



# HARD RED SPRING WHEAT OR DURUM WHEAT?

WHICH TO PLANT IN 1964?

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CIRCULAR A-442

JANUARY 19

**D**urum outyielded hard red spring wheat (HRS) quite generally in 1963 and to a lesser degree in much of the state in 1962. Selkirk, especially, was low in test weight and yield in 1962. This was also true of some other HRS varieties. Growers in areas where both HRS and durum are grown are wondering if they should change their HRS varieties or increase their durum acreage in 1964.

Before making any major shifts between durum and HRS wheat acreages, consider all the facts carefully.

## Durum vs HRS Wheat Yield Comparisons

Table 1 shows the comparative statewide yield estimates of durum and HRS since 1958. These figures indicate a distinct yield advantage for durum in 3 of the past 6 years and especially in 1962 and 1963.

Experiment Station data also indicate the strong yield capacity of the durum varieties.

Table 2 indicates the high yield capacity of the new durums released by the North Dakota Agricultural Experiment Station. Langdon and Ramsey released in 1956 were rapidly accepted by growers. The Crop Reporting Service found these two varieties occupied 93.5 per cent of the durum acreage in 1959. Wells and Lakota, released in 1960, now occupy over 2/3 of the durum acreage. Durum has tended to outyield HRS for many years, except the early 1950's when durum varieties then available were susceptible to rust.

Selkirk HRS was released in 1954 and occupied 67.5 per cent of the HRS wheat acreage in 1959, according to the Crop Reporting Service. Newer varieties are now available:

Pembina and Canthatch were released in 1960 and Justin in 1962. A small seed increase of a new HRS variety Crim was made in 1963 and further seed increase is being made in 1964. Since 1960, Selkirk acreage declined each year in favor of these newer varieties and likely will decline further in 1964.

TABLE 1 - STATE AVERAGE YIELDS\*

	1958	1959	1960	1961	1962	1963
	Bushels per acre					
Hard red spring wheat	23	14.5	19.5	11.0	27.5	23.0
Durum	24	18.0	21.0	11.5	31.0	27.0

\*Data from USDA

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TABLE 2 - DURUM AND HARD RED SPRING WHEAT YIELDS\*

	1957-63 Fargo <sup>a/</sup>	1958-63 Edgeley <sup>b/</sup>	1958-63 Minot	1957-63 Langdon <sup>c/</sup>	24 Sta. Yr. Average
<u>Durum</u>					
Langdon	36.7	26.0	34.1	44.2	36.0
Ramsey	32.8	-----	31.7	43.0	-----
Wells	42.5	28.5	35.8	48.9	39.7
Lakota	42.1	25.6	34.9	48.0	38.5
<u>Hard red spring wheat</u>					
Selkirk	31.8	23.2	31.1	41.2	32.5

\*Data from North Dakota Agricultural Experiment Station

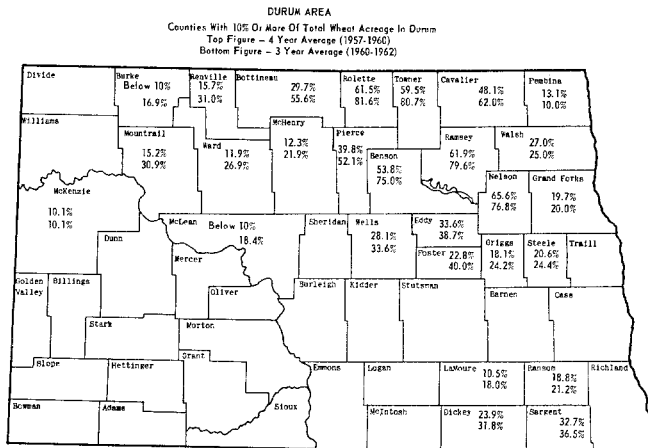
<sup>a/</sup>No data 1962    <sup>b/</sup>1960 omitted    <sup>c/</sup>1959 omitted

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Justin is distinctly superior to Selkirk in stem rust resistance and baking quality. It also is better in test weight and straw strength. It appears the largest shift in HRS varieties for 1964 will be away from Selkirk and towards Justin.

#### Where Durum Is Grown

The map shows counties with more than 10 per cent of the total wheat acreage planted to durum during the periods 1957 to 1960 and for 1960 to 1962. Durum production tends to stay in the same general area of the state even though acreage is increased. The heart of the "durum area" is where over 50 per cent of the wheat acreage is durum.



#### North Dakota Is A Major Producer Of Both High Quality HRS and Durum Wheat

For many years, North Dakota has been the major producer of both high quality HRS wheat and high quality durum. The following tables show North Dakota production trends, domestic use, annual carryover and per cent of total U. S. production of HRS and durum.

The acreage of HRS has declined (tables 3 and 4) steadily in the past 10 years and is now less than half that of 10 years ago. Durum acreage now, however, is about the same as 10 years ago. Decline of HRS acreage is due to acreage control programs, northward expansion of winter wheat acres especially in South Dakota and Montana, and to a shift towards a larger percentage of durum in the "durum area" of North Dakota. Increased yield per acre has tended to offset acreage reduction in HRS and to build a larger carryover of durum, in spite of increased domestic consumption of durum.

#### What Holds Durum Acreage Down

The "durum area" has the right combination of climate and soil for quality durum production. Durum grown west of this area is more likely to be too high in protein while durum grown east and south of this area is more likely to lack good amber color. These with other quality defects are regularly reflected in local cash market discounts and tend to discourage durum growers.

TABLE 3 - U. S. DURUM ACRES, PRODUCTION, DOMESTIC USE\* AND CARRYOVER IN RECENT YEARS

Acres Planted In U. S.		N. Dak. % of U.S. Total	Production Bu.	Domestic Use (a)	Exports (a)	Carryover (a)
Year	(000)		(Thousand Bushels)			
1952	2,328		22,493	28,311	3,000	6,842
1953	2,103		12,967	15,805	-----	4,852
1957	2,370		39,935	26,649	1,000	27,000
1958	938		21,669	26,000	1,000	22,000
1962	2,478		72,000	32,000	4,000	41,000
1963	2,182		51,000	28,000	8,000	59,000

\*Data from October, 1963 Wheat Situation and USDA September Crop Report.

(a) To July 1, the following year. <sup>1</sup>/Estimated

TABLE 4 - HARD RED SPRING, PRODUCTION DOMESTIC USE\* AND CARRYOVER IN RECENT YEARS

Acres Planted In U. S.		N. Dak. % of U.S. Total	Production Bu.	Domestic Use (a)	Exports (a)	Carryover (a)
Year	000 Omitted		mil. bu.	mil. bu.	mil. bu.	mil. bu.
1952	19,320	45	181	175	17	128
1953	19,741	43	217	145	11	195
1957	10,053	50	169	135	38	203
1958	11,405	50	233	147	46	251
1962	8,012	48	176	138	39	192
1963 <sup>1</sup>	8,920	47	165	140	60	162

\*Data from October, 1963 Wheat Situation and USDA Agricultural Statistics.

(a) To July 1, the following year. <sup>1</sup>/Estimated

Durum production costs also are slightly higher than for HRS due largely to higher per acre seed cost and greater care required in threshing and handling. Quality durum production is a specialized production business.

Durum is more susceptible to head blights and black point than HRS and this can result in serious market discount. Ergot, widespread in 1962 and more localized in 1963, also attacks durum more than HRS. The variety Justin, however, appears to be more susceptible to ergot than other HRS wheat varieties.

The most commonly grown HRS and durum varieties have sufficient stem rust resistance to escape damage the past two years. This has not been true of winter wheat varieties. The following table may be helpful in variety selection for planting.

Variety Rust Resistance		
HRS	Leaf rust	Stem rust
Lee	S	S
Selkirk	S	R
Pembina	S	R
Canthatch	VS	MR
Justin	MR	R
Durum		
Langdon	R	S
Ramsey	R	MS
Wells	R	R
Lakota	R	R

#### THE RELATIVE SUPPLY SITUATION OF DURUM, HARD RED SPRING, HARD RED WINTER AND TOTAL WHEAT 1963-64 (PRELIMINARY)

The figures in table 5 show that expected domestic and export disappearance of total wheat and hard red winter wheat will greatly exceed the 1963 production. The expected increase in exports of HRS production was 35 million bushels less than expected disappearance while durum production was 50 per cent greater than expected disappearance. By June 30, 1964, estimated

carryover of HRS will be less than one year's normal needs, while durum carryover will be more than 1-1/2 year's normal needs. This situation indicates possible price pressure on both classes of wheat but more so on durum than HRS. Any great shift to more durum acres and fewer HRS acres would only aggravate the durum supply and price situation.

Continued surplus production and buildup of stocks are more serious for durum than for HRS because of the limited uses and markets for durum. Durum exports are limited and it has not been used in the "Food for Peace" export program. Continual buildup of durum stocks may bring on a special "control program" for this crop if it is to continue to receive price supports.

#### Market Outlook for 1964 Crop

With the present surplus carryover of both durum and hard red spring wheat, the basic 1964 prices largely depend on federal price support.

The federal price supports for 1963 tend to set the cash price for all classes of wheat through June, 1964, because practically all of the 1963 crop was eligible for loan. However, 1964 crop prices will be affected by the price support program then in operation. Although the wheat program for 1964 can be changed by Congress, it is assumed here that the program as included under the Agricultural Act will be effective in 1964.

Under this present program, the price of both durum and HRS will be supported at 50 per cent of parity. As a national average, this will be about \$1.25 per bushel. The basic price support for central North Dakota is on par with the national average. Supports are based on No. 1 HRS and No. 1 durum. Premiums for protein and/or sedimentation for HRS and for classes amber and hard amber durum were not established nor announced when this information was prepared.

The price difference between hard red spring and durum will depend on the supply and demand situation and on the price support premiums. If premiums above the basic support price are similar to 1963, farmers can

TABLE 5 - ESTIMATED U. S. SUPPLY AND DISTRIBUTION\*

	Hard red spring	Durum	Hard red winter	Total U. S. wheat
	mil. bu.	mil. bu.	mil. bu.	mil. bu.
Carryover, July 1, 1963	192	41	938	1,189
Production	165	51	536	1,133
Imports	5			5
Supply	362	92	1,474	2,327
Exports	60	8	720	1,000**
Domestic disappearance	140	28	259	602
Carryover, June 30, 1964	162	56	495	725
% Exports for dollars (5 yr. ave.)	76%	100%	21%	32%

\*"Wheat Situation". August, 1963 (Adjusted)

\*\*Includes estimate of 200 mil. bushels of commercial sales to Russia and other Eastern Bloc countries.

expect 10 to 24 cents above the basic support price for hard red spring and perhaps slightly more for hard amber durum. For discussion purposes, an average premium on both wheats of 15 cents per bushel is assumed. Demand for wheat is expected to remain relatively stable, thus the price outlook is estimated for two possible supply situations.

Possible Situation I. Production of HRS and durum in 1964 exceeds normal annual disappearance, and only one-third to one-half of the crop will be eligible for loan because farmers overplant their wheat allotments. In this case, prices of HRS and durum will be near the support price of \$1.25 plus premiums or about \$1.40.

Possible Situation II. A high proportion of growers stay within their 1964 acreage allotments and yields are normal but growers shift to more durum acres. Durum production would exceed normal disappearance but HRS production would be under expected disappearance. In this case, durum prices would be similar to Situation I or about \$1.40. HRS wheat prices, however, will tend higher than the support prices because the shortage would have to come from CCC stocks, and the cost of CCC stocks would then govern price. Under law, CCC stocks can be purchased at the support price x 105 per cent plus carrying charges. Therefore, the HRS price may be 10 to 20 cents above the support price, or \$1.50 to \$1.60. Thus, look for a cash market favoring HRS over durum in 1964.

Another consideration is that any export expansion more likely will occur in HRS than in durum. This possibility would favor HRS prices, even if yield and production are above expectations.

With durum, above normal yields, more acres and low compliance with allotments could result in the support price being ineffective in maintaining the cash price at support level.

In summary, the 1964 prices for durum likely will tend to be near its support price level. HRS prices stand some chance of being 10 to 20 cents per bushel above the support price, if the production is similar to that in 1963, or if exports expand.

#### **Summary**

1. Durum varieties now available out yield the HRS wheat varieties, on the average.
2. Experience indicates that consistent quality durum production and premium markets are more dependable in the traditional "durum area".

3. Durum produced west of the "durum area" is likely to be too high in protein while durum produced east and south of the area is likely to have poor color. Both can cause market discounts to the grower.

4. Durum production costs per acre tend to run higher than HRS, and quality durum production is a specialized business requiring know-how and experience.

5. Head blights and black point were rather serious diseases on durum in 1960 and again in some areas in 1962. The effect of these diseases on test weight and kernel color can cause a serious market discount.

6. Durum is a specialty class of wheat used only by the macaroni industry. Therefore, it has a limited market outlet. Domestic consumption is increasing slowly and export demand is normally very limited.

7. North Dakota also is the major producer of high quality HRS wheat – a specialized class of wheat used largely for blending into bread making flour. Seventy-five to 80 per cent of the total HRS production is sold in the domestic market.

8. HRS wheat acres in U. S. have declined steadily over the past 10 years in the U. S., while durum acreage is about the same as 10 years ago.

9. The June 30, 1964, estimated carryover indicates possible price pressure on both HRS and durum but more so on durum than HRS. Any great shift to more durum acres and fewer HRS acres would only aggravate the durum supply and price situation.

10. If export expansion is sufficient to affect prices, it is more likely to be in HRS than in durum.

11. 1963 was an unfavorable year for HRS varieties, especially Selkirk. Leaf rust came early and was severe. In many cases root rots were a problem and the high temperatures (and drouth in some areas) affected HRS more than durum.

12. The leading HRS and durum varieties have good stem rust protection. HRS varieties are less resistant to leaf rust. Durum is more susceptible to ergot and blights.

13. Established HRS growers may want to change varieties rather than switch to durum.

14. In making your plans for 1964, do not base all your conclusions on 1963 experience only.