4.8	-5.0	-6.6	-5.5	-4.9
	5% wheat of other classes	--	-9.9	-11.7	-11.8	-16.2	-12.4	-9.4
HRS #1 DNS 14% Protein	57 lbs test weight	-1.9	-1.8	-2.9	-3.2	-3.6	-2.5	-2.2
	14.5% moisture	-5.9	-6.8	-6.5	-7.5	-5.7	-5.9	-5.0
	16% protein	41.0	63.4	62.6	86.8	9.7	0.7	34.6
	12% protein	-38.0	-67.4	-43.9	-38.5	-12.6	-1.5	-10.0
	4% damaged kernels	-2.0	-6.6	-8.9	-8.4	-10.5	-9.5	-9.4
	1% foreign material	-1.4	-1.3	-1.7	-2.0	-1.8	-2.0	-1.6
	5% shrunken & broken kernels	-2.2	-3.0	-4.2	-4.1	-4.7	-4.1	-3.0
	2% contrasting classes	-1.6	-3.2	-3.5	-3.7	-4.6	-3.6	-2.8
	5% wheat of other classes	--	-7.0	-8.6	-9.1	-9.6	-8.1	-6.3

SOURCE: Questions 16 and 18, from 1984-89 Pricing and Marketing Practices for North Dakota Durum and HRS Wheat Crop, and the Grain Marketing Questionnaire, Fall 1990

TABLE 6. PRICE ADJUSTMENT AVERAGES FOR DURUM AND HRS WHEAT AMONG ELEVATORS OF SPECIFIED REGIONS IN NORTH DAKOTA (FALL 1990)

Commodity (Base Grade)	Company	Region 1	2	3	4	5	6	7	8	9
		¢/bu								
Durum #1 HAD	58 lbs test weight	-5	-5	-5	-6	-5	-3	-5	-4	-4
	14.5% moisture	-6	-4	-6	-6	-6	-4	-4	-3	-5
	Amber durum	-8	-12	-12	-5	-10	-9	-15	-14	-9
	4% damaged kernels	-8	-7	-8	-3	-8	-8	-10	-8	-10
	1% foreign material	-2	-2	-2	-1	-3	-2	-1	-2	-2
	5% shrunken & broken kernels	-2	-4	-4	-2	-4	-3	-2	-7	-5
	2% contrasting classes	-6	-6	-4	-3	-4	-4	-7	-6	-6
	5% wheat of other classes	-9	-9	-7	-8	-9	-6	-11	-9	-15
HRS #1 DNS 14% Protein	57 lbs test weight	-2	-3	-3	-2	-2	-2	-2	-2	-2
	14.5% moisture	-5	-4	-6	-3	-5	-5	-4	-3	-5
	16% protein	12	24	37	17	42	45	22	36	40
	12% protein	-11	-8	-10	-8	-9	-10	-10	-14	-10
	4% damaged kernels	-8	-8	-8	-7	-15	-7	-12	-9	-10
	1% foreign material	-2	-1	-2	-1	-2	-2	-1	-3	-1
	5% shrunken & broken kernels	-1	-4	-3	-1	-4	-3	-2	-4	-4
	2% contrasting classes	-6	-5	-3	-2	-3	-1	-2	-2	-2
	5% wheat of other classes	-8	-12	-6	-4	-6	-4	-6	-6	-7

SOURCE: Questions 2, 16, and 18, Grain Marketing Questionnaires, Fall 1990, NDSU, Dept. of Agr. Econ., Fargo.

TABLE 7. PRICE ADJUSTMENT AVERAGES FOR DURUM AND HRS WHEAT AMONG SELECTED TYPES OF ELEVATOR STRUCTURE ORGANIZATIONS (FALL, 1990)

Commodity (Base Grade)	Factor	Cooperative	Private
		¢/bu.	
Durum #1 HAD	58 lbs. test weight	- 5	-4
	14.5% moisture	- 5	-5
	Amber durum	-9	-13
	4% damaged kernels	-8	-9
	1% foreign material	-2	-2
	5% shrunken and broken kernels	-3	-6
	2% contrasting classes	-5	-4
	5% wheat of other classes	-10	-9
HRS #1 DNS 14% Protein	57 lbs. test weight	-2	-2
	14.5% moisture	-5	-4
	16% protein	32	41
	12% protein	-10	-11
	4% damaged kernels	-10	-8
	1% foreign material	-2	-1
	5% shrunken and broken kernels	-3	-4
	2% contrasting classes	-3	-2
	5% wheat of other classes	-7	-5

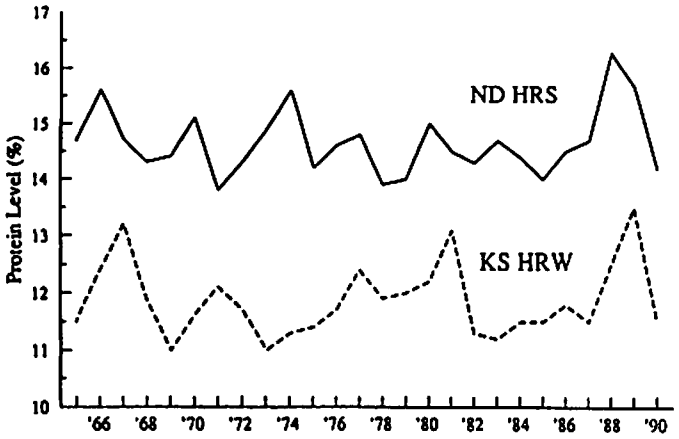


Figure 1. HRS and HRW Average Protein Level, on a 12% Moisture Basis, North Dakota and Kansas

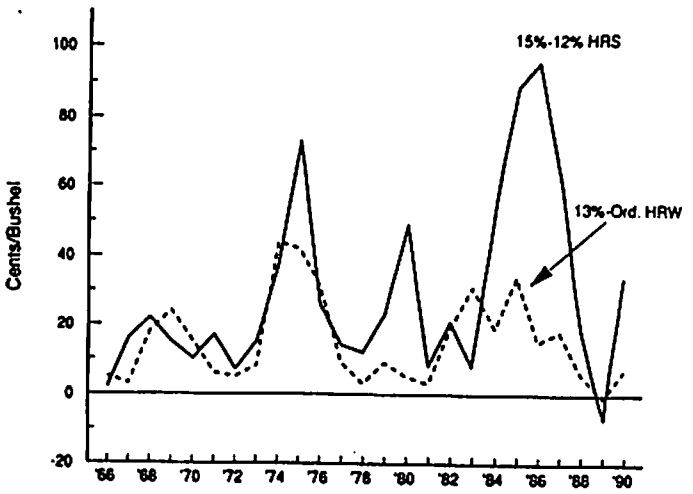


Figure 2. HRS and HRW Market Protein Premium

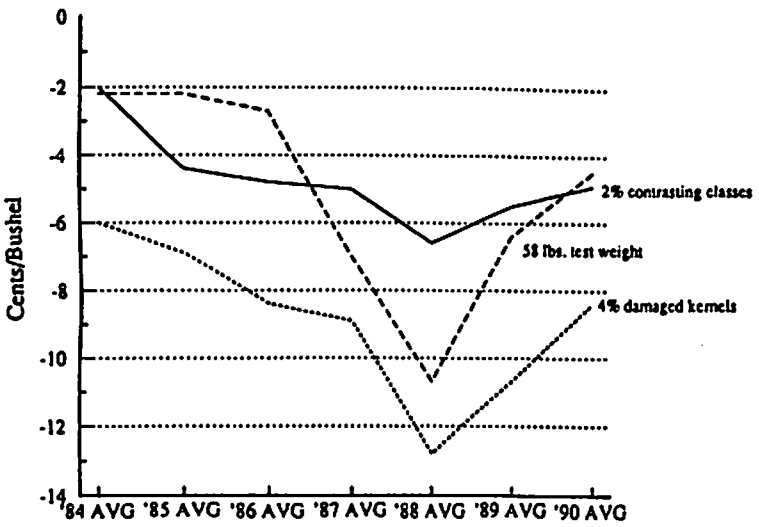
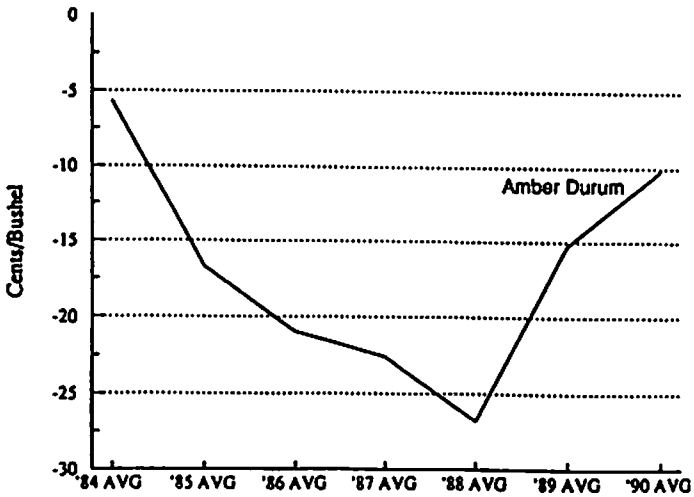


Figure 3. Average Price Adjustments Among North Dakota Country Elevators, Durum (#1 HAD)



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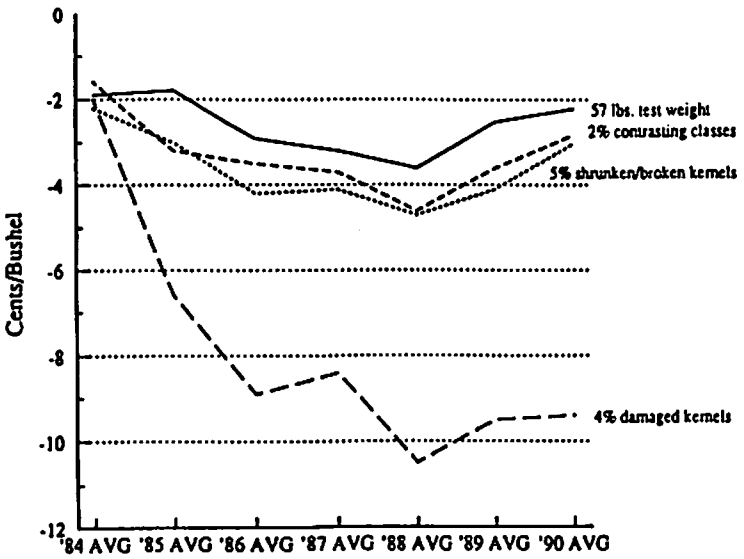

Figure 5. Average Price Adjustments Among North Dakota Country Elevators, HRS (#1 DNS) 14% Protein

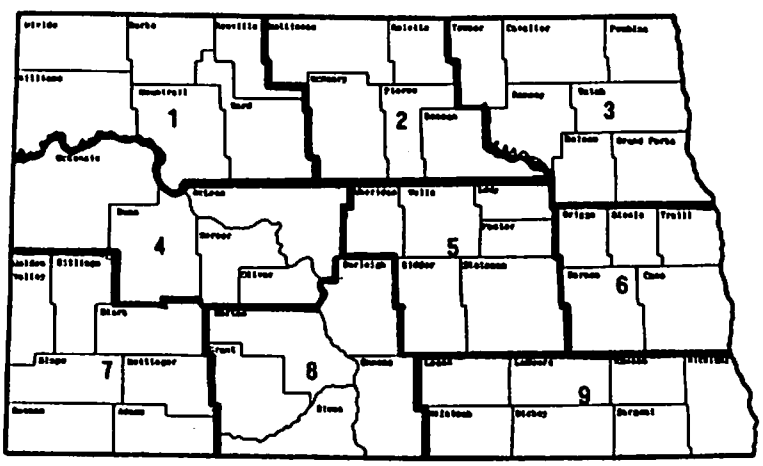

Figure 6. Nine Regions Used to Divide Responding Elevators by Location in the State

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