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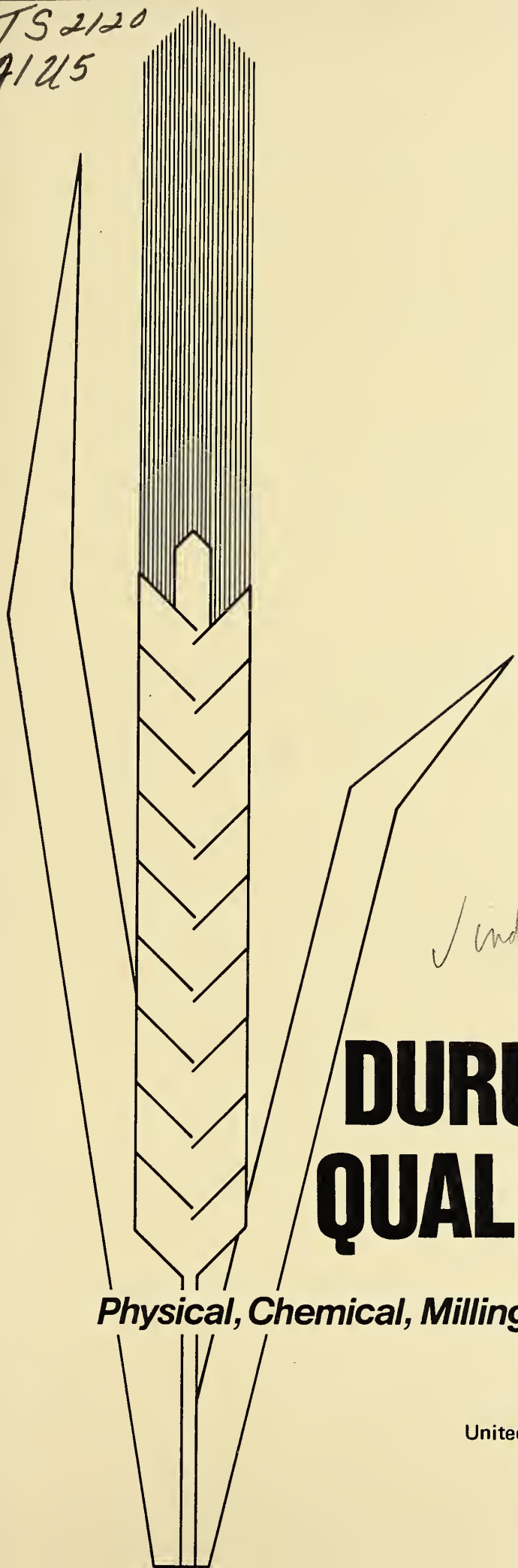


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1983 CROP

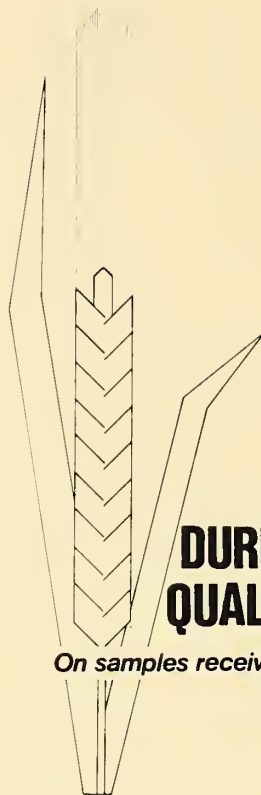


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27 p. + unpag'd tables*

DURUM WHEAT QUALITY REPORT

Physical, Chemical, Milling, and Spaghetti Characteristics

United States Department of Agriculture
Agricultural Research Service
North Central Region



DURUM WHEAT QUALITY REPORT

On samples received from the 1983 crop

Source:

Spring and Durum Wheat Quality Laboratory
USDA, Agricultural Research Service
Cereal Chemistry & Technology, N.D.S.U.
Fargo, North Dakota 58105

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
in cooperation with
STATE AGRICULTURAL EXPERIMENT STATIONS

QUALITY EVALUATION OF DURUM WHEAT VARIETIES

1983 CRO1/

by

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1/ This is a progress report of cooperative investigations containing some results that have not been sufficiently confirmed to justify general release; interpretations may be modified with additional experimentation. Confirmed results will be published through established channels. The report is primarily a tool for use of cooperators and their official staffs and to those persons having direct and special interest in the development of agricultural research programs.

This report was compiled by the Agricultural Research Service, U. S. Department of Agriculture. Special acknowledgment is made to the North Dakota State University for their facilities and services provided in support of these studies. The report is not intended for publication and should not be referred to in literature citations or quoted in publicity or advertising. Use of the data may be granted for certain purposes upon written request to the agency or agencies involved. Cooperators submitting samples for analysis have been given analytical data on their samples prior to release of this report.

2/ Hard Red Spring & Durum Wheat Quality Lab., NDSU.

3/ Dept. of Cereal Chemistry & Technology, NDSU.

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INTRODUCTION

The twentieth Durum Wheat Quality Report contains data for the 1983 crop. Samples of standard varieties and new strains of durum wheat grown in cooperative experiments in the durum wheat regions of the United States^{4/} were milled and evaluated by the Hard Red Spring and Durum Wheat Quality Laboratory in cooperation with the Department of Cereal Chemistry and Technology on the campus of North Dakota State University at Fargo, ND. Methods and techniques are described in detail in the text of the report.

All samples received that were large enough to mill on the Buhler experimental mill were processed into spaghetti using the macro spaghetti processing method as described on page 12. A five pound wheat sample is required for the above method. All other samples were milled using the micro procedure and were not processed into spaghetti. Those samples having acceptable kernel characteristics and dust color score, if possible, should be included for macro processing the following year.

The purpose of this report is to make available to cooperators the quality data on standard varieties and new selections of durum wheat from the 1983 crop.

^{4/} Busch, R.H. and Cantrell, R.G. Wheat varieties grown in cooperative plot and nursery experiments in the spring wheat region in 1983. Agricultural Research Service, U.S. Department of Agriculture.

SOURCE OF THE 1983 CROP SAMPLES

Seven hundred sixty-two durum samples were received from 20 stations and eight states (South Dakota, North Dakota, Minnesota, Montana, Washington, Arizona, California and Colorado), also from Bari, Italy for quality evaluation. However, data on 31 of these are not included in this report, because this information was of interest to plant breeders at specific experiment stations only.

UNIFORM REGIONAL NURSERY - 196

Selby and Day County	South Dakota
Williston and Carrington	North Dakota
Crookston and Morris	Minnesota
Sidney	Montana

WESTERN REGIONAL DURUM WHEAT TESTS - 94

Davis, Delta and Imperial Valley	California
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FIELD PLOTS - 31

Pinal County, Yuma County and Mesa	Arizona
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WASHINGTON DURUM NURSERY - 33

Royal Slope	Washington
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ADVANCED NURSERY - 21

Davis	California
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PRELIMINARY NURSERY - 331

Imperial Valley and Tulelake	California
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INTERNATIONAL DURUM YIELD NURSERY - 16

Davis	California
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ELITE DURUM YIELD TRIAL - 9

Davis	California
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1983 UNIFORM REGIONAL DURUM NURSERY

LIST OF ENTRIES

Entry No.	Entry	Sel. or P.I. No.	Year Entered	Origin
1	Mindum	5296	1929	Minnesota
2	Rolette	D6517	1968	ND-USDA
3	Ward	D6674	1969	ND-USDA
4	Crosby	D6715	1970	ND-USDA
5	Rugby	D6722	1970	ND-USDA
6	Cando	D7057*	1972	ND-USDA
7	Coulter	DT411	1974	AC, Winnipeg
8	Vic	D74112	1976	ND-USDA
9	Lloyd	D771*	1978	ND-USDA
10	Medora	DT433	1980	AC, Winnipeg
11	72114/Ed	D7733	1981	North Dakota
12	71110/Ed	D7798	1981	North Dakota
13	7224/Crosby	D77200*	1981	North Dakota
14	7456/Vic	D793	1981	North Dakota
15	Wsc/Hc	DT371	1982	Univ. of Sask.
16	7224/Cd	D78127*	1982	North Dakota
17	74111/Cd	D78177*	1982	North Dakota
18	77204/7618	D804*	1982	North Dakota
19	7224/Vic	D79168*	1983	North Dakota
20	Ed/Wkm	D79120	1983	North Dakota
21	Ed/Wkm	D79122	1983	North Dakota
22	DT427/Vic	D79103	1983	North Dakota
23	74111/Cd	D79209*	1983	North Dakota
24	764/73121	D79104	1983	North Dakota
25	7463/74110	D7983	1983	North Dakota
26	7456/Vic	D7925	1983	North Dakota
27	7507/Vic	D7958	1983	North Dakota
28	SC6962/SC6965- 494-1	DT375	1983	AC, Swift Current

* Semidwarf

WESTERN REGIONAL DURUM

LIST OF ENTRIES

Mexicali 75	D8204
Modoc	D8209
Njoro 231	D8257
Ward	TL73-16
Westbred 881	TL73-457
Yavaros	TL73-468
Yecora Rojo	TL73-471
D7911	TL73-506
D8018	TL74-30
D8019	TL75-409
D8027	UC-482
D8042	UC-512
D8055	UC-513
D8056	UC-514
D8057	UC-517
D8118	UC-518
D8126	UC-559
D8128	UC-560
D8129	WDE-8010

METHODS

The methods used in the testing of the samples were essentially the same as given in the last report.

Briefly, the following methods and terminologies were applied:

Test Weight Per Bushel - The weight per Winchester bushel of dockage-free wheat.

Thousand Kernel Weight - The 1000 kernel weight was determined by counting the number of kernels in a 10 g sample of cleaned, picked wheat on a Seedburo seed counter^{5/}.

Kernel Size - The percentage of the size of the kernels [large, medium, and small] was determined on a wheat sizer as described by Shuey^{6/}.

The sieves of the sizer were clothed as follows:

Top Sieve - Tyler # 7 with 2.92 mm opening
Middle Sieve - Tyler # 9 with 2.24 mm opening
Bottom Sieve - Tyler #12 with 1.65 mm opening

Protein Content - The protein (14% m.b.) was calculated by multiplying the percent nitrogen, as determined by the standard Kjeldahl procedure, by the factor of 5.7.

Milling - The samples were cleaned by passing the wheat over an Emerson kicker and dockage tester and through a modified Forster scourer Model 6. The clean, dry wheat was tempered in three stages: first to 12.5% moisture at least 72 hours prior to the second stage which is to add an additional 2.0% for 18 hours to give a cumulative moisture of 14.5%, then a final temper of 3.0%, 45 minutes prior to milling.

^{5/} Mention of a trademark name or proprietary product does not constitute a guarantee or warranty of the product by the U. S. Department of Agriculture, and does not imply its approval to the exclusion of other products that may also be suitable.

^{6/} Shuey, William C. A wheat sizing technique for predicting flour milling yield. Cereal Sci. Today 5: 71 (1960).

The field plot and large advanced and special yield nursery samples were milled on a Buhler experimental mill specially designed for milling durum wheat. The mill is equipped with corrugated rolls throughout and the semolina purified on a Miag laboratory purifier. All of the stock is handled pneumatically. The mill flow is shown on page 9. The purified semolina is used in testing the quality of semolina. The semolina extraction was calculated on a total products basis.

The small samples were milled according to the method of Vasiljevic et al 7/. The flow diagram of this system is shown on page 10. Extraction is determined on a clean, dry basis.

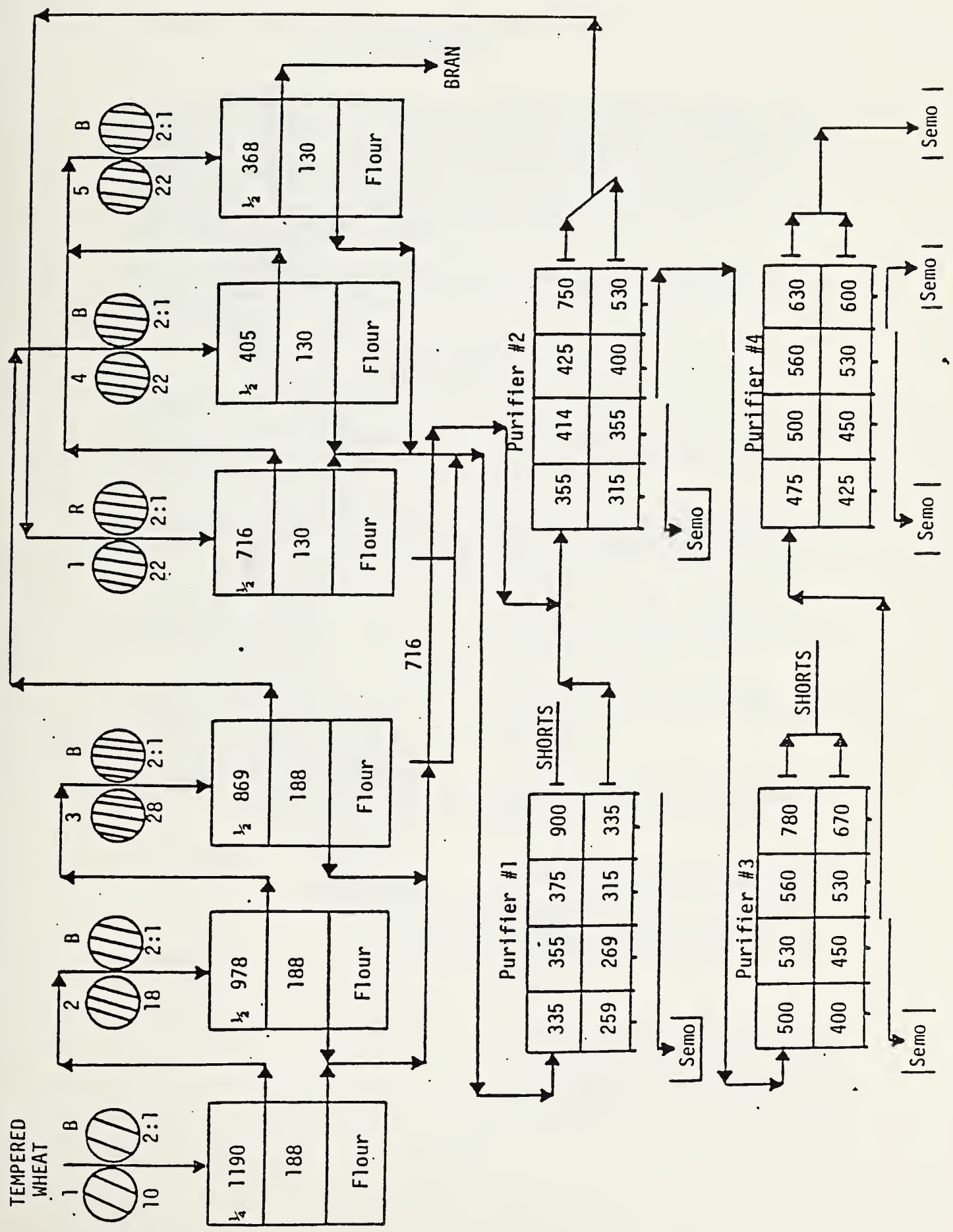
Semolina Extraction - For the macro procedure the percent semolina is calculated on a total products basis. For the micro procedure the extraction is calculated on cleaned wheat to mill.

Speck Count - The number of specks in three different one-inch square areas of semolina enclosed by a special glass and frame were counted. Any materials other than pure endosperm chunks, such as bran particles, etc. were considered specks. The average of three readings was converted to the number of specks per 10 sq in (speck count). Speck count is done only on the macro milled samples.

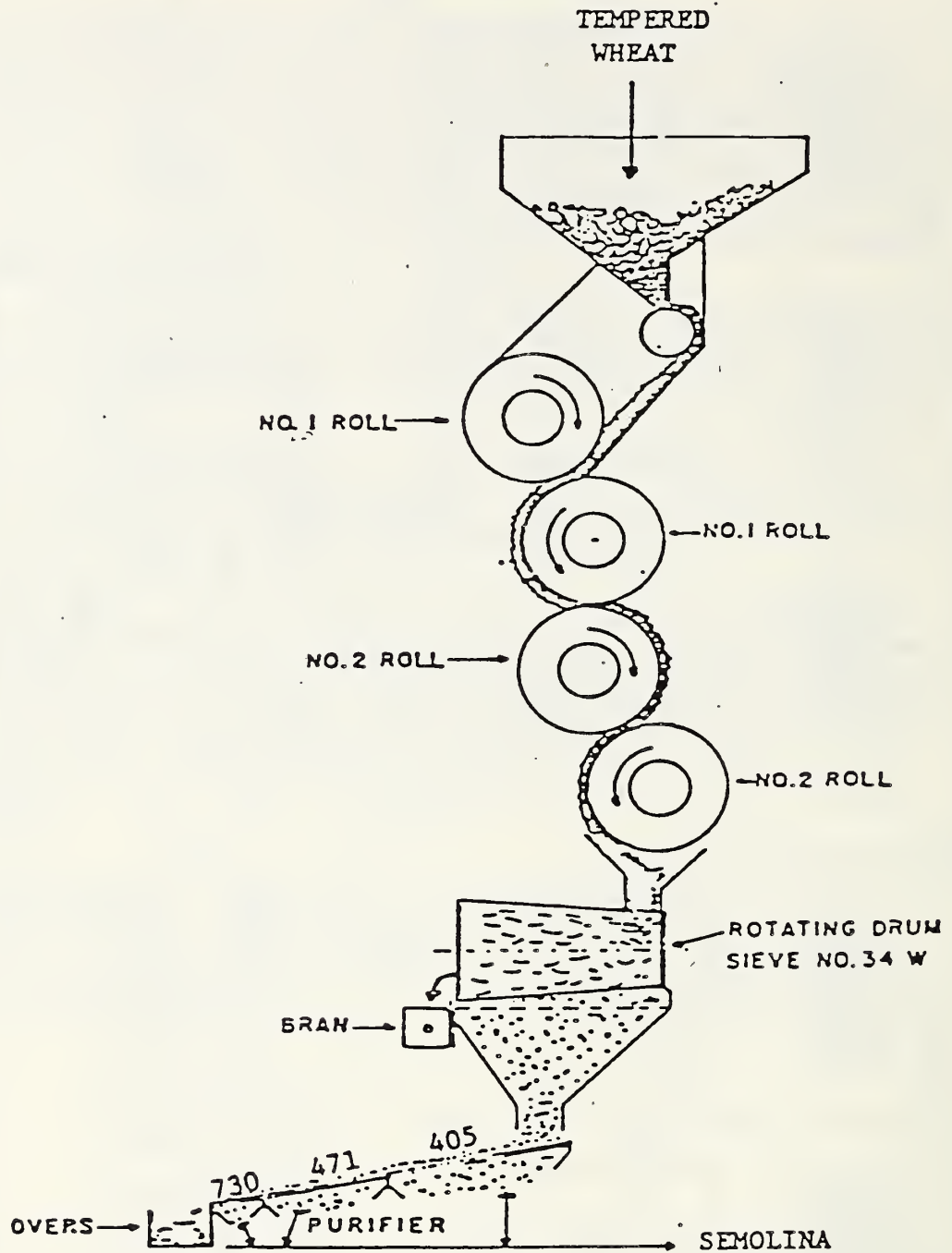
Color Score - The color of the spaghetti or semolina has been generally accepted as the most important single grading factor. A deep amber or golden color is the most preferable. The amount of yellow pigmentation determines the color.

7/ Vasiljevic, S., Banasik, O.J. and Shuey, W.C. A micro unit for producing durum semolina. Cereal Chem. 54: 397 (1977).

MACRO PROCEDURE



FLOW DIAGRAM FOR SMALL DURUM WHEAT SAMPLES MICRO PROCEDURE



Samples which have a color rating 1.5 point below the standard spaghetti score or 15 points below the standard semolina color score are unsatisfactory. It is possible that the average color score for a crop year may be higher or lower than average; therefore, this would be taken into consideration when giving the overall rating of a variety over a number of years.

The grading system shown below has been adopted for scoring the semolina color and spaghetti relative to the standard color score.

COLOR SCORE

<u>Semolina</u>	<u>Spaghetti</u>	<u>Description</u>
15 above	1.5 above	Much deeper and intense yellow pigmentation than standard
10 above	1.0 above	Deeper and more intense yellow pigmentation than standard
5 above	0.5 above	Slightly deeper and more intense yellow pigmentation than standard
Equal to Standard	Equal to Standard	Standard quality, depth and intensity of yellow pigmentation
5 below	0.5 below	Slightly less depth and intensity, but sufficient quantity of pigmentation
10 below	1.0 below	Slightly less quantity as well as depth and intensity of pigmentation than the standard, but still sufficient to be rated satisfactory on the basis of color
15 below	1.5 below	Sufficiently less quantity of yellow pigmentation than the standard to give a pale yellow color and graded unsatisfactory for color score.

Semolina Color Score - The semolina color score was determined by using Model XL-10 Gardner digital color difference meter. The instrument was calibrated using a yellow standard tile (L = 82.5, a = -3.6 and b = +25.2). A sample of semolina (3/4-inch deep) is placed in a sample cup for an Agtron reflectance color meter. After the first reading has been taken, the sample is turned 90 degrees and a second reading is taken and the two readings averaged. The "b" color value is converted to a color score ranging from 1 to 14, with 14 being a deep yellow and the most desirable color. In this report, the semolina color score, reported as "DU" in the tables, is multiplied by a factor of 10.

Spaghetti Color - The spaghetti color scores were determined on a Model D25 Hunter color difference meter equipped with a D25A optical unit. The specimen area (2 in diameter) was covered with straight spaghetti strands and readings were taken against a black background with 0% reflectance. Color difference values (L%, a% and b%) were measured for all the spaghetti samples by the method of Walsh, Gilles and Shuey^{8/}. A uniform chromaticity chart was used for determining spaghetti color scores.

MACRO Spaghetti Processing - Spaghetti was processed on a semi-commercial scale pasta extruder (DEMACO). The control as well as all samples was processed with the following extruding conditions.

Temperature 49.5°C
Rate 12 rpm
Absorption 31.5%
Vacuum 18 in Hg

These were the optimum conditions for processing spaghetti.

^{8/} Walsh, D. E., Gilles, K. A. and Shuey, W. C. Color determination of spaghetti by the tristimulus method. Cereal Chem. 46: 7 (1969).

To process the spaghetti, a 1000 g batch was premixed by slowly adding the water and mixing at a slow speed for approximately 30 seconds and high speed for 10 seconds, then add the remainder of the water at slow speed in a Hobart C-100-T mixer equipped with a pastry knife agitator. After all of the water has been added, the semolina and water are blended at high speed for 30 seconds; the mixer was stopped to scrape down the sides of the bowl and the blending continued for 90 seconds more to complete the premix stage. The premixed pasta was then transferred to the vacuum mixer of the press and extruded through an 84-strand 0.043 in teflon spaghetti die. A jacketed extension tube (9½" long x 1-3/4" inside diameter) was attached to the semi-commercial pasta extruder to allow more time for hydration of the semolina and minimize the number of white specks (unhydrated semolina) in the spaghetti. Extrusion temperature was controlled by a circulating water bath.

Spaghetti Drying - Spaghetti was dried in an experimental pasta dryer for an 18 hour cycle as described by Gilles, Sibbitt and Shuey^{9/}. During the drying period, the humidity of the dryer was decreased linearly from 95 to 60% R.H. and the temperature was held constant at 100°F.

^{9/} Gilles, K. A., Sibbitt, L. D. and Shuey, W. C.
Automatic laboratory dryer for macaroni products.
Cereal Sci. Today 11: 322 (1966).

Cooking Characteristics of Spaghetti

A. Cooking Procedure

Spaghetti (10 g) which had been broken into lengths of approximately 5 cm, was placed into 300 ml of boiling water in a 500 ml beaker. After 12 minutes cooking, the samples were washed thoroughly with distilled water in a Buchner funnel, allowed to drain for 2 minutes and then weighed to determine cooked weight. This procedure is the same as last year, but differs from previous years, when a 1% salt solution was used and the spaghetti was cooked for 10 minutes.

B. Firmness Score

Two strands of cooked spaghetti were placed on a plexiglass plate and sheared at a 90° angle with a special plexiglass tooth. A continuous recording of distance versus force was made by the instrument during the operation. An automatic integrator was used to calculate the area under the curve (g cm) which was the amount of work required to shear the cooked spaghetti. To measure firmness, the average of three integrator scores was used, and the average work to shear was used as a measure of spaghetti firmness. The firmness score was read directly from the integrator value.

The higher the value, the firmer the spaghetti. A value of approximately 7.00 appears to be of preference.

Calculations were as follows:

$$E = 0.0216 \times A \text{ (g cm)}$$

A = Average integrator reading

E = Area of curve in g cm

C. Residue

This is the weight of the solids remaining after the combined cooking and washing water was evaporated.

DISCUSSION

The following discussion represents some of the basic techniques and criteria used in the milling and cooking quality evaluation of durum wheat samples. Several testing factors are used to determine the overall quality characteristics or final evaluation of a particular sample including, in general, the kernel characteristics, milling performance and cooking performance.

Each evaluation factor can be important. A sample could be of sufficiently poor quality for a given factor to eliminate it from possible future testing. However, a sample submitted for the first time and found to show little promise should be tested again to establish if it has some good promise, or no promise. A sample which is consistently rated as little promise or no promise should be discarded.

Data presented in this report were processed by using the Statistical Analysis System (SAS Institute, Inc., SAS Circle, Box 8000, Cary, NC 27511). The program developed from this system allows flexibility within the quality grading factors. This should allow us to relate more directly to industry and consumer requirements.

In this evaluation system 11 dependent variables are used. These are test weight, 1000 kernel weight, percent small kernels, wheat protein, total extraction, semolina extraction, dust color, speck count, semolina protein, spaghetti visual color score and spaghetti firmness score. Five additional variables are measured and included in the tables for the reader's use and information but are not used in the computerized evaluation of the samples. These are percent large kernels, mixograph score, semolina mineral, falling number and cooking residue.

After computing an average of each of the 11 variables for the standards from a station or nursery, the computer subtracts established values from each of the standard averages to determine major (MJ) and minor (MI) faulting limits. There are two exceptions where precise values have been assigned, which are independent of the station standards. The first exception is wheat protein, where percentages below 11.5% will be classified as MJ faults, and percentages between 11.5% - 12.5% will be MI faults (14% m.b.). The second exception is semolina protein, where percentages below 11.0% are classified as MJ faults, and percentages between 11.0 and 11.5% are classified as MI faults (14% m.b.). Hence, the wheat and semolina protein faulting values remain the same for all stations and nurseries.

SELECTION OF STANDARDS

Whenever possible, the standards selected were named varieties grown at each location or in each nursery. In the tables of data, the varieties used as standards are identified by an "s" in the second column. At the bottom of each table are cited "average of standards". Quality deviation from these values determine the major and minor faults (note preceding paragraph). In nurseries where breeders did not grow named varieties, standard quality data were obtained from the 1983 North Dakota standard, which was processed separately with each nursery. This standard was made up of durum wheats grown in North Dakota, not at the particular nursery location. Other deviations are footnoted in the tables.

HOW SAMPLES ARE SCORED

Each sample is assigned an evaluation score of 4. Major and minor faults determined from the data by the computer will reduce this score, depending upon the quality factor being faulted. The effects of the different quality faults are shown in the table which follows:

DURUM PROGRAM FAULTING AND SCORING VALUES

Variable	Range ^{1/}		Effect on Evaluation Score ^{2/}	
	Minor fault	Major fault	Minor fault	Major fault
Test Wt. (lb/bu)	-2.2	-3.1	-	-1
1000 KWT (g)	-2.1	-5.1	-	-1
Small Kernels (%)	+5	+10	-	-1
Wheat Prot. (%)	12.5	11.5	-1	-2
Tot. Ext. (%)	-2.5	-3.5	-1	-2
Semo. Ext. (%)	-3.0	-4.0	-1	-2
Dust color	-10	-15	-2	-3
Specks/10 sq. in.	+10	+15	-	-1
Semo. Prot. (%)	11.5	11.0	-1	-2
Visual Spag. color	-1.0	-1.5	-2	-3
Firmness (g cm)	-1.5	-2.25	-1	-2

1/ Wheat and semolina protein percents are fixed lower limits for faults. All other values represent the deviation from the average of the standards required to warrant a minor or major fault.

2/ These values are subtracted from a beginning score of 4.

Because of the large number of samples received, and often because of the small sample size, we cannot perform all of the evaluation tests on each sample. The computer evaluation system allows any combination of quality factors to be evaluated.

The Final Evaluation (VAL) rating applies only to the data contained in the year of the report. The main defects and outstanding features are discussed. A selection which is promising as a new variety should be continued. A sample which shows little or no promise should be discontinued.

EXPERIMENTAL RESULTS - 1983 CROP

The results are tabulated and presented in the following order: Tables 1-7, Uniform Regional Nursery; Tables 8-10, Western Durum Nursery; Tables 11-13, Field Plot Nursery; Table 14, Washington Durum Nursery; Table 15, Advanced Nursery; Tables 16-22, Preliminary Nursery; Table 23, International Durum Yield Nursery; Table 24, Elite Durum Yield Trial.

UNIFORM REGIONAL NURSERY

Analyses were done on the individual samples from each station. Samples were milled using the micro procedure. Semolina produced from the micro milled samples were not processed into spaghetti. A sample that has a good semolina dust color score will usually produce spaghetti with an acceptable spaghetti visual color score. The varieties of Rugby, Vic and Ward represent the standards used for all stations in the Uniform Regional Nursery.

One hundred ninety-six samples were received from seven stations and four states. Twenty-eight samples were received from all 7 stations. Ten of these samples were named varieties. The rest were experimental lines. The discussion which follows is based on averaged data from the 7 stations.

Quality data for Rugby, Vic and Ward were averaged for each station, and these data were used as a standard to evaluate the other selections. Exceptions are wheat and semolina protein concentrations, which are fixed values. Hence, a variety or selection may be rated satisfactory at two different stations, but comparison of the data may show much poorer results for one station due to adverse environmental conditions. Thus, the sample with poor results could be rated as satisfactory at one or more stations. Each variety or selection is followed by the average general evaluation and a short narrative.

Cando (3.4 - 22/8) (3 years) - Some promise.

Faults (1983 crop only)

1000 KWT - Morris, Selby, Williston, Carrington
Wheat protein - Morris
Test weight - Selby, Carrington
Small kernels - Carrington

Coulter (3.3 - 20/6) (3 years) - Some promise

Faults (1983 crop only)

1000 KWT - Morris, Selby, Carrington, Sidney
Wheat protein - Morris
Semolina extraction - Morris, Sidney
Test weight - Carrington
Small kernels - Carrington

Crosby (3.4 - 16/6) (3 years) - Some promise

Faults (1983 crop only)

Semolina extraction - Morris
1000 KWT - Crookston, Carrington, Sidney
Wheat protein - Crookston
Dust color - Selby

Lloyd (3.5 - 15/6) (3 years) - Good promise

Faults (1983 crop only)

Wheat protein - Morris
Test weight - Selby, Carrington
1000 KWT - Williston, Carrington
Small kernels - Carrington

Medora (3.8 - 9/2) (3 years) - Good promise

Faults (1983 crop only)

1000 KWT - Morris, Carrington, Sidney
Semolina extraction - Day County

Mindum (1.2 - 39/23) (3 years) - No promise

Faults (1983 crop only)

1000 KWT - Morris, Crookston, Day County, Williston,
Carrington, Sidney
Wheat protein - Morris, Crookston
Dust color - Morris, Crookston, Selby, Day County,
Williston, Carrington, Sidney
Small kernels - Day County
Semolina extraction - Day County
Test weight - Carrington

Rolette (3.4 - 9/2) (3 years) - Some promise

Faults (1983 crop only)

Dust color - Williston
1000 KWT - Carrington

Rugby (3.8 - 6/1) (3 years) - Good promise

Faults (1983 crop only)

Wheat protein - Morris
1000 KWT - Williston

Vic (3.9 - 3/1) (3 years) - Good promise

Faults (1983 crop only)

Wheat protein - Morris

Ward (3.8 - 4/1) (3 years) - Good promise

Faults (1983 crop only)

Wheat protein - Crookston
Semolina extraction - Carrington

D793 (3.7 - 6/1) (2 years) - Good promise

Faults (1983 crop only)

Wheat protein - Morris
Semolina extraction - Morris
Test weight - Crookston, Selby, Carrington

D804 (3.9 - 4/0) (1 year) - Good promise

Faults

1000 KWT - Morris, Selby, Carrington
Wheat protein - Morris

D7733 (3.5 - 7/4) (3 years) - Good promise

Faults (1983 crop only)

Wheat protein - Morris
Semolina extraction - Morris, Williston

D7798 (3.7 - 8/3) (3 years) - Good promise

Faults (1983 crop only)

Wheat protein - Morris

D7925 (3.7 - 1/0) (1 year) - Good promise

Faults

Dust color - Williston

D7958 (3.7 - 1/1) (1 year) - Good promise

Faults

Semolina extraction - Williston

D7983 (3.4 - 6/3) (1 year) - Some promise

Faults

1000 KWT - Morris, Crookston, Selby, Day County,
Carrington

Semolina extraction - Day County

D77200 (3.3 - 17/5) (3 years) - Some promise

Faults (1983 crop only)

Wheat protein - Morris, Crookston

1000 KWT - Selby, Day County, Carrington

Small kernels - Day County, Carrington

D78127 (3.7 - 5/3) (2 years) - Good promise

Faults (1983 crop only)

Wheat protein - Morris

Test weight - Carrington

1000 KWT - Carrington

Small kernels - Carrington

D78177 (3.8 - 14/4) (2 years) - Good promise

Faults (1983 crop only)

1000 KWT - Morris, Selby, Williston, Carrington

Small kernels - Day County, Carrington

Test weight - Carrington

D79103 (3.6 - 2/1)(1 year) - Good promise

Faults

Wheat protein - Morris
Semolina extraction - Crookston

D79104 (3.9 - 6/1)(1 year) - Good promise

Faults

1000 KWT - Morris, Crookston, Selby, Day County,
Williston, Carrington

D79120 (3.6 - 4/1)(1 year) - Good promise

Faults

Wheat protein - Morris, Crookston
Test weight - Selby
1000 KWT - Carrington

D79122 (3.6 - 7/0)(1 year) - Good promise

Faults

Test weight - Morris
Wheat protein - Morris, Crookston
1000 KWT - Selby, Carrington, Sidney
Semolina extraction - Selby

D79168 (3.1 - 7/3)(1 year) - Some promise

Faults

Wheat protein - Morris, Crookston
1000 KWT - Williston, Carrington
Semolina extraction - Williston
Test weight - Carrington
Small kernels - Carrington

D79209 (3.7 - 5/1)(1 year) - Good promise

Faults

Wheat protein - Morris
1000 KWT - Selby, Williston, Carrington
Test weight - Carrington

DT371 (3.4 - 15/6) (2 years) - Some promise

Faults (1983 crop only)

1000 KWT - Morris, Carrington, Sidney
Semolina extraction - Morris, Williston
Wheat protein - Crookston
Test weight - Selby, Day County, Williston, Sidney

DT375 (3.9 - 3/0) (1 year) - Good promise

Faults

Semolina extraction - Morris
1000 KWT - Carrington, Sidney

WESTERN DURUM NURSERY

Analyses for the Western Durum Nursery samples were similar to those for the Field Plot Nursery. All samples were milled, and the semolina was processed into spaghetti using the macro method. Thirty-eight samples were received from Imperial Valley, California, and 27 samples were received from both Davis and Delta, California; all three stations using Mexicali 75 and Westbred 881 as standards.

Imperial Valley, California, Table 8

Of the 38 samples received, 8 showed good promise. D8204 had a minor fault for test weight; three samples showed some promise. All 3 had a major fault for 1000 KWT and one a minor fault for semolina specks. Ten samples showed little promise, and 17 samples showed no promise. The average evaluation score for this station was 2.1.

Davis, California, Table 9

All samples received from this station showed no promise. The evaluation score for this station is 1.0.

Delta Area, California, Table 10

Three of the 27 samples received showed good promise. All 3 have a minor fault for 1000 KWT. Two samples showed some promise with minor faults for semolina specks, semolina protein and firmness score. One sample showed little promise, and 21 showed no promise. The average evaluation score for this station was 1.5.

FIELD PLOT NURSERY

Thirty-one samples were received from three stations. All samples were milled, and the semolina was processed into spaghetti using the macro method.

Mesa, Arizona, Table 11

Sixteen samples were received from this station using Aldura, Mexicali 75 and Westbred 881 as the standards. Westbred 881 shows good promise, WDE-80-10 shows some promise. Fourteen samples show no promise. The average evaluation score for this station was 1.3.

Pinal County, Arizona, Table 12

Eight samples were received from this station using Aldura NK, Mexicali and Westbred 881 as the standards. Westbred 881 shows good promise with a minor fault for semolina specks. The 7 other samples all show no promise. The average evaluation score for this station was 1.4.

Yuma County, Arizona, Table 13

Seven samples were received from this station using Aldura, Mexicali and Westbred 881 as the standards. Westbred 881 shows good promise. The 6 other samples all show no promise. The average evaluation score for this station was 1.4.

WASHINGTON DURUM NURSERY

Royal Slope, Table 14

Thirty-three samples were received from this station using Aldura, Cando and Lloyd as the standards. Of the 33 samples 4 show good promise. They are Attila, TL 073468, TL 073506 and TL 075393. Fourteen samples show some promise, 7 samples show little promise and 8 samples show no promise. The average evaluation score for this station is 2.4.

WESTERN DURUM NURSERY

Analyses for the Western Durum Nursery samples were similar to those for the Field Plot Nursery. All samples were milled, and the semolina was processed into spaghetti using the macro method. Thirty-eight samples were received from Imperial Valley, California, and 27 samples were received from both Davis and Delta, California; all three stations using Mexicali 75 and Westbred 881 as standards.

Imperial Valley, California, Table 8

Of the 38 samples received, 8 showed good promise. D8204 had a minor fault for test weight; three samples showed some promise. All 3 had a major fault for 1000 KWT and one a minor fault for semolina specks. Ten samples showed little promise, and 17 samples showed no promise. The average evaluation score for this station was 2.1.

Davis, California, Table 9

All samples received from this station showed no promise. The evaluation score for this station is 1.0.

Delta Area, California, Table 10

Three of the 27 samples received showed good promise. All 3 have a minor fault for 1000 KWT. Two samples showed some promise with minor faults for semolina specks, semolina protein and firmness score. One sample showed little promise, and 21 showed no promise. The average evaluation score for this station was 1.5.

FIELD PLOT NURSERY

Thirty-one samples were received from three stations. All samples were milled, and the semolina was processed into spaghetti using the macro method.

Mesa, Arizona, Table 11

Sixteen samples were received from this station using Aldura, Mexicali 75 and Westbred 881 as the standards. Westbred 881 shows good promise, WDE-80-10 shows some promise. Fourteen samples show no promise. The average evaluation score for this station was 1.3.

Pinal County, Arizona, Table 12

Eight samples were received from this station using Aldura NK, Mexicali and Westbred 881 as the standards. Westbred 881 shows good promise with a minor fault for semolina specks. The 7 other samples all show no promise. The average evaluation score for this station was 1.4.

Yuma County, Arizona, Table 13

Seven samples were received from this station using Aldura, Mexicali and Westbred 881 as the standards. Westbred 881 shows good promise. The 6 other samples all show no promise. The average evaluation score for this station was 1.4.

WASHINGTON DURUM NURSERY

Royal Slope, Table 14

Thirty-three samples were received from this station using Aldura, Cando and Lloyd as the standards. Of the 33 samples 4 show good promise. They are Attila, TL 073468, TL 073506 and TL 075393. Fourteen samples show some promise, 7 samples show little promise and 8 samples show no promise. The average evaluation score for this station is 2.4.

ADVANCED NURSERY

Davis, California, Table 15

Twenty-one samples were received from this station using Aldura, Modoc and Yavaros as standards. All 21 samples show no promise having an evaluation score of 1.0.

PRELIMINARY NURSERY

A total of 331 samples were received from 2 stations. All samples were milled using the micro procedure.

Tulelake, California

Four sets of samples were received using 3 different levels of nitrogen, plus a set with 0 nitrogen. Modoc 83-S-5, Modoc 83-S-6 and Modoc 83-S-7 were used as standards for all four sets.

0 Pounds Nitrogen, Table 16

Of the 16 samples in this set; one showed some promise, 10 showed little promise and 5 showed no promise. The major faulting area for this set was wheat protein. The average evaluation score was 1.8.

100 Pounds Nitrogen, Table 17

Sixteen samples were received in this set; one showed some promise, 11 showed little promise and 4 showed no promise. The major faulting area for this set was wheat protein. The average evaluation score was 1.8.

200 Pounds Nitrogen, Table 18

Sixteen samples are in this set; of those, 3 samples show some promise, 10 show little promise and 3 show no promise. Again, the major faulting area was wheat protein. The average evaluation score was 2.0.

300 Pounds Nitrogen, Table 19

Sixteen samples are in this set; of those, 6 show good promise. TL 75-409 and TL 83-1184 have a minor fault for 1000 KWT. Three samples show some promise, 6 show little promise and 1 shows no promise. The major faulting area is wheat protein. The average evaluation score for this set is 2.9.

Tulelake, California, Table 20

Thirty samples were received in this set. Cando, Irridur, Modoc and Waid were used as the standards. Seven show some promise, 10 samples show little promise and 13 show no promise. Two major faulting areas are wheat protein and semolina extraction. The average evaluation score is 1.8.

Tulelake, California, Table 21

Forty-two samples were received in this set. Mexicali, Modoc and Produra were used as the standards. Eleven samples show some promise, 21 show little promise and 10 samples show no promise. The major faulting area is wheat

Imperial Valley, California, Experiment No. 322, Tables 22 & 22A

Two hundred four samples were received from this station. This experiment was run twice, once using Mexicali 75 as the standard and on the second run using our 1983 durum standard as the standard. Using Mexicali 75 as the standard, 134 samples showed good promise, 48 showed some promise, 13 showed little promise and 9 showed no promise. The major area of faulting was 1000 KWT. The average evaluation score is 3.5.

The second run using our 1983 durum standard as the standard, there were 37 samples that show good promise, 8 samples show some promise, 35 samples show little promise and 124 show no promise. The major faulting area for this set was dust color. The average evaluation score is 1.8.

INTERNATIONAL DURUM YIELD NURSERY

Davis, California, Table 23

There were 16 samples received from this station using Edmore and Mexicali 75 as the standards. One sample "Dural" shows good promise, 2 samples show some promise and 13 samples show no promise. The major faulting areas were wheat protein, dust color and semolina protein. The average evaluation score is 1.4.

ELITE DURUM YIELD TRIAL

Davis, California, Table 24

There were 9 samples received from this station using Produra as the standard. All samples from this set rated no promise. The major faulting areas are wheat and semolina protein. The evaluation score for all samples is 1.0.

EXPLANATION OF ABBREVIATIONS
LISTED UNDER THE HEADINGS AND UNDER
MINOR AND MAJOR DEFICIENCIES ON TABLES

MINOR AND MAJOR DEFICIENCIES ON COMPUTER PRINTOUT

S or STD = Standard
TW = Test Weight

1000 KWT or KW = 1000 Kernel Weight
LG = % Large Kernels
SM = % Small Kernels

WHT PRO or WP = Wheat Protein
TOT EXT or TX = Total Extraction (Semolina Plus
Flour)
SEMO EXT or SX = Semolina Extraction
DUS or DU = Semolina Dust Color Score (High
score is more desirable)

MX = Mixograph Score (The higher the number, the
stronger the curve)
SPK or SK = Semolina Speck Count
SEMO MIN = Semolina Mineral

FALL NO = Semolina Falling Number Value (Values
above 300 are desired)
SEMO PRO or SP = Semolina Protein

VI = Spaghetti Visual Color Score (The higher
the score, the more desirable)
FIRM or FR = Cooked Spaghetti Firmness Score
(Approx. 6.50 to 8.50 is the
desirable range)

RES = Residue in Water of Cooked Spaghetti
VALU = Sample Evaluation Number (Example 4 =
Good Promise)

QUALITY DATA OF DURUM SAMPLES 1983 CHOP

TABLE 1

SIAIE=SOUH_DAKOIA STATION=SELRBY_NURSERY=UNIFORM

VARIETY	STD TW	1000 KWT	LG_SM %	WHT PRO EXT	SEMO EXT	DUS MX SPK	SEMO MIN	FALL NO	SEMO PRO	VI	FIRM	RES VALU	**	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR	
CANDO	59.8	37.6	38	3	13.1	75	5						3	MI	MJ										
COULTER	60.0	41.0	39	2	14.2	70	7						4	MI	MI										
CRUSBY	62.2	43.3	46	2	14.2	45.0							2												MI
LLOYD	59.0	44.6	43	2	13.6	48.5							4	MI											
MEDORA	60.0	42.6	56	2	14.7	65							4												MI
MINDUM	62.4	42.9	51	2	14.0	51.5							2												
ROULETTE	62.2	43.1	60	2	15.4								4												
RUGBY	61.3	44.6	50	2	14.5								4												
VIC	62.4	44.1	56	2	14.0	48.5							4												
WARD	62.6	42.6	52	2	14.4	44.0							4												
D 79J	59.7	50.3	70	2	14.8	48.5							4	MI	MI										
D 804	62.1	41.2	36	1	23.7	47.5							4												
D 7733	61.8	42.6	61	2	14.4	85							4												
D 7798	61.9	46.1	57	2	14.5	47.5							4												
D 7925	61.9	42.9	56	2	14.7	45.0							4												
D 7958	61.4	43.5	58	1	14.5	45.5							4												
D 7983	61.8	38.2	45	2	14.5	50.0							3												
D 77200	61.9	40.3	25	2	12.7	54.5							4												
D 78127	61.8	43.9	58	2	13.4	46.5							4												
D 78177	61.9	39.1	26	4	13.3	50.5							4												
D 79103	61.8	44.6	71	1	14.4	45.0							4												
D 79104	62.4	38.8	48	2	14.0	48.0							4												
D 79120	59.8	42.6	45	2	13.9	53.5							4												
D 79122	60.6	40.5	32	2	13.9	43.0							3												MI
D 79168	62.1	42.4	37	3	13.7	47.5							4												
D 79209	62.1	40.8	40	2	13.3	47.0							4												
DT 371	58.9	42.7	43	2	14.8	46.0							3												
DT 375	61.3	43.9	28	2	14.7	45.5							4												

DEFICIENCIES
 AVG OF STANDARDS 62.1 43.8
 MINOR FAULTING VALUES 59.0 41.7 7 12.5
 MAJOR FAULTING VALUES 59.0 38.7 12 11.5

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1983 CROP

TABLE 2

STATE=SOUTH_DAKOTA STATION=DAY_CO. NURSERY=UNIFORM

VARIETY	STD TW	1000 K* _T	% LG _{SM}	WHT PRO EXT	SEM0 EXT	DUS	MX	SPK	SEM0 MIN	FALL NO	SEM0 PRO	VI	FIRM	RES	VALU	**	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR	DEFICIENCIES	
CANDLO	57.9	33.7	4	8	14.7	80	6	8	45.5	1	45.5	80	6	8	4	4	57.6	34.5	16	4	15.8	47.3	75	6	8	4	4		
CROULTER	57.6	32.1	5	6	15.8	75	6	8	44.5	1	44.5	75	6	8	4	4	57.8	32.2	18	3	15.8	49.0	75	6	8	4	4		
CROSSRY	57.8	38.0	4	4	14.9	49.0	75	8	43.5	1	43.5	75	8	8	4	4	59.0	35.1	16	3	16.3	42.5	60	6	5	4	4	MI	
LLOYD	59.0	35.1	16	3	16.3	43.5	75	8	46.0	1	46.0	70	5	8	4	4	59.4	30.7	2	10	15.8	44.5	70	6	6	4	4	MJ MJ	
MEDORA	59.4	30.7	2	10	15.8	46.0	70	5	44.5	1	44.5	70	6	6	4	4	59.4	33.8	6	4	14.4	48.0	75	8	8	4	4		
MINDUM	59.4	33.8	6	4	14.4	48.0	75	8	49.5	1	49.5	80	6	6	4	4	59.8	35.8	15	3	15.9	48.0	75	8	8	4	4		
RULETTE	59.8	35.8	15	3	15.9	48.0	75	8	48.5	1	48.5	85	8	8	4	4	59.4	31.5	18	5	16.1	48.5	85	8	8	4	4		
RUGBY	59.4	31.5	18	5	16.1	48.5	85	8	51.5	1	51.5	85	7	7	4	4	60.5	34.4	16	4	15.8	48.5	85	7	7	4	4		
WARD	57.6	34.5	16	4	15.8	48.5	85	8	48.5	1	48.5	80	7	7	4	4	59.8	36.2	18	3	15.8	47.0	75	8	8	4	4		
D 793	60.5	34.4	17	5	14.7	47.5	80	7	47.5	1	47.5	80	8	8	4	4	59.5	36.1	15	3	15.5	47.5	80	8	8	4	4		
D 804	59.8	36.2	18	3	15.8	47.5	80	7	47.0	1	47.0	80	8	8	4	4	58.1	35.7	13	3	16.5	47.0	80	8	8	4	4		
D 7798	59.5	36.1	15	3	15.5	47.0	75	8	47.0	1	47.0	80	8	8	4	4	59.8	35.7	11	4	15.1	47.0	80	8	8	4	4		
D 7925	58.1	35.7	13	3	16.5	47.0	80	8	41.5	1	41.5	70	8	8	4	4	58.6	30.6	7	7	16.6	41.5	70	8	8	4	4	MJ	
D 7958	59.8	35.7	11	4	15.1	41.5	70	8	50.0	1	50.0	80	7	7	4	4	60.5	39.5	17	5	14.1	47.5	70	8	8	4	4		
D 7983	58.6	30.6	7	7	16.6	47.5	80	8	47.5	1	47.5	85	7	7	4	4	59.0	32.2	3	9	15.0	47.5	85	7	7	4	4		
D 78127	60.5	39.5	17	5	14.1	47.5	80	8	52.0	1	52.0	80	8	8	4	4	59.2	36.6	31	2	15.6	52.0	85	7	7	4	4		
D 78177	59.0	32.2	3	9	15.0	52.0	80	8	50.5	1	50.5	80	8	8	4	4	60.2	30.6	8	6	15.5	50.5	80	8	8	4	4		
D 79103	60.2	30.6	8	6	15.5	50.5	80	8	49.0	1	49.0	80	8	8	4	4	59.2	36.5	12	2	16.0	49.0	80	8	8	4	4		
D 79104	59.2	36.5	12	2	16.0	49.0	80	8	52.5	1	52.5	90	7	7	4	4	59.5	33.7	6	5	15.5	52.5	80	8	8	4	4		
D 79120	59.5	33.7	6	5	15.5	52.5	80	8	57.5	1	57.5	90	7	7	4	4	60.3	36.4	12	3	14.3	57.5	90	7	7	4	4		
D 79122	60.3	36.4	12	3	14.3	57.5	90	7	53.0	1	53.0	80	6	6	4	4	60.2	34.1	5	6	14.4	53.0	80	6	6	4	4		
D 79168	60.2	34.1	5	6	14.4	53.0	80	6	55.0	1	55.0	85	8	8	4	4	56.2	31.5	6	6	16.0	55.0	85	8	8	4	4		
D 79209	56.2	31.5	6	6	16.0	55.0	85	8	44.5	1	44.5	75	7	7	4	4	60.3	34.4	3	5	16.6	44.5	75	7	7	4	4		
DT 371	60.3	34.4	3	5	16.6	44.5	75	7																					
DT 375																													

DEFICIENCIES
 AVG OF STANDARDS 59.5 33.5 4 16.0
 MINOR FAULTING VALUES 57.3 31.4 9 12.5
 MAJOR FAULTING VALUES 56.4 28.4 14 11.5
 **EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1983 CROP

TABLE 3

STATE=MINNESOTA STATION=CROOKS NURSERY=UNIFORM

VARIETY	STD	TW	1000 KWT	X LG_SM	WHT PRO	TOT EXT	SEMO EXT	DUS	MX	SPK	SEMO MIN	FALL NO	SEMO PRO	VI	FIRM	RES	VALU	**	TJ	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
CANDO		59.2	37.7	23	2	13.2	66.5	80	4								4												
COULTER		58.4	37.6	26	2	13.2	66.5	85	5								4												
CROSBY		60.5	36.1	20	1	12.5	66.5	80	3								4			MI		MI							
LLOYD		57.3	39.2	23	5	13.5	65.5	80	5								4												
MEDORA		59.5	39.0	40	3	14.4	65.5	80	6								4												
MINDUM		62.6	35.6	18	3	12.1	66.5	65	3								1			MI		MI							MI
ROLETTE		59.5	37.3	19	4	13.6	67.5	70	3								4												
RUGBY		58.9	36.9	27	5	13.1	66.5	75	3								4												
VIC	S	59.7	41.3	44	2	12.9	67.5	80	5								4												
WARD	S	58.7	36.8	32	3	12.5	66.0	75	3								3			MI		MI							
D 793		56.3	41.6	36	4	13.2	66.0	80	6								4												
D 804		59.0	37.5	26	5	12.8	66.0	80	6								4												
D 7733		59.7	40.2	41	2	13.6	66.5	80	6								4												
D 7798		59.8	42.6	38	2	13.3	65.0	80	6								4												
D 7925		57.9	40.0	33	3	13.1	68.5	75	5								4												
D 7958		59.7	38.0	41	3	13.0	65.5	80	6								4												
D 77200		60.3	33.8	15	4	14.1	66.5	80	5								4												
D 78127		58.9	40.8	45	4	12.8	66.0	80	5								4			MI		MI							
D 78177		58.6	37.5	17	4	13.1	67.0	75	5								4												
D 79103		59.0	40.7	55	2	12.7	61.5	80	6								2												
D 79104		58.9	34.7	24	3	13.6	65.5	90	6								4			MI		MI							
D 79120		57.8	38.9	27	4	12.5	65.0	90	6								3												
D 79122		58.4	38.3	30	2	12.5	67.5	80	6								3												
D 79168		59.7	38.0	23	3	12.4	67.0	85	7								3												
D 79209		58.7	38.6	23	4	13.0	66.0	75	6								4												
DT 371		57.8	37.5	24	3	12.5	66.0	75	6								3												
DT 375		60.6	38.0	19	2	13.0	66.0	80	5								4												

DEFICIENCIES
 AVG OF STANDARDS 59.1 38.3 12.8
 MINOR FAULTING VALUES 56.9 36.2 11.5
 MAJOR FAULTING VALUES 56.0 33.2 11.5

**EVALUATION I=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

TABLE 5

QUALITY DATA OF DURUM SAMPLES 1983 CROP
 STATE=MONTANA STATION=SIDNEY NURSERY=UNIFORM

VARIETY	STD	TW	1000 KWT	% LG_SM	WHT PRO	TOT EXT	SEMU EXT	DUS	MX	SPK	SEMU MIN	FALL NO	SEMU PRO	VI	FIRM	RES	VALU	**	TW	KW	SM	WP	DEFICIENCIES
CANDO	61.9	36.5	13	4	15.1	•	66.0	90	4	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
COULTER	60.2	34.5	13	4	15.7	•	64.5	80	7	•	•	•	•	•	•	•	3	•	MI	MI	MI	MI	MI
CROSBY	60.5	35.0	10	4	16.7	•	65.0	90	6	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
LLOYD	60.5	38.5	12	4	14.7	•	66.0	90	8	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
MEDORA	60.3	35.0	10	2	16.3	•	66.0	90	8	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
MINDUM	60.3	32.5	4	5	16.2	•	66.0	75	5	•	•	•	•	•	•	•	1	•	MI	MI	MI	MI	MI
ROLETTE	62.1	41.5	29	4	16.6	•	63.5	80	3	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
RUGBY	S 60.5	36.8	14	3	16.0	•	66.5	85	4	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
VIC	S 61.0	38.9	13	3	15.9	•	68.0	90	8	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
WARD	60.6	38.2	18	4	16.0	•	67.5	90	4	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 793	60.5	41.8	35	2	15.6	•	66.0	90	7	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 804	62.1	36.5	17	4	14.6	•	67.5	95	8	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 7733	61.3	39.1	17	2	16.1	•	67.5	90	8	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 7798	61.4	40.7	21	3	15.5	•	67.0	85	7	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 7925	60.5	39.7	19	2	14.9	•	67.0	80	7	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 7958	60.8	37.2	16	2	16.0	•	66.0	85	8	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 7983	61.3	37.2	15	3	15.9	•	65.5	90	8	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 77200	61.0	39.2	6	4	15.1	•	66.0	80	7	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 78127	62.4	38.3	15	2	14.3	•	67.5	90	7	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 78177	61.8	36.5	8	5	14.6	•	72.5	95	7	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 79103	61.4	40.2	35	2	15.3	•	70.0	85	6	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 79104	62.1	36.9	26	3	15.1	•	68.5	90	6	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 79120	59.8	36.1	14	4	14.6	•	70.0	90	7	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 79122	59.5	35.1	6	4	15.0	•	69.0	90	8	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 79168	62.1	37.0	8	3	15.2	•	71.5	95	6	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
D 79209	61.8	37.6	14	3	14.1	•	71.5	85	6	•	•	•	•	•	•	•	4	•	MI	MI	MI	MI	MI
DT 371	57.6	33.4	6	6	15.7	•	68.0	90	7	•	•	•	•	•	•	•	3	•	MJ	MI	MI	MI	MI
DT 375	59.0	33.4	3	8	17.1	•	67.0	85	7	•	•	•	•	•	•	•	4	•	MJ	MI	MI	MI	MI

DEFICIENCIES TW KW SM WP TX SX DU SK SP VI FR
 AVG OF STANDARDS 60.7 38.0 3 16.0 • 67.3 88 • •
 MINOR FAULTING VALUES 58.5 35.9 8 12.5 • 64.3 78 • 11.5 • •
 MAJOR FAULTING VALUES 57.6 32.9 13 11.5 • 63.3 73 • 11.0 • •

**EVALUATION I=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1983 CROP
 STATE=NORTH_DAKOTA STATION=ILLISION_NURSERIE=UNIFORM

TABLE 6

VARIETY	STD	TW	1000 KWT	LG	% SM	WHT PRO	TOT EXT	SEMO EXT	DUS	MX	SPK	SEMO MIN	FALL NO	SEMO PRO	VI	FIRM	RES	VALU	TW	KW	SM	WP	DEFICIENCIES TX SX DU SK SP VI FR
CANDO		63.4	35.0	7	3	15.6		60.0	85	6								4					
COULTER		62.2	37.5	18	3	16.9		63.5	80	8								4					
CROSBY		62.7	37.7	16	3	17.0		61.5	85	6								4					
LLOYD		63.2	36.2	14	2	15.7		60.0	95	7								4					
MEDORA		61.8	37.5	22	2	17.2		52.0	85	7								4					
MINDUM		61.8	35.5	12	2	16.7		54.5	65	5								4					
ROLETTE		63.2	42.7	41	1	18.2		58.5	75	5								2					
RUGBY	S	63.7	36.4	14	3	16.6		56.0	80	5								4					
VIC	S	61.8	40.3	29	1	16.7		55.0	90	6								4					
WARD	S	62.7	38.9	23	2	17.2		53.5	85	5								4					
D 793		62.1	44.4	54	1	17.0		53.5	80	7								4					
D 804		62.2	38.0	13	2	15.7		55.0	85	6								4					
D 7733		61.6	40.7	32	2	16.8		49.0	80	7								2					
D 7798		61.8	39.8	24	1	16.9		52.5	85	8								4					
D 7925		62.4	41.7	29	2	16.7		55.5	75	8								2					
D 7959		62.7	38.2	20	1	16.8		49.0	90	8								2					
D 7983		62.7	40.5	21	1	16.7		53.5	85	8								4					
D 77200		62.4	40.7	10	2	15.3		56.0	80	8								4					
D 78127		63.5	42.4	41	2	15.1		58.0	90	7								4					
D 78177		62.9	35.5	7	2	15.8		53.5	90	7								4					
D 79103		62.1	39.2	41	1	16.4		52.0	90	7								4					
D 79104		62.6	35.3	19	2	16.3		52.0	90	8								4					
D 79120		61.8	37.6	22	1	16.3		58.5	90	8								4					
D 79122		61.3	36.9	13	2	16.1		52.5	80	8								4					
D 79168		62.7	36.2	12	2	15.5		51.0	95	7								3					
D 79209		62.1	36.4	12	2	15.4		57.0	85	7								4					
DT 371		59.8	39.0	18	2	17.6		51.5	80	8								3					
DT 375		61.6	33.8	11	1	16.9		56.0	35	7								4					

DEFICIENCIES
 AVG OF STANDARDS 62.7 38.5 2 16.8
 MINOR FAULTING VALUES 60.5 36.4 7 12.5
 MAJOR FAULTING VALUES 59.0 33.4 12 11.5
 **EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

TABLE 13

QUALITY DATA OF DURUM SAMPLES 1983 CROP

STATION=ARIZONA STATION=YUMA CO. NURSERY=FIELD PLOT

VARIETY	STD	TW	1000	KWT	LG	%	WHT	TOT	SEMO	DUS	MX	SPK	MIN	FALL	SEMO	VI	FIRM	RES	VALU	**	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR			
ALDURA	S	64.4	51.8	84	1	11.7	80.3	56.8	140	3	13	0.61	400	10.2	10.4	5.51	7.1	7.1	1		MJ	MI	MI	MI	MI	MI	MI	MI	MI	MI	MJ	MJ	MJ	
GEMICALI	S	63.9	61.3	94	1	11.6	77.7	57.1	120	7	30	0.52	400	10.1	8.6	5.27	7.6	7.6	1		MJ	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MJ	MJ	MJ
YAVAROS	S	65.2	62.9	94	1	12.2	79.5	57.8	115	5	23	0.51	400	10.3	8.6	5.81	7.4	7.4	1		MJ	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MJ	MJ	MJ
1000 D	S	61.7	51.8	86	1	12.6	79.7	57.4	110	6	13	0.72	400	11.3	8.9	6.07	7.2	7.2	1		MJ	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MJ	MJ	MJ
WESTBRED	S	63.2	59.5	96	1	14.5	77.9	56.2	140	8	17	0.56	400	12.8	11.6	7.99	6.3	6.3	4		MJ	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MJ	MJ	MJ
5003	S	63.3	59.5	92	1	10.8	79.3	59.2	135	6	13	0.57	400	9.5	10.5	7.80	6.2	6.2	1		MJ	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MJ	MJ	MJ

DEFICIENCIES
 AVG OF STANDARDS 63.8 57.5 1 12.6 78.6 56.7 133 20 11.0 10.5 6.44
 MINOR FAULTING VALUES 61.6 55.4 6 12.5 76.1 53.7 123 30 11.5 9.0 4.94
 MAJOR FAULTING VALUES 60.7 52.4 11 11.5 75.1 52.7 118 35 11.0 9.0 4.19

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1983 CROP
 WASHINGTON DURUM NURSERY
 ROYAL SLCP, WASHINGTON

TABLE 14

VARIETY	STD	TW	1000 KWT	% LG-SM	WHT PRD	WHT EXT	SEMO EXT	OUS	HX	SPK	MIN	NC	SEMU PRO	VI	FIRM	RES	VALU	**	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR	
ALDURA	S	64.3	49.8	72	1	11.3	68.0	85	4	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	MJ
ATTILA	S	62.4	60.2	85	2	11.3	71.0	85	5	.	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.	.	MJ
CANDO	S	63.8	49.3	67	2	11.3	70.5	70	3	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	MJ
EDMORE	S	63.5	53.8	75	2	12.5	71.0	85	5	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
GRANDEUR	S	63.5	61.7	90	1	12.4	71.5	70	4	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
IRRIDUR	S	64.3	49.8	77	1	12.4	69.0	75	4	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
LLOYD	S	63.7	44.4	54	2	11.4	68.0	75	5	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	MJ
MODOC	S	64.2	45.2	69	1	11.7	68.5	65	4	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
WAMPUM	S	64.0	45.0	82	1	11.3	72.0	40	6	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
WAVERLY	S	62.9	42.0	72	2	9.3	69.0	25	4	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
YAVAROS 75	S	65.8	55.9	83	1	11.0	69.5	65	3	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
CIO 17806	S	62.9	43.3	62	2	11.5	68.0	75	4	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	MJ
D 0077200	S	65.0	55.2	83	1	11.3	73.0	70	5	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	MJ
UC 000512	S	65.6	46.9	68	2	12.0	70.0	75	3	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
UC 000514	S	64.0	48.5	77	1	12.0	68.5	75	3	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
UC 000516	S	65.1	53.2	78	2	11.8	70.0	55	7	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
UC 000518	S	64.1	53.5	78	2	12.2	70.0	70	4	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
TL 007315	S	64.2	49.3	73	2	12.3	69.5	80	3	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
TL 007317	S	64.6	50.3	74	1	11.9	69.5	75	3	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
TL 073457	S	63.7	54.3	83	2	12.7	70.0	80	3	.	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.	.	MJ
TL 073468	S	64.5	52.4	78	1	11.8	71.0	65	5	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
TL 073471	S	65.0	54.3	81	1	12.6	70.5	70	4	.	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.	.	MJ
TL 073506	S	65.3	47.6	70	3	12.5	68.0	75	5	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
TL 074300	S	65.0	51.0	80	2	13.0	68.5	75	3	.	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.	.	MJ
TL 075393	S	63.5	47.1	73	1	12.5	68.5	80	5	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
IL 075409	S	62.4	42.9	52	3	11.7	68.5	80	5	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
WA 006518	S	63.0	43.9	55	2	11.5	69.0	70	4	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	MJ
WA 006521	S	63.4	50.0	73	2	11.6	68.0	85	6	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	MJ
WA 006625	S	63.5	45.8	61	1	11.5	68.0	85	5	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
WA 006621	S	63.8	37.2	74	1	12.5	69.5	75	4	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
WA 006627	S	62.4	50.3	60	1	12.1	67.5	85	5	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	MJ
WA 006755	S	62.4	50.3	60	2	11.7	67.0	70	4	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
WA 006869	S	62.7	26.6	73	2	11.0	69.0	75	6	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
WPB 00803	S	62.7	26.6	73	2	11.0	69.0	75	6	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ

DEFICIENCIES
 TW KW SM WP VI FR
 AVG CF STANDARDS 63.9 47.8 2 11.3 . . .
 MINOR FAULTING VALUES 61.7 45.7 7 12.5 . . .
 MAJOR FAULTING VALUES 60.8 42.7 12 11.5 . . .
 **EVALUATION 1=NG PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1983 CRUP
 STATE=CALIFORNIA STATION=TULLELAKE NURSERY=PRELIMINARY
 100 POUNDS NITROGEN

TABLE 17

VARIETY	STD	TW	1000 KWT	% LG SM	WHT PKD	TOT EXT	SEMO EXT	DUS	MX	SPK	MIN	FALL NO	SEMO PRJ	VI	FIRM	RES	VALU	**	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR	DEFICIENCIES	
MUDDC 83-S-5	S	65.1	48.1	75	2	11.4	68.5	75	6	6	6	6	6	6	6	6	2														MJ
MUDDC 83-S-6	S	65.3	48.3	78	3	11.5	49.5	80	6	6	6	6	6	6	6	6	2														MJ
MUDDC 83-S-7	S	64.5	49.8	74	3	12.8	81.5	75	5	6	6	6	6	6	6	6	2														MJ
TL73-19		65.1	46.7	71	1	9.8	68.0	70	2	3	3	3	3	3	3	3	2														MJ
TL73-457		63.2	50.0	68	2	10.0	71.0	60	4	4	4	4	4	4	4	4	1														MJ
TL73-468		64.8	45.0	72	2	10.4	68.5	55	3	3	3	3	3	3	3	3	1														MJ
TL73-471		63.7	50.3	86	1	10.4	70.0	75	3	3	3	3	3	3	3	3	2														MJ
TL73-506		64.5	53.2	84	1	10.5	67.5	80	2	2	2	2	2	2	2	2	2														MJ
TL74-30		64.6	47.4	74	1	11.3	67.5	75	3	3	3	3	3	3	3	3	2														MJ
TL75-16		64.6	52.1	89	10	11.4	69.0	80	2	2	2	2	2	2	2	2	2														MJ
TL75-393		64.0	52.1	90	1	11.2	68.5	80	1	1	1	1	1	1	1	1	2														MJ
TL75-409		63.1	46.3	68	1	10.6	66.5	65	3	3	3	3	3	3	3	3	2														MJ
TL80-1102		63.1	46.5	78	1	9.4	71.0	55	4	4	4	4	4	4	4	4	1														MI
TL80-1104		63.5	50.0	84	1	9.8	70.5	80	2	2	2	2	2	2	2	2	2														MJ
TL80-1248		63.5	53.2	86	1	9.3	68.5	75	3	3	3	3	3	3	3	3	3														MJ
TL83-1158		65.3	47.6	79	1	12.3	68.5	75	3	3	3	3	3	3	3	3	3														MI

DEFICIENCIES
 AVG OF STANDARDS 65.0 48.7 2 11.9
 MINOR FAULTING VALUES 62.8 46.6 7 12.5
 MAJOR FAULTING VALUES 61.9 43.6 12 11.5
 **EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1983 CROP
 STATE=CALIFORNIA STATION=TULELAKE NURSERY=PRELIMINARY
 200 POUNDS NITROGEN

TABLE 18

VARIETY	STD	TW	1000 KWT	LG	% SM	WHT PRO	TOT EXT	SEMO EXT	DUS	MX	SPK	SEMO MIN	FALL NO	PRO	VI	FIRM	RES	VALU	TW	KW	SM	WP	SM	DEFICIENCIES TX SX DU SK SP VI FR
MDDOC 83-S-5	S	65.1	48.1	75	2	11.4	.	68.5	75	6	.	.	.	.	.	.	.	2	.	.	.	.	.	MJ
MDDOC 83-S-6	S	64.5	49.8	74	3	12.3	.	49.5	75	5	.	.	.	.	.	.	.	2	.	.	.	.	.	MJ
TL73-19		64.6	44.1	66	1	11.6	.	70.0	90	2	.	.	.	.	.	.	.	3	MI	MI	MI	MI	MI	
TL73-457		62.6	47.8	59	1	12.0	.	69.5	70	3	.	.	.	.	.	.	.	3	MI	MI	MI	MI	MI	
TL73-468		64.0	44.8	60	1	11.4	.	69.0	75	3	.	.	.	.	.	.	.	2	.	MI	MI	MI	MI	MJ
TL73-471		64.0	50.8	88	1	11.4	.	67.5	60	5	.	.	.	.	.	.	.	1	.	.	.	.	.
TL73-506		64.0	52.1	86	1	11.2	.	69.0	70	3	.	.	.	.	.	.	.	2	.	.	.	.	.
TL74-30		64.0	47.1	70	1	12.5	.	69.5	75	4	.	.	.	.	.	.	.	3	.	.	.	.	.
TL75-16		64.0	51.5	90	1	11.7	.	56.5	85	2	.	.	.	.	.	.	.	1	.	.	.	.	.	MJ
TL75-393		64.8	54.3	90	1	11.1	.	69.5	75	2	.	.	.	.	.	.	.	2	.	MI	MI	MI	MI	
TL75-409		63.7	46.3	66	1	10.4	.	67.5	75	3	.	.	.	.	.	.	.	2	.	MI	MI	MI	MI	
TL80-1102		63.5	47.4	74	1	10.2	.	66.5	70	3	.	.	.	.	.	.	.	2	.	.	.	.	.
TL80-1104		63.8	49.3	76	2	12.2	.	66.5	60	4	.	.	.	.	.	.	.	1	.	.	.	.	.	MJ
TL80-1248		65.6	55.6	86	1	11.4	.	70.0	80	3	.	.	.	.	.	.	.	2	.	.	.	.	.
TL83-1159		65.8	47.6	78	1	12.9	.	57.5	80	5	.	.	.	.	.	.	.	2	.	.	.	.	.	MJ

DEFICIENCIES
 TW KW SM WP TX SX DU SK SP VI FR
 AVG OF STANDARDS 65.0 48.7 2 11.9 . 61.8 77 . 11.5 .
 MINOR FAULTING VALUES 62.8 46.6 7 12.5 . 58.8 67 . 11.0 .
 MAJOR FAULTING VALUES 61.9 43.6 12 11.5 . 57.8 62 . 11.0 .
 **EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 198J CROP
 STATE=CALIFORNIA STATION=TULELAKE NURSERY=PRELIMINARY
 300 POUNDS NITROGEN

TABLE 19

VARIETY	STD	TW	1000 KWT	LG-SM %	WHT PRD	TOT EXT	SEMO EXT	DUS	MX	SPK	MIN	SEMO FALL NO	PRO	VI	FIRM	RES	VALU	**	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR		
MODUC 33-S-5	S	65.1	43.1	75	2	11.4	68.5	75	6	6	6	68.5	75	6	6	6	6	2	68.5	75	6	6	68.5	75	6	6	6	6	6	6	MJ
MODUC 33-S-6	S	65.3	48.3	78	3	11.5	49.5	75	5	5	5	49.5	75	5	5	5	5	2	49.5	75	5	5	49.5	75	5	5	5	5	5	5	MJ
MODUC 33-S-7	S	64.5	49.8	74	3	12.8	70.5	75	3	3	3	70.5	75	3	3	3	3	3	70.5	75	3	3	70.5	75	3	3	3	3	3	3	MI
TL73-19		66.7	44.6	64	1	11.9	70.0	70	3	3	3	70.0	70	3	3	3	3	4	70.0	70	3	3	70.0	70	3	3	3	3	3	3	MI
TL73-457		63.8	47.8	60	2	12.8	71.0	65	3	3	3	71.0	65	3	3	3	3	2	71.0	65	3	3	71.0	65	3	3	3	3	3	3	MI
TL73-468		64.6	45.5	70	1	13.0	70.0	65	6	6	6	70.0	65	6	6	6	6	1	70.0	65	6	6	70.0	65	6	6	6	6	6	6	MI
TL73-471		65.9	52.1	83	1	12.2	69.5	75	4	4	4	69.5	75	4	4	4	4	3	69.5	75	4	4	69.5	75	4	4	4	4	4	4	MI
TL73-506		67.8	48.8	77	1	13.9	68.5	70	4	4	4	68.5	70	4	4	4	4	4	68.5	70	4	4	68.5	70	4	4	4	4	4	4	MI
TL74-30		65.3	53.5	87	1	12.0	69.5	80	2	2	2	69.5	80	2	2	2	2	4	69.5	80	2	2	69.5	80	2	2	2	2	2	2	MI
TL75-16		66.2	52.4	86	1	13.5	68.5	85	3	3	3	68.5	85	3	3	3	3	4	68.5	85	3	3	68.5	85	3	3	3	3	3	3	MI
TL75-393		65.1	46.3	58	1	13.2	67.5	85	5	5	5	67.5	85	5	5	5	5	4	67.5	85	5	5	67.5	85	5	5	5	5	5	5	MI
TL75-409		64.6	47.6	66	1	11.2	66.5	70	4	4	4	66.5	70	4	4	4	4	2	66.5	70	4	4	66.5	70	4	4	4	4	4	4	MI
TL80-1102		64.8	48.1	74	1	12.4	70.0	70	3	3	3	70.0	70	3	3	3	3	3	70.0	70	3	3	70.0	70	3	3	3	3	3	3	MI
TL80-1104		65.9	56.5	81	1	11.3	71.0	85	2	2	2	71.0	85	2	2	2	2	2	71.0	85	2	2	71.0	85	2	2	2	2	2	2	MJ
TL80-1248		65.9	56.5	81	1	11.3	71.0	85	2	2	2	71.0	85	2	2	2	2	2	71.0	85	2	2	71.0	85	2	2	2	2	2	2	MJ
TL83-1184		64.5	45.3	70	1	13.9	67.0	60	4	4	4	67.0	60	4	4	4	4	4	67.0	60	4	4	67.0	60	4	4	4	4	4	4	MI

DEFICIENCIES
 OF STANDARDS
 MINOR FAULTING VALUES
 MAJOR FAULTING VALUES

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1983 CROP

TABLE 20

STATE=CALIFORNIA STATION=IVULELAKE NURSERY=PRELIMINARY

VARIETY	STU	TW	1000 KWT	% LG_SM	WHT TOT PRO EXT	SEMO EXT	DUS	MX	SPK	SEMO MIN	FALL NO	PRO	VI	FIRM	RES	VALU	**	TW	KW	SM	WP	DEFICIENCIES TX SX DU SK SP VI FR
CANDU	S	64.0	45.7	26	1	10.6	64.5	30	3	.	.	.	.	.	.	2	2	MI	MJ	MJ	MJ	
IRRIDUR	S	64.0	48.1	28	1	10.8	62.0	30	4	.	.	.	.	.	.	3	3	MI	MJ	MJ	MJ	
MODOC	S	65.6	50.0	84	1	12.4	62.5	80	5	.	.	.	.	.	.	3	3	MI	MI	MI	MI	
PRUDURA		64.0	51.0	31	1	11.9	65.0	75	4	.	.	.	.	.	.	2	2	MI	MJ	MJ	MJ	
WESTBRED 803		63.2	55.6	84	2	10.6	64.0	85	7	.	.	.	.	.	.	3	3	MI	MJ	MJ	MJ	
WESTBRED 881		63.2	55.6	84	1	12.4	65.5	90	8	.	.	.	.	.	.	3	3	MI	MI	MI	MI	
WAID	S	64.0	49.5	74	1	11.6	62.5	85	4	.	.	.	.	.	.	2	2	MI	MJ	MJ	MJ	
TL83-789		64.8	47.6	62	1	11.4	63.0	90	4	.	.	.	.	.	.	2	2	MI	MJ	MJ	MJ	
TL83-790		64.8	51.3	65	1	11.0	64.0	85	5	.	.	.	.	.	.	2	2	MI	MJ	MJ	MJ	
TL83-791		64.8	58.1	85	1	10.8	65.5	80	5	.	.	.	.	.	.	2	2	MI	MJ	MJ	MJ	
TL83-792		65.6	49.8	71	1	11.2	64.0	80	3	.	.	.	.	.	.	2	2	MI	MJ	MJ	MJ	
TL83-793		64.0	51.0	74	1	11.4	63.0	85	3	.	.	.	.	.	.	2	2	MI	MJ	MJ	MJ	
TL83-794		64.8	49.3	72	1	11.3	57.5	70	6	.	.	.	.	.	.	1	1	MI	MJ	MJ	MJ	
TL83-795		64.0	54.1	84	1	12.8	56.5	80	3	.	.	.	.	.	.	2	2	MI	MJ	MJ	MJ	
TL83-796		64.0	51.3	76	1	11.2	57.5	90	3	.	.	.	.	.	.	1	1	MI	MJ	MJ	MJ	
TL83-797		65.6	50.0	80	1	11.8	57.5	85	3	.	.	.	.	.	.	1	1	MI	MJ	MJ	MJ	
TL83-798		63.2	55.6	90	1	11.0	57.0	85	4	.	.	.	.	.	.	1	1	MI	MI	MI	MI	
TL83-799		63.2	49.5	79	1	11.6	56.5	70	6	.	.	.	.	.	.	1	1	MI	MI	MI	MI	
TL83-800		64.8	53.8	85	1	11.3	53.5	85	4	.	.	.	.	.	.	1	1	MI	MJ	MJ	MJ	
TL83-801		64.0	49.5	75	1	12.3	58.0	75	5	.	.	.	.	.	.	1	1	MI	MI	MI	MI	
TL83-802		64.0	46.3	68	1	12.4	57.5	70	5	.	.	.	.	.	.	1	1	MI	MI	MI	MI	
TL83-803		63.2	49.0	71	1	11.4	58.5	80	3	.	.	.	.	.	.	1	1	MI	MJ	MJ	MJ	
TL83-804		63.2	55.2	87	1	12.0	57.5	90	3	.	.	.	.	.	.	1	1	MI	MI	MI	MI	
TL83-805		64.8	43.1	84	1	12.2	60.0	85	2	.	.	.	.	.	.	3	3	MI	MI	MI	MI	
TL83-806		63.2	53.8	76	1	11.6	59.0	85	7	.	.	.	.	.	.	2	2	MI	MI	MI	MI	
TL83-807		63.2	52.4	83	1	11.3	57.5	80	5	.	.	.	.	.	.	1	1	MI	MI	MI	MI	
TL83-808		64.0	57.1	86	1	11.6	60.0	80	6	.	.	.	.	.	.	3	3	MI	MI	MI	MI	
TL83-809		62.4	50.5	73	1	11.4	58.5	85	5	.	.	.	.	.	.	1	1	MI	MI	MI	MI	
TL83-810		61.6	54.3	82	1	11.7	58.5	75	5	.	.	.	.	.	.	1	1	MI	MI	MI	MI	
TL83-815		61.6	57.3	79	1	11.6	60.5	80	4	.	.	.	.	.	.	3	3	MI	MI	MI	MI	

DEFICIENCIES
 AVG OF STANDARDS TW KW SM WP TX SX DU SK SP VI FR
 MINOR FAULTING VALUES 64.4 48.1 1 11.3 : : : : :
 MAJOR FAULTING VALUES 62.2 46.0 6 12.5 : : : : :
 **EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1963 CROP

STATE=CALIFORNIA STATION=IMPERIAL VALLEY NURSERY=PRELIMINARY

TABLE 22

VARIETY	STD	TW	1000 KWT	LG	SM	X	WHT PRO	TCT EXT	CEMC EXT	DUS	MX	SPK	MIN	SEM	FALL NO	PRC	VI	FIRM	RES	VALU	**	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR	DEFICIENCIES			
MEX175 (322/41)	S	63.8	50.3	79	1	13.2			54.5	65	4									4																
322/2		62.4	47.8	75	2	13.5			57.5	70	7									4		MI														
322/3		64.4	54.6	87	1	13.9			58.5	75	4									4		MI														
322/4		64.2	47.1	71	1	15.0			56.5	65	8									4		MI														
322/5		61.1	48.5	78	1	14.9			52.5	65	8									4		MI														
322/6		62.7	52.4	78	1	14.3			58.5	60	8									4		MI														
322/7		63.5	46.9	73	2	14.5			55.5	60	7									4		MI														
322/8		61.9	53.5	85	1	15.2			57.0	65	4									4		MI														
322/9		62.7	47.1	74	1	13.6			59.0	80	5									4		MI														
322/10		64.2	51.8	79	2	12.9			60.5	75	6									4		MI														
322/11		63.4	50.8	77	1	14.4			58.5	75	6									4		MI														
322/12		57.8	36.1	50	3	14.9			49.1	70	7									1		MJ														
322/13		63.5	46.7	73	1	12.4			53.5	70	6									1		MJ														
322/14		61.5	44.6	77	2	14.5			54.5	55	8									3		MJ														
322/15		61.1	55.2	83	1	13.8			56.5	70	8									1		MJ														
322/16		64.5	58.8	89	2	14.1			58.5	65	6									4		MI														
322/17		62.9	50.3	75	2	13.7			56.5	65	4									4		MI														
322/18		62.2	47.8	81	1	15.9			54.0	75	6									4		MI														
322/19		63.5	53.5	82	1	13.7			57.5	65	6									4		MI														
322/20		63.2	53.2	84	1	13.5			56.5	85	6									4		MI														
322/21		62.1	51.8	80	1	15.5			49.0	70	8									4		MI														
322/22		59.8	52.6	75	1	14.4			50.5	80	7									4		MI														
322/23		63.8	58.8	87	1	14.3			58.5	75	7									4		MI														
322/24		61.9	55.2	82	1	14.0			57.0	70	6									4		MI														
322/25		63.0	44.1	69	2	13.7			58.5	80	5									3		MJ														
322/26		63.7	47.1	79	2	14.2			59.5	90	5									4		MJ														
322/27		61.8	49.8	78	3	15.2			55.0	75	4									4		MJ														
322/28		62.7	47.4	72	1	13.4			56.0	85	4									4		MI														
322/29		63.5	40.3	67	1	13.2			57.0	75	7									3		MJ														
322/30		63.0	51.0	90	1	13.7			54.5	85	7									4		MI														
322/31		62.9	46.9	78	1	14.7			57.5	75	3									4		MI														
322/32		63.0	42.5	67	2	14.5			57.5	80	4									4		MI														
322/33		64.3	40.8	63	1	13.5			58.0	90	4									3		MJ														
322/34		63.0	44.4	75	1	13.4			55.5	65	6									3		MJ														
322/35		62.2	44.4	65	2	13.8			54.0	85	6									3		MJ														
322/36		62.7	43.9	68	1	14.2			54.0	95	6									3		MJ														
322/37		64.2	46.5	78	1	15.2			60.0	65	5									4		MI														

DEFICIENCIES TW KW SM WP TX SX DU SK SP VI FR
 AVG OF STANDARDS 63.8 50.3 1 13.2 . 54.5 65 . 11.5 . .
 MINOR FAULTING VALUES 61.6 48.2 6 12.5 . 51.5 55 . 11.0 . .
 MAJOR FAULTING VALUES 60.7 45.2 11 11.5 . 50.5 50 . 11.0 . .
 **EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1/83 CHOP

TABLE 22 (Cont.)

STATE=CALIFORNIA STATION=IMPERIAL VALLEY NURSERY=PRELIMINARY

VARIETY	STD TW	1000 KWT	LG-SM %	WHT PRO	TCT EXT	SEMO EXT	DUS MX	SPK MIN	SEMO FALL NO	SEMO PRG	VI	FIRM	RES	VALU	##	TW	KW	SM	WP	MI	DU	SK	SP	VI	FR	DEFICIENCIES		
MEX175 (322/41)	S	63.8	50.3	79	1	13.2	65	4	54.5	SEMO EXT	SEMO PRG	VI	FIRM	RES	VALU	##	TW	KW	SM	WP	MI	DU	SK	SP	VI	FR	DEFICIENCIES	
322/72		62.1	52.6	77	1	13.8	75	8	60.5						4	4												
322/75		61.3	51.8	83	1	14.7	85	6	57.0						4	4	MI											
322/76		61.8	55.9	86	1	14.2	80	8	55.0						4	4	MI	MI										
322/77		61.3	46.3	73	1	14.5	85	8	53.0						4	4	MI	MI										
322/79		61.3	42.7	70	1	14.5	75	8	55.3						4	4	MI	MJ										
322/80		62.6	51.3	75	2	13.3	75	4	58.0						4	4	MI	MJ										
322/87		61.1	41.5	62	2	15.0	65	7	54.5						3	3	MI	MJ										
322/90		62.4	44.8	65	3	12.5	70	4	55.0						2	2	MJ			MI								
322/93		60.0	57.3	82	2	15.4	70	3	59.0						3	3	MJ											
322/95		62.4	48.8	81	1	14.4	85	5	58.5						4	4	MJ	MI										
322/96		60.2	46.3	71	2	14.1	85	5	56.0						4	4	MJ	MI										
322/100		62.6	53.5	81	2	13.4	75	5	60.0						4	4	MJ	MI										
322/101		61.4	52.1	76	2	14.8	75	8	52.5						4	4	MI	MJ										
322/102		61.3	39.7	49	2	14.2	35	8	56.5						1	1	MI	MJ										MJ
322/104		61.9	47.1	72	2	14.1	80	8	58.0						4	4	MI	MI										
322/105		61.9	51.8	79	1	15.1	85	8	56.5						4	4	MJ											
322/106		61.6	43.7	71	1	13.4	90	8	54.0						3	3	MJ											
322/107		64.2	44.8	68	2	13.9	70	9	57.5						3	3	MJ											
322/108		63.5	44.8	66	2	14.6	70	8	57.0						4	4	MJ											
322/109		63.0	51.3	77	1	14.9	80	6	59.4						4	4	MJ											
322/110		64.0	44.2	70	1	14.3	85	7	57.5						3	3	MJ											
322/111		61.3	50.8	72	1	15.5	85	8	36.5						2	2	MI	MI										MJ
322/112		60.8	42.4	57	3	13.2	70	7	54.0						3	3	MI	MJ										
322/114		62.1	45.0	71	2	14.0	90	7	58.0						3	3	MJ											
322/119		62.9	48.8	79	1	14.1	80	7	59.0						4	4	MJ											
322/120		63.8	39.7	59	3	12.3	50	6	60.5						1	1	MJ			MI								MJ
322/121		65.0	38.5	55	1	12.6	75	5	60.0						3	3	MJ											
322/124		62.2	40.2	53	2	13.9	85	5	55.5						4	4	MJ											
322/125		64.5	51.5	80	1	13.8	80	7	58.0						4	4	MJ											
322/126		64.2	50.8	83	1	13.8	80	7	58.5						4	4	MJ											
322/127		61.2	45.7	79	1	14.3	90	7	56.0						4	4	MJ			MI								
322/130		64.5	50.8	82	1	13.1	85	3	56.5						4	4	MJ											
322/131		63.8	48.1	77	1	13.7	80	3	57.5						4	4	MJ			MI								
322/132		58.6	52.1	78	1	14.2	70	3	58.0						3	3	MJ											
322/133		60.5	49.0	73	1	13.4	70	6	55.0						3	3	MJ											
322/136		61.6	48.1	78	1	15.7	70	8	55.0						4	4	MJ			MI								
322/137		60.2	50.0	80	1	14.7	85	3	54.5						3	3	MJ											

DEFICIENCIES TW KW SM WP TX SX DU SK SP VI FR
 AVG CF STANDARDS 63.8 50.3 1 13.2 . 54.5 65 .
 MINOR FAULTING VALUES 61.6 48.2 6 12.5 . 51.5 55 .
 MAJOR FAULTING VALUES 60.7 45.2 11 11.5 . 50.5 50 .
 **EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

TABLE 22 (Cont.)

QUALITY DATA OF CURUM SAMPLES 1983 CROP

STATE=CALIFORNIA STATION=IMPERIAL VALLEY NURSERY=PRELIMINARY

VARIETY	STD	TW	1000 KWT	LG	% SM	WHT PRO	TCT EXT	SEMC EXT	DUS	MX	SPK	MIN	FALL NC	SEMO PRO	VI	FIRM	RES	VALU	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR	DEFICIENCIES
MEX175 (322/41)	S	63.8	50.3	79	1	13.2	.	54.5	65	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/202		63.8	47.4	75	1	14.4	.	54.5	90	2	.	.	.	.	.	.	.	.	.	MI	.	.	.	.	.	.	.	.	.	.
322/203		62.6	46.3	70	1	15.2	.	55.5	95	5	.	.	.	.	.	.	.	.	.	MI	.	.	.	.	.	.	.	.	.	.
322/204		63.4	46.3	78	1	15.3	.	54.5	80	4	.	.	.	.	.	.	.	.	.	MI	.	.	.	.	.	.	.	.	.	.
322/205		60.3	50.8	81	1	16.0	.	51.5	80	8	.	.	.	.	.	.	.	.	.	NJ	.	.	.	.	.	.	.	.	.	MI
322/206		61.8	51.5	92	1	15.3	.	53.5	95	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/208		62.1	54.6	75	2	14.5	.	57.5	75	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/209		62.9	46.7	71	2	13.7	.	54.0	70	8	.	.	.	.	.	.	.	.	.	MI	.	.	.	.	.	.	.	.	.	.
322/210		61.4	45.7	63	2	14.1	.	52.5	70	6	.	.	.	.	.	.	.	.	.	MI	.	.	.	.	.	.	.	.	.	.
322/211		62.6	51.0	75	1	14.1	.	52.5	70	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/212		61.6	48.8	71	1	15.3	.	52.0	70	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/213		62.2	49.0	75	1	14.4	.	54.0	80	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/216		63.0	51.8	79	1	15.1	.	50.5	85	7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/218		62.1	50.8	73	1	15.8	.	52.5	65	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/222		63.0	56.2	83	1	15.7	.	53.0	85	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/223		62.7	52.6	76	1	16.1	.	54.5	75	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/225		61.1	53.8	83	1	13.9	.	54.5	70	7	.	.	.	.	.	.	.	.	.	MI	.	.	.	.	.	.	.	.	.	.
322/226		60.8	54.6	83	1	14.7	.	56.0	80	5	.	.	.	.	.	.	.	.	.	MI	.	.	.	.	.	.	.	.	.	.
322/227		55.7	49.0	71	1	15.1	.	51.0	85	8	.	.	.	.	.	.	.	.	.	MJ	.	.	.	.	.	.	.	.	.	.
322/228		61.1	54.1	87	1	13.9	.	55.0	80	7	.	.	.	.	.	.	.	.	.	MI	.	.	.	.	.	.	.	.	.	.
322/234		63.0	55.9	85	1	12.0	.	54.5	80	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/238		63.5	40.7	62	2	12.6	.	54.0	90	6	.	.	.	.	.	.	.	.	.	MJ	.	.	.	.	.	.	.	.	.	.
322/239		63.8	48.5	71	3	12.5	.	57.5	85	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/240		64.8	52.1	79	1	12.6	.	58.5	70	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/241		64.0	49.8	74	1	13.0	.	56.5	80	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/242		64.0	47.4	69	1	13.1	.	55.5	80	7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/244		64.8	55.6	84	1	12.6	.	54.5	65	7	.	.	.	.	.	.	.	.	.	MI	.	.	.	.	.	.	.	.	.	.
322/245		64.6	52.1	79	1	13.3	.	55.5	75	7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/246		64.6	50.3	75	1	11.7	.	56.5	65	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/247		64.8	49.3	82	1	12.6	.	54.0	80	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/248		65.6	50.5	79	1	12.3	.	57.5	85	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/249		62.6	51.3	79	1	13.1	.	54.5	80	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/250		63.0	55.5	81	1	13.7	.	57.5	65	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/251		62.7	52.6	82	1	13.9	.	56.5	70	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/252		60.6	43.1	70	1	16.2	.	52.0	90	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/253		64.0	53.2	80	1	13.0	.	57.5	75	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/254		63.0	49.5	81	1	14.7	.	57.0	70	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
322/256		64.0	45.8	68	2	13.2	.	56.5	70	7	.	.	.	.	.	.	.	.	.	MI	.	.	.	.	.	.	.	.	.	.

DEFICIENCIES TW KW SM WP TX SX DU SK SF VI FR
 AVG OF STANDARDS 63.8 50.3 1 13.2 . 54.5 65 . . .
 MINOR FAULTING VALUES 61.6 48.2 6 12.5 . 51.5 55 . 11.5 . .
 MAJOR FAULTING VALUES 60.7 45.2 11 11.5 . 50.5 50 . 11.0 . .
 **EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1983 CROP

TABLE 22 (Cont.)

STATE=CALIFORNIA STATION=IMPERIAL VALLEY NUMBER=PRELIMINARY

VARIETY	STD	TW	1000 KWT	LG	% SM	WHT TCT	SEMO FALL	DUS	MX	SPK	MIN	NC	PRO	VI	FIRM	RES	VALU	**	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR	
MEX1175 (322/41)	S	63.8	50.3	79	1	13.2		54.5	4																					
322/258		64.0	54.6	89	1	14.4		58.0	7																					
322/259		64.1	45.3	77	1	13.2		57.5	80																					
322/260		63.2	52.9	37	1	15.9		55.0	70																					
322/261		65.4	54.1	86	2	13.5		58.0	70																					
322/262		64.5	45.2	65	2	13.4		55.0	70																					
322/263		61.4	55.2	78	2	14.1		56.5	75																					
322/264		62.2	49.3	77	1	13.4		58.0	65																					
322/265		64.0	53.2	81	1	15.7		57.0	75																					
322/266		63.5	48.3	75	1	15.1		56.5	75																					
322/267		64.0	48.1	73	1	14.2		57.0	70																					
322/268		63.2	61.7	91	1	14.2		58.5	80																					
322/269		62.7	59.5	88	1	14.3		60.0	75																					
322/270		62.4	32.8	35	2	11.6		57.0	40																					
322/271		61.4	52.4	75	2	14.1		51.4	65																					
322/272		62.6	56.5	85	1	14.0		58.5	75																					
322/273		63.8	59.2	87	1	13.1		61.5	75																					
322/274		61.8	55.6	85	1	13.0		59.5	75																					
322/275		63.0	56.2	81	2	13.7		61.0	85																					
322/277		59.5	44.1	63	3	15.2		58.5	75																					
322/278		61.0	48.3	74	1	16.1		52.5	75																					
322/279		62.6	50.3	76	2	13.6		57.5	75																					
322/280		61.8	47.8	67	2	15.1		54.5	80																					
322/281		59.8	50.3	80	1	15.1		55.5	70																					
322/282		61.1	55.2	89	1	14.8		55.5	75																					
322/283		62.6	51.3	76	1	13.9		55.0	75																					
322/286		62.7	49.8	81	1	15.6		55.0	80																					
322/288		64.0	54.9	83	1	14.6		55.5	80																					
322/289		64.3	57.3	89	1	13.5		55.0	70																					
322/290		63.8	60.6	89	1	14.4		54.5	70																					
322/293		63.8	57.3	89	1	14.5		54.5	65																					
322/295		61.1	48.8	80	1	14.7		53.0	90																					
322/296		61.8	46.7	77	1	14.7		50.5	80																					
322/298		62.7	45.7	75	1	14.0		53.5	80																					
322/299		64.2	43.5	73	1	12.1		54.0	80																					
322/300		62.6	42.9	55	3	14.1		52.5	35																					
322/301		64.0	42.7	71	1	14.6		54.5	75																					
322/305		62.2	40.7	54	2	12.7		57.5	90																					

DEFICIENCIES TW KW SM WP TX SX CU SK SP VI FR
 AVG CF STANDARDS 63.8 50.3 1 13.2 . . 54.5 65 . . .
 MINOR FAULTING VALUES 61.6 48.2 6 12.5 . . 51.5 55 . . .
 MAJOR FAULTING VALUES 60.7 45.2 11 11.5 . . 50.5 50 . . .
 **EVALUATION 1=NC PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1983 CRUP

TABLE 22 (Cont.)

STATE=CALIFORNIA STATION=IMPERIAL VALLEY NURSERY=PRELIMINARY

VARIETY	SID	TW	1000 KWT	LG	SM	WHT PRO	EXT	EXT	SLMO	DUS	MX	SPK	MIN	NC	FALL	SEMU	VI	FIRM	RES	VALU	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR				
MEX175 (322/41)	S	63.8	50.3	79	1	13.2		54.5	65	4																									
322/311		62.1	51.3	81	1	15.6		55.0	70	8																									
322/320		61.9	61.0	88	1	13.4		55.0	80	7											MI														
322/321		61.4	51.5	73	3	13.1		55.5	95	7												MI													
322/324		63.4	46.5	69	1	15.1		54.5	70	7												MI													
322/326		62.7	50.3	72	1	14.4		53.0	75	7																									
322/327		62.7	47.8	67	2	13.3		54.0	60	5												MI													
322/328		64.5	47.1	75	1	14.1		54.5	85	6												MI													
322/329		64.2	52.1	77	1	13.8		56.0	85	7																									
322/330		58.9	51.5	74	2	14.3		51.5	80	8												MJ													
322/332		63.7	46.3	76	1	15.0		51.0	80	8												MI													
322/333		62.4	42.9	62	2	12.3		53.5	60	5													MJ												
322/335		64.3	48.5	65	2	13.0		56.0	75	7																									
322/336		62.4	47.8	69	2	13.0		53.5	70	6																									
322/337		61.3	48.3	78	2	14.4		55.5	75	4												MI													
322/338		62.2	52.6	78	2	13.9		55.0	75	5																									
322/339		60.6	47.8	74	2	15.7		52.5	75	6												MJ													
322/340		61.3	50.8	77	1	15.4		55.0	75	5												MI													

DEFICIENCIES

AVG OF STANDARDS 63.8 50.3 1 13.2
 MINOR FAULTING VALUES 61.6 48.2 6 12.5
 MAJOR FAULTING VALUES 60.7 45.2 11 11.5

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1983 CROP

STATE OF CALIFORNIA - STATION: IMPERIAL VALLEY - NON-SERIALIZED - PRELIMINARY

TABLE 22A

VARIETY	STD TW	1000 KWT LG-5M	%	WHT PRO EXT	SEM0 EXT	DUS MX	SPK MIN	SEM0 FALL NC	VI	FIRM	RES VALU	**	TW	KW	SM	MP	TX	SX	DU	SK	SP	VI	FR	
1983 N.O. STD.	S	61.6	46.3	51	2	14.0																		
322/2		62.8	47.8	75	2	13.5						4												MJ
322/3		64.4	54.6	87	2	13.9						1												MJ
322/4		64.2	47.1	71	1	15.0						1												MJ
322/5		61.1	48.5	78	1	14.3						1												MJ
322/6		62.7	52.4	73	2	14.5						1												MJ
322/7		63.5	46.9	73	2	14.5						1												MJ
322/8		61.9	53.5	85	1	15.2						2												MI
322/9		62.7	47.1	74	1	13.6						1												MJ
322/10		64.2	51.8	77	2	12.9						1												MJ
322/11		63.4	50.8	77	1	14.4						1												MJ
322/13		57.8	36.1	50	3	14.9						1												MJ
322/15		63.5	46.7	73	1	12.4						1												MJ
322/17		61.9	44.6	77	2	14.5						1												MJ
322/18		61.9	44.6	77	2	14.5						1												MJ
322/19		61.1	55.2	83	1	13.8						1												MJ
322/20		63.7	46.5	72	2	14.1						1												MJ
322/21		64.5	58.8	89	1	13.3						1												MJ
322/23		62.9	50.3	75	2	13.7						1												MJ
322/26		62.2	47.8	81	1	15.9						1												MJ
322/27		63.5	53.5	82	1	13.7						1												MJ
322/29		63.2	53.2	84	1	13.5						4												MJ
322/30		62.1	51.8	80	1	15.5						1												MJ
322/32		59.8	52.6	75	1	14.4						1												MJ
322/33		63.8	58.8	87	1	14.3						1												MJ
322/34		61.9	55.2	82	1	14.0						1												MJ
322/35		63.0	44.1	69	2	13.7						2												MI
322/37		63.7	47.1	79	2	14.2						4												MJ
322/38		61.8	49.8	78	3	15.2						4												MJ
322/39		62.7	47.4	72	1	13.4						1												MJ
322/40		63.8	50.3	79	1	13.2						1												MJ
322/41		63.5	40.3	67	1	13.2						1												MJ
322/42		63.0	51.0	80	1	13.7						4												MJ
322/49		62.9	46.9	78	1	14.7						1												MJ
322/53		63.0	42.9	67	2	14.5						2												MI
322/58		64.3	40.8	63	1	13.5						3												MI
322/60		63.0	44.4	75	1	13.4						1												MJ
322/65		62.2	44.4	63	2	13.8						4												MJ
322/66		62.7	43.9	68	1	14.2						4												MJ
322/67		64.2	46.5	78	1	15.2						1												MJ

DEFICIENCIES
 AVG OF STANDARDS 61.6 46.3 2 14.0
 MINOR FAULTING VALUES 59.4 44.2 7 12.5
 MAJOR FAULTING VALUES 58.5 41.2 12 11.5
 **EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1983 CRGP

STATE=CALIFORNIA STATION=IMPERIAL VALLEY PURSUE=PRELIMINARY

VARIETY	STD	TW	1000 KWT	LG	% SM	WHY PRO	TCI EXT	SEMJ EXT	DUS	MX	SPK	MIN	FALL NC	SEMJ PRO	VI	FIRM	RES	VALU	**	TW	KW	SM	WP	TX	DU	SK	SP	VI	FR		
1983 N.D.	STD.	S	61.6	46.3	51	2	14.0	56.5	90	7									4		MI										
322/138			59.8	42.4	63	2	14.3	58.0	85	7									4		MI										
322/140			64.3	50.5	83	1	13.2	56.0	75	5									1		MI										
322/146			61.1	41.7	84	1	15.7	54.0	80	5									2		MI										
322/148			61.4	42.7	57	2	13.7	55.0	85	6									4		MI										
322/150			62.4	43.9	58	2	13.5	53.5	40	8									1		MI										
322/151			63.0	46.9	74	1	14.4	59.0	80	7									2		MI										
322/154			62.1	46.1	75	1	14.7	57.5	75	5									1		MI										
322/155			62.6	51.0	75	1	14.2	58.0	70	5									1		MI										
322/160			63.0	38.9	55	3	14.1	53.5	85	7									2		MJ										
322/161			63.5	45.0	69	2	14.3	55.0	75	7									1		MI										
322/163			64.2	52.1	84	1	14.9	60.0	65	5									4												
322/164			64.2	50.8	82	1	14.3	58.0	85	5									4												
322/166			63.7	55.2	85	1	15.3	56.5	85	5									4												
322/167			62.7	52.4	79	1	14.1	57.5	80	3									2												
322/168			62.4	44.6	77	1	15.2	57.5	90	3									4												
322/172			62.7	46.3	77	1	14.0	59.0	95	3									4												
322/173			62.2	43.1	71	1	16.8	53.5	75	4									1		MI										
322/174			61.8	45.8	73	1	15.0	54.0	75	4									1		MJ										
322/175			63.5	47.8	71	1	15.9	55.5	75	5									4		MJ										
322/176			62.9	44.4	77	1	15.2	55.0	85	7									4												
322/177			62.4	46.7	80	1	15.0	55.0	70	7									1												
322/180			61.3	46.7	84	1	12.7	52.5	85	4									2		MI										
322/182			62.4	44.4	69	1	14.8	54.5	50	4									4												
322/184			62.7	45.2	69	1	14.8	55.0	90	4									4												
322/185			62.6	44.4	78	1	15.0	53.3	75	4									4		MI										
322/186			62.6	44.6	74	1	14.9	54.0	80	4									2		MJ										
322/187			62.1	46.7	69	1	14.7	51.0	75	4									1		MJ										
322/189			63.4	43.9	63	1	14.0	54.0	95	4									4		MI										
322/190			62.9	42.7	70	1	16.1	52.5	80	2									1		MI										
322/191			64.6	50.3	80	1	14.2	55.5	80	1									2												
322/192			64.5	48.5	78	1	13.8	55.5	90	3									4												
322/193			63.4	51.3	86	1	14.9	56.0	75	5									1												
322/194			63.5	51.3	98	1	15.2	57.0	70	6									1												
322/195			63.5	47.6	75	1	13.9	52.5	90	3									2												
322/197			62.1	42.6	63	2	14.4	52.0	85	2									2		MI										
322/200			62.5	46.5	73	1	15.0	50.5	75	2									1												
322/201			62.2	47.1	68	1	15.1	52.5	85	1									2												

DEFICIENCIES
 AVG CF STANDARDS 61.6 46.3 2 14.0
 MINOR FAULTING VALUES 59.4 44.2 7 12.5
 MAJOR FAULTING VALUES 55.5 41.2 12 11.5

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

TABLE 22A (Cont.)

STATE=CALIFORNIA STATION=IMPERIAL VALLEY NURSERY=PRELIMINARY

DEFICIENCIES
 TX SK DU SK SP VI FR
 WP SM KW TW VALU **

VARIETY	STD	TW	1000 KWT	LG	SM %	WHT PRO	EXT	SEM0 EXT	DUS	MY	SPK	MIN	NC	FALL	SEM0 PRJ	VI	FIRM	RES	VALU	**	TW	KW	SM	WP	TX	SK	DU	SK	SP	VI	FR
1983 N.D. STD.	S	61.6	46.3	51	2	14.0	.	56.5	90	7	.	.	.	.	.	.	.	.	.	?	.	.	.	.	.	.	.	.	.	.	.
322/202		63.8	47.4	75	1	14.4	.	54.5	90	2	.	.	.	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.
322/203		62.6	46.3	70	1	15.2	.	55.5	95	5	.	.	.	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.
322/204		63.4	46.3	78	1	15.3	.	54.5	80	4	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
322/205		60.3	50.8	81	1	16.0	.	51.5	80	8	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/206		61.8	51.5	82	1	15.3	.	53.5	95	6	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.
322/208		62.1	54.6	75	2	14.5	.	57.5	75	8	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/209		62.5	46.7	71	2	13.7	.	54.0	70	2	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/210		61.4	45.7	63	2	14.1	.	52.5	70	4	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/211		62.6	51.0	75	1	14.1	.	52.5	70	4	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/212		61.6	48.8	71	1	15.3	.	52.0	70	5	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/213		62.2	49.0	75	1	14.4	.	54.0	80	6	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
322/216		63.0	51.8	79	1	15.1	.	50.5	55	7	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/218		62.1	50.8	73	1	15.9	.	52.5	65	6	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/222		63.0	56.2	83	1	15.7	.	53.0	55	4	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.
322/223		62.7	52.6	70	1	16.1	.	54.5	75	5	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.
322/225		61.1	53.8	83	1	13.9	.	54.5	70	7	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/226		60.6	54.6	83	1	14.7	.	56.0	80	5	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
322/227		55.7	49.0	71	1	15.1	.	51.0	85	8	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/228		61.1	54.1	77	1	13.9	.	55.0	50	7	.	.	.	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.
322/234		63.0	55.9	85	1	12.0	.	54.5	50	6	.	.	.	.	.	.	.	.	.	3	.	MJ	.	.	.	.	.	.	.	.	.
322/238		63.5	40.7	62	2	12.6	.	54.0	50	6	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.
322/239		63.8	48.5	71	3	12.9	.	57.5	65	6	.	.	.	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.
322/240		64.8	52.1	79	1	12.6	.	58.5	70	8	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/241		64.0	49.8	74	1	13.0	.	56.5	80	8	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
322/242		64.0	47.4	69	1	13.1	.	55.5	80	7	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
322/244		64.8	55.6	84	1	12.6	.	54.5	65	7	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/245		64.6	52.1	79	1	13.3	.	55.5	75	7	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/246		64.6	50.3	75	1	11.7	.	56.5	65	4	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/247		64.8	49.3	82	1	12.6	.	54.0	80	8	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/248		65.6	50.5	79	1	12.3	.	57.5	85	5	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
322/249		62.6	51.3	79	1	13.1	.	57.5	80	4	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
322/250		63.0	55.5	81	1	13.7	.	54.5	65	5	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/251		62.7	52.6	82	1	13.9	.	56.5	70	5	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/252		60.6	43.1	70	1	16.2	.	52.0	50	5	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/253		64.0	53.2	80	1	13.0	.	57.5	75	4	.	.	.	.	.	.	.	.	.	2	.	MI	.	.	.	.	.	.	.	.	.
322/254		63.0	49.5	81	1	14.7	.	57.5	70	4	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
322/256		64.0	45.8	68	2	13.2	.	56.5	70	7	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.

DEFICIENCIES TW KW SM WP TX SK DU SK SP VI FR

AVG CF STANDARDS 61.6 46.3 2 14.0 . 56.5 90 . 11.5 . . .
 MINOR FAULTING VALUES 59.4 44.2 7 12.5 . 53.5 80 . 11.0 . . .
 MAJOR FAULTING VALUES 58.5 41.2 12 11.5 . 52.5 75 . 11.0 . . .

◆EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1983 CACP

STATE=CALIFORNIA STATION=IMPERIAL VALLEY NURSERY=PRELIMINARY

TABLE 22A (Cont.)

VARIETY	STD	TW	1000 KWT	LG_SM	X	WHT PRO	TCT EXT	SEMC EXT	DUS	MX	SPK	MIN	SEMC FALL NO	PRO	VI	FIRM	RES	VALU	**	TV	KW	SN	WP	TX	SX	DU	SK	SP	VI	FR	
1983 N.O. SID.	S	61.6	46.3	51	2	14.0	.	50.5	90	7	.	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/258		64.0	54.6	89	1	14.4	.	58.0	70	7	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MI
322/259		64.1	49.3	77	1	13.2	.	57.5	80	7	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/260		63.2	52.9	97	1	15.9	.	55.0	70	9	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/261		55.4	54.1	86	1	13.5	.	58.0	70	6	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/262		64.5	45.2	65	2	13.4	.	55.0	70	8	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/263		61.4	55.2	78	2	14.1	.	56.5	75	8	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/264		62.2	49.3	77	1	13.4	.	58.0	65	8	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/265		64.0	53.2	81	1	15.3	.	57.0	75	8	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/266		63.5	48.3	75	1	15.1	.	56.5	75	8	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/267		64.0	48.1	73	1	14.2	.	57.0	70	8	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/268		63.2	61.7	91	1	14.2	.	53.5	80	8	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	MI
322/269		62.7	59.5	88	1	14.3	.	60.0	75	8	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/270		62.4	32.8	35	8	11.6	.	57.0	40	6	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/271		61.4	52.4	75	2	14.1	.	51.4	65	6	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/273		62.6	56.5	85	1	14.0	.	58.5	75	5	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/274		63.8	59.2	87	1	13.1	.	61.5	75	4	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/275		61.8	55.6	85	1	13.0	.	58.5	75	4	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/276		63.0	56.2	81	2	13.7	.	61.0	85	5	.	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/277		59.5	44.1	63	3	15.2	.	58.5	75	7	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/278		61.0	48.3	74	1	16.1	.	52.5	75	7	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/279		62.6	50.3	76	2	13.6	.	57.5	75	7	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/280		61.8	47.8	67	2	15.1	.	54.5	80	6	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/281		59.8	50.3	80	1	15.1	.	55.5	70	8	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/282		61.1	55.2	89	1	14.8	.	55.0	75	5	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/283		62.6	51.3	76	1	13.9	.	55.0	80	3	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/286		62.7	49.8	81	1	15.6	.	55.0	80	6	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/288		64.0	54.9	83	1	14.6	.	55.5	80	6	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/289		64.3	57.3	89	1	13.5	.	55.0	70	7	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/290		63.8	60.6	89	1	14.4	.	54.5	70	6	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/293		63.8	57.3	89	1	14.5	.	54.5	65	6	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/295		61.1	48.8	80	1	14.7	.	53.0	50	6	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/296		61.8	46.7	77	1	14.7	.	50.5	80	8	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/298		62.7	45.7	75	1	14.0	.	53.5	80	7	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/299		64.2	43.5	73	1	12.1	.	54.0	80	6	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/300		62.6	42.9	55	3	14.1	.	52.5	35	8	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/301		64.0	42.7	71	1	14.6	.	54.5	75	7	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	MJ
322/305		62.2	40.7	54	2	12.7	.	57.5	90	4	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	MJ

DEFICIENCIES TW KW SM WP TX SX DU SK SP VI FR
 AVG OF STANDARDS 61.6 46.3 2 14.0 . .
 MINOR FAULTING VALUES 59.4 44.2 7 12.5 . .
 MAJOR FAULTING VALUES 58.5 41.2 12 11.5 . .

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1983 CHOP

TABLE 22A (Cont.) STATE=CALIFORNIA COUNTY=IMPERIAL VALLEY NURSERY=PRELIMINARY

VARIETY	STD	TW	KAT	% LG SM	WHI PRJ EXT	TOT EXT	SEMO EXT	DUS	MX	SPK	MIN	FALL NO	SEMO PRU	VI	FIRM	RES	VALU	**	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR	DEFICIENCIES
J22/300	S	61.6	46.3	51	2	14.0	56.5	90	7	.	.	.	.	.	.	.	4	.	.	.	.	.	.	MI	MJ	MJ	MJ	MI	MJ
J22/311		64.0	44.2	76	1	14.7	53.5	75	7	.	.	.	.	.	.	.	1	.	.	.	.	.	.	MI	MJ	MJ	MJ	MI	MJ
J22/320		62.1	51.3	81	1	15.8	55.0	80	7	.	.	.	.	.	.	.	2	.	.	.	.	.	.	MI	MJ	MJ	MJ	MI	MJ
J22/321		61.9	61.0	83	1	13.4	55.5	95	7	.	.	.	.	.	.	.	4	.	.	.	.	.	.	MI	MJ	MJ	MJ	MI	MJ
J22/324		61.4	51.5	73	3	13.1	54.5	70	7	.	.	.	.	.	.	.	1	.	.	.	.	.	.	MI	MJ	MJ	MJ	MI	MJ
J22/326		63.4	46.5	69	1	15.1	53.0	75	7	.	.	.	.	.	.	.	1	.	.	.	.	.	.	MI	MJ	MJ	MJ	MI	MJ
J22/327		62.7	50.3	72	1	14.4	54.0	60	5	.	.	.	.	.	.	.	1	.	.	.	.	.	.	MI	MJ	MJ	MJ	MI	MJ
J22/328		64.5	47.1	75	1	14.1	54.5	85	6	.	.	.	.	.	.	.	4	.	.	.	.	.	.	MI	MJ	MJ	MJ	MI	MJ
J22/329		64.2	52.1	77	1	13.8	56.0	85	7	.	.	.	.	.	.	.	4	.	.	.	.	.	.	MI	MJ	MJ	MJ	MI	MJ
J22/330		58.9	51.5	74	2	14.3	51.5	80	8	.	.	.	.	.	.	.	1	.	MI	.	.	.	.	MJ	MI	MJ	MJ	MI	MJ
J22/332		63.7	46.3	76	1	15.0	51.0	80	8	.	.	.	.	.	.	.	1	.	MI	.	.	.	.	MJ	MI	MJ	MJ	MI	MJ
J22/333		62.4	42.9	62	2	12.3	53.5	60	5	.	.	.	.	.	.	.	1	.	MI	.	.	.	.	MJ	MI	MJ	MJ	MI	MJ
J22/335		64.3	48.5	69	2	13.0	56.0	75	7	.	.	.	.	.	.	.	1	.	MI	.	.	.	.	MJ	MI	MJ	MJ	MI	MJ
J22/336		62.4	47.8	69	2	13.0	53.5	70	6	.	.	.	.	.	.	.	1	.	MI	.	.	.	.	MJ	MI	MJ	MJ	MI	MJ
J22/337		51.3	48.3	78	2	14.4	55.5	75	4	.	.	.	.	.	.	.	1	.	MI	.	.	.	.	MJ	MI	MJ	MJ	MI	MJ
J22/338		62.2	52.6	78	2	13.9	55.0	75	5	.	.	.	.	.	.	.	1	.	MI	.	.	.	.	MJ	MI	MJ	MJ	MI	MJ
J22/339		60.6	47.8	74	2	15.7	52.5	75	6	.	.	.	.	.	.	.	1	.	MI	.	.	.	.	MJ	MI	MJ	MJ	MI	MJ
J22/340		61.3	50.8	77	1	15.4	55.0	75	5	.	.	.	.	.	.	.	1	.	MI	.	.	.	.	MJ	MI	MJ	MJ	MI	MJ

DEFICIENCIES
 AV. OF STANDARDS TW KW SM WP TX SX DU SK SP VI FR
 MINOR FAULTING VALUES 61.6 46.3 2 14.0 . 56.5 90 . 11.5 .
 MAJOR FAULTING VALUES 59.4 44.2 7 12.5 . 53.5 80 . 11.0 .

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

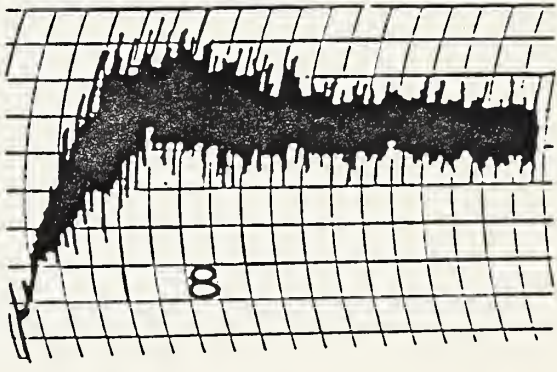
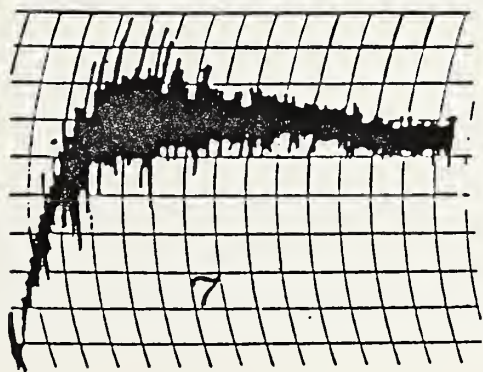
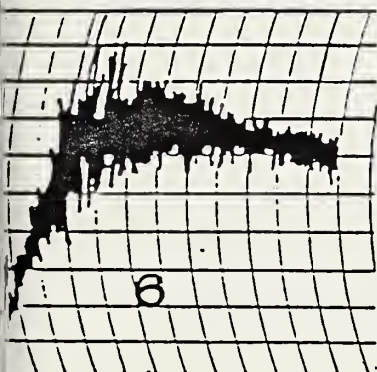
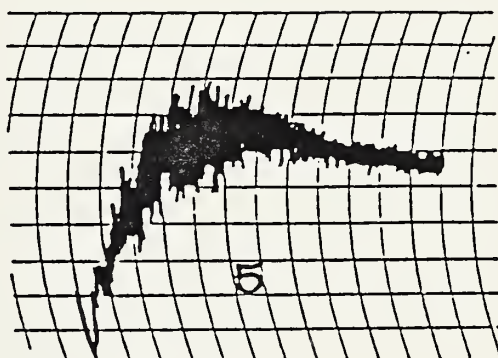
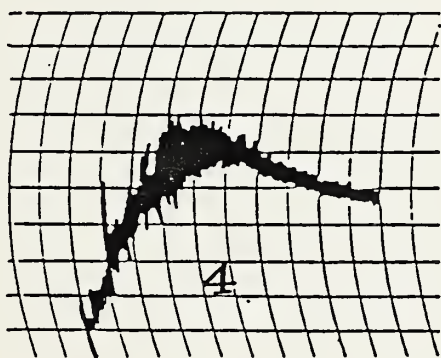
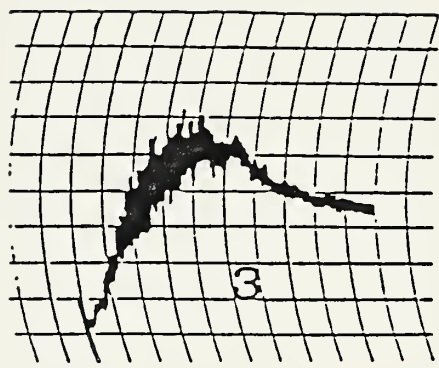
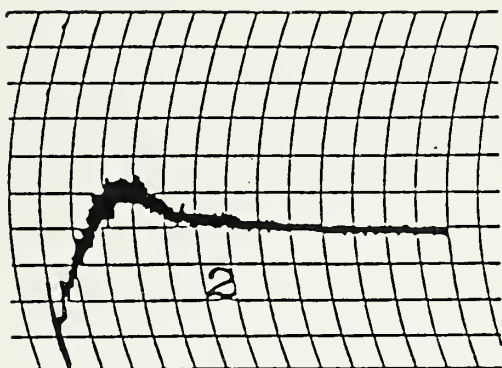
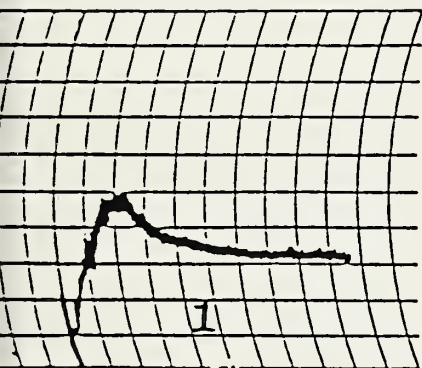
QUALITY DATA OF DURUM SAMPLES 1983 CROP

STATE=CALIFORNIA STATION=IMPERIAL VALLEY NURSERY=PRELIMINARY

TABLE 22A (Cont.)

VARIETY	STD	TW	1000 NAT	% LG SM	WHT PRD	TOT EXT	SEMO EXT	DUS	MX	SPK	SEMO MIN	FALL NO	PRO	VI	FIRM	RES	VALU	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR	DEFICIENCIES
J22/300	S	61.6	46.3	51	2	14.0	56.5	90	7								4												MJ
J22/311		64.0	44.2	70	1	14.7	53.5	75	7								1												MJ
J22/320		62.1	51.3	81	1	15.6	55.0	70	8								1												MJ
J22/321		61.9	61.0	89	1	13.4	55.0	80	7								2												MI
J22/324		61.4	51.5	73	3	13.1	55.5	95	7								4												MJ
J22/326		63.4	46.5	69	1	15.1	54.5	70	7								1												MJ
J22/327		62.7	50.3	72	1	14.4	53.0	75	7								1												MJ
J22/328		62.7	47.3	67	2	13.3	54.0	60	5								1												MJ
J22/329		64.5	47.1	75	1	14.1	54.5	85	6								4												MJ
J22/330		64.2	52.1	77	1	13.8	56.0	85	7								4												MJ
J22/332		58.9	51.5	74	2	14.3	51.5	80	8								1	MI											MI
J22/333		63.7	46.3	76	1	15.0	51.0	80	8								1												MI
J22/335		62.4	42.9	62	2	12.3	53.5	60	5								1		MI										MI
J22/336		64.3	48.5	69	2	13.0	56.0	75	7								1												MJ
J22/337		62.4	47.8	69	2	13.0	53.5	70	6								1												MJ
J22/338		61.3	48.3	78	2	14.4	55.5	75	4								1												MJ
J22/339		62.2	52.6	78	2	13.9	55.0	75	5								1												MJ
J22/340		60.6	47.8	74	2	15.7	52.5	75	6								1												MJ
J22/340		61.3	50.8	77	1	15.4	55.0	75	5								1												MJ

DEFICIENCIES TW KW SM WP TX SX DU SK SP VI FR
 AVJ OF STANDARDS 61.6 46.3 2 14.0
 MINOR FAULTING VALUES 59.4 44.2 7 12.5
 MAJOR FAULTING VALUES 58.5 41.2 12 11.5
 **EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE



REFERENCE MIXOGRAMS
DURUM WHEAT

