

RESULTS OF THE FIRST ELITE SELECTION YIELD TRIAL - 1

AND

ELITE SELECTION YIELD TRIAL - 2

1969 - 1970



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RESULTS OF THE FIRST
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RESULTS OF THE FIRST ELITE SELECTION YIELD TRIAL - 1, 1969-1970 (ESYT - 1)

ABSTRACT

The First ELITE Selection Yield Trial Number 1 was composed of 25 spring wheat advanced lines and check varieties selected as outstanding selections from the joint Mexican-CIMMYT bread wheat breeding program. Data, received from 12 locations representative of the major spring wheat regions of the world, include yield, agronomic traits and disease reaction. Location summaries are presented for all traits measured at each reporting location.

INTRODUCTION

The International Bread Wheat Screening Nursery (IBWSN) and the International Spring Wheat Yield Nursery (ISWYN) have given wheat breeders considerable insight into the worth of a vast array of germ plasm. The IBWSN allows the testing of a large number of new lines of relatively unknown character with specific accent on disease reactions. The ISWYN is intended to test varieties which possess desirable traits over a wide range of climatic and edaphic conditions. However, neither the IBWSN nor ISWYN offer breeders an opportunity to assess the performance of newly selected lines of outstanding potential with a minimum of delays. The Elite Selection Yield Trials (ESYT) is an effort to fill this gap.

Limited seed quantities have required us to be more selective than we would prefer. The choice of cooperators was based on our past experience with their enthusiastic participation and a deliberate attempt to extend the range of climatic and disease conditions to which the experiments might be exposed. In this way, it is hoped that many wheat breeders would benefit from the effort of a few by obtaining information on the most advanced material developed in the Mexican wheat breeding program.

The information reported in this section is based on data returned on the First ESYT Number 1, from 12 cooperating scientists. We gratefully acknowledge the importance of these scientists knowing that without their help this program could not function.

METHODS AND MATERIALS

Seed for the First ESYT - 1 was produced in increased plots at the Toluca Station, State of Mexico during the summer of 1969. The seed

was treated with Vitavax (registered trademark for 5, 6 - dihydro -2- methyl -1, 4 oxathiin-3- carboxanilide) desinfectant prior to packeting. The experimental plots usually consisted of six, 2.5 meter rows with four replications. Instructions for seeding, nursery management and note-taking, as well as data sheets, were included with each set of seed sent to the 20 participants.

The twenty-five entries of bread wheat (Triticum Aestivum L.) in the experiment were selected as outstanding advanced lines in tests at the CIANO experiment station in the State of Sonora during the previous crop cycle and at the Toluca Station, State of Mexico just prior to nursery preparation.

Standard Mexican varieties were also selected to serve as experimental checks. Some were selected to represent the parentage of the advanced lines in the nursery. The following table (Test Table 1) lists the entries in the First ESYT - 1 with some pedigree information.

DATA SUMMARIZATION

The metric system and percentages were chosen as the units of measurement for presentation. When possible, other systems were converted to the appropriate standard for presentation. Every effort was made to assure the correctness of such conversions as well as the accuracy of translations of terms from other languages and interpretation of supplementary information. CIMMYT, however, takes full responsibility for any errors that may have been made. Data were neither analyzed nor are presented for traits when no differential effect was observed.

Yield data were requested from the four center rows of a six row plot. Yields were converted from the units reported by the cooperator to kilograms per hectare (Kg/Ha). For readers more accustomed to yield in bushels per acre, 1000 (Kg/Ha) is equivalent to approximately 15 bushels per acre for wheat.

Both test weights and 1000 grain weights were requested because some cooperators do not have test weight equipment. The weights are reported in kilograms per hectoliter (Kg/Hl) and 1000 grain weights are reported in grams. For readers more accustomed to test weights expressed in pounds per bushel, 75 Kg/Hl is roughly equivalent to 60 pounds per bushel.

Disease¹ notes were requested from cooperators when differential reactions were observed. Rust reactions were most commonly recorded with the international rust scale noting the percentage leaf area infected and reaction type (i. e. lesion size).

¹ See page 3

Detailed statistical analyses were not attempted for the returned data. Often, cooperators elected to record information only on the first replication thereby precluding most statistical analyses. Yield data was reduced to a variety mean in Kg/Ha for each location and the varieties ranked in descending order. Data on other agronomic traits and disease reactions from the first replication were then added to complete the summary tables presented herein.

The overall location means for yield were computed for an indication of broad adaptability. Because of the limited number of experimental sites other variable means were not computed.

We at CIMMYT are hopeful that the maximum amount of information is available to cooperating scientists as assistance in raising the level of wheat production in cooperating areas of the world.

RESULTS AND DISCUSSION

Twelve trials were returned for the First ESYT - 1, Figure 1 presents the reporting locations with corresponding table numbers. The test sites included an array of climatic and edaphic conditions as indicated by the information presented in Figure 2.

Inspection of the individual location summaries (Tables 1-12) may offer readers some insight into the suitability of nursery entries to match specific conditions. The table format, a slight variation of the format used for previous CIMMYT yield nursery reports, was designed to assist individuals in evaluating the tested material at specific locations, and to help identify potentially useful germ plasm for direct use or as parents in a breeding program.

Table 13 presents the variety mean yields over all reporting locations ranked in descending order. Such values are considered as strong indications of broad adaptability. Limited experience with this indicated over only a few locations causes us to be cautious in our predictions. However, most of the top entries in this nursery have been included in the latest series of International Spring Wheat Yield Nurseries and we await further confirmation of the degree of adaptability exhibited by several of these outstanding lines.

¹ For simplicity of reporting, all plant diseases are referred to by one common name. The following common names have been selected, followed by the causal agent in parentheses: stem rust (*Puccinia graminis tritici*); leaf rust (*Puccinia recondita*); stripe rust (*Puccinia striiformis*); mildew (*Erisiphe graminis tritici*) and septoria leaf spot (*Septoria* spp.)

FIRST ESYT - 1, 1969-1970

FIGURES

AND

TABLES

FIGURE 1

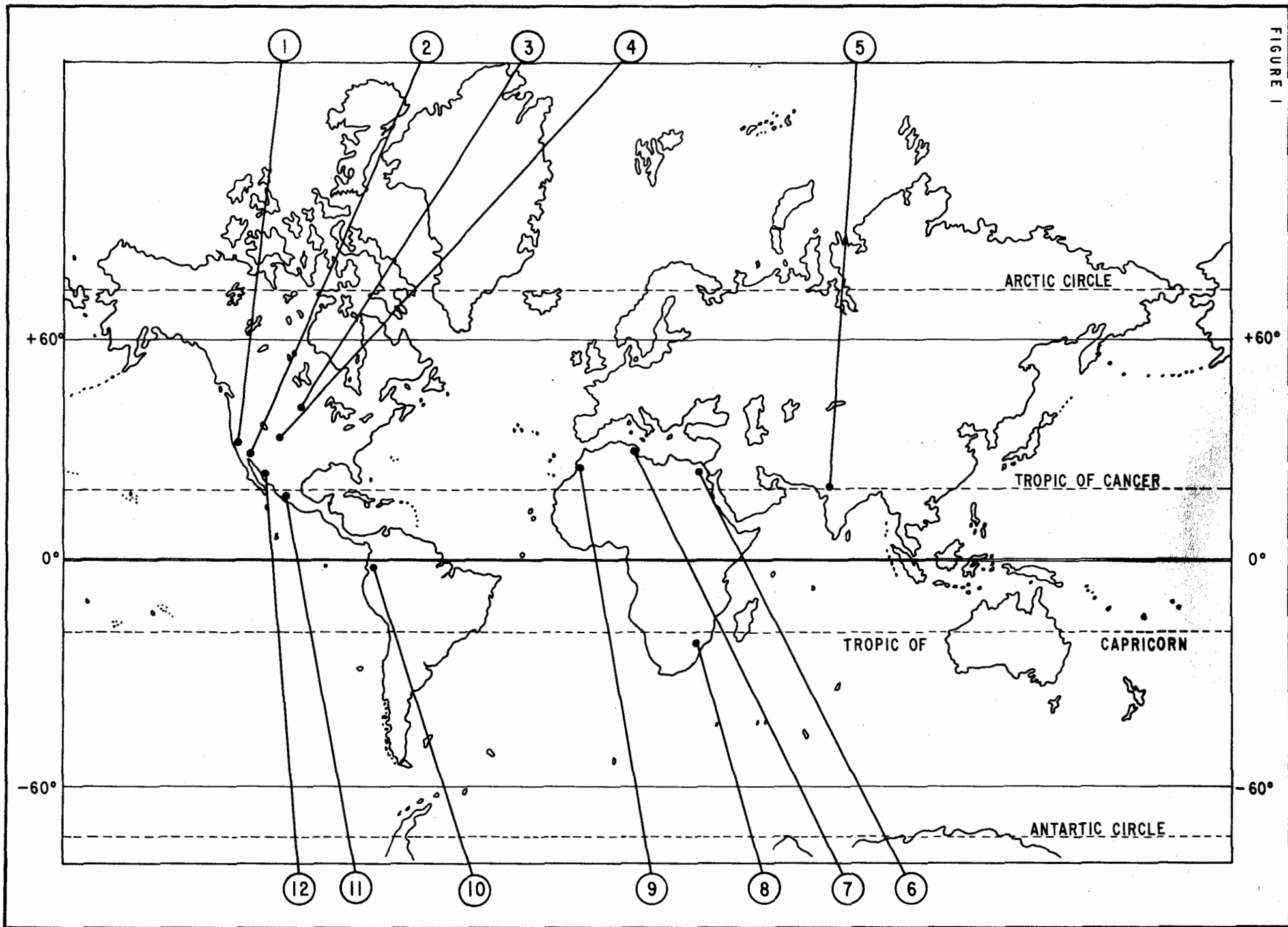
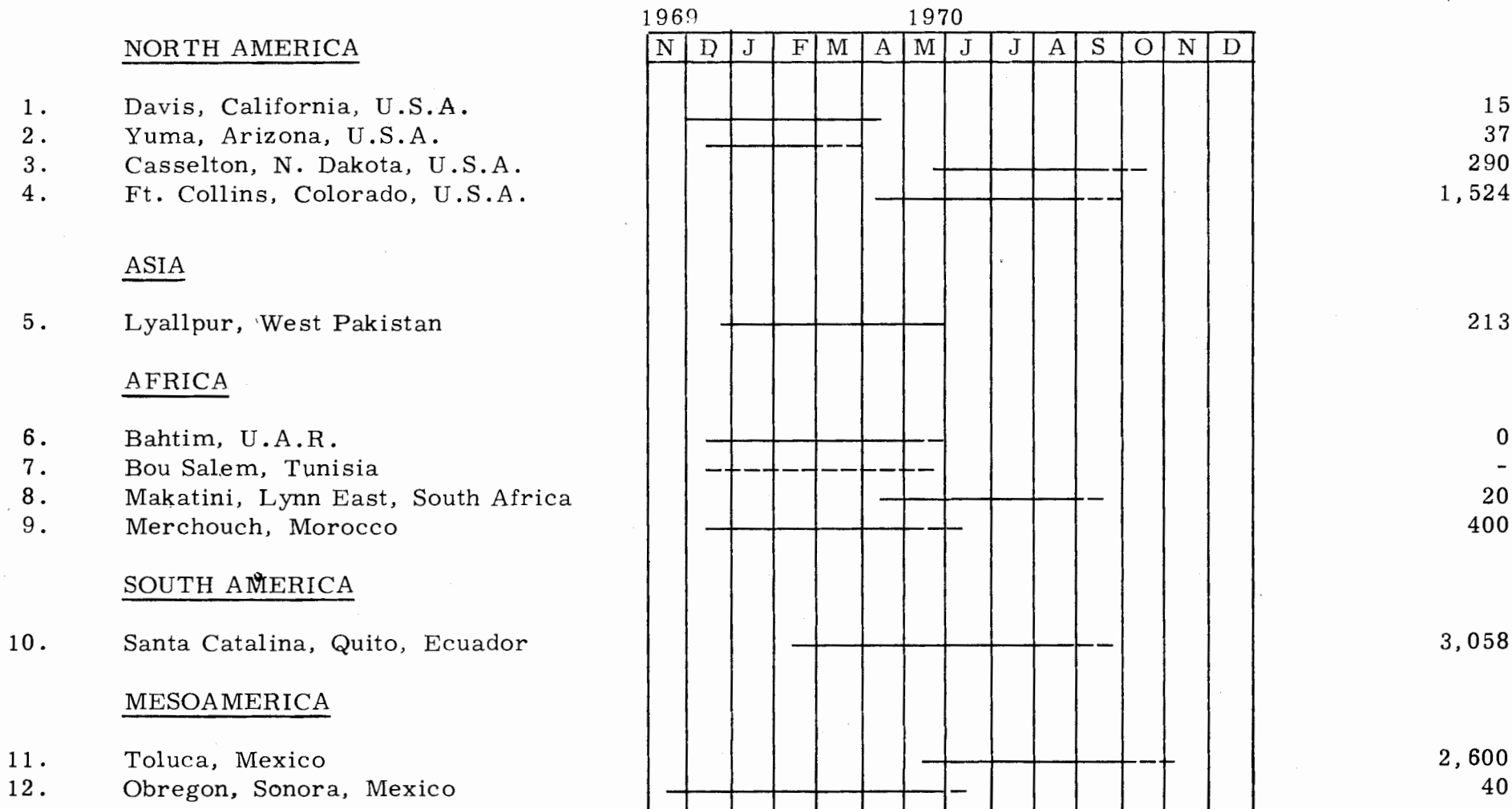


Figure 2

Location

First ESYT-1 (1969-70) Average Growing Season

Altitude
Meters



Text Table 1. Bread wheat entries in the First Elite Selection Yield Trial Number 1, 1969-1970

Variety Number	Variety	Cross	Pedigree
01	Penjamo 62	Frontana x Kenya58-Newthatch N10B	7078-1R-6M-1R-1M
02	Nuri 70	(Bluebird 1) Cno x Son64-KLRend/8156	23584-15Y-6M-0Y
03	Yecora 70	(Bluebird 2) Cno x Son64-KLRend/8156	23584-26Y-2M-1Y-0M
04	Saric 70	(Bluebird 3) Cno x Son64-KLRend/8156	23584-26Y-2M-2Y-0M
05	Cajeme 71	(Bluebird 4) Cno x Son64-KLRend/8156	23584-26Y-2M-3Y-2M-0Y
06	Siete Cerros 66	(Frontana x Kenya58-Newthatch/N10B)Gb558156	1M-2R-4M
07		(Bluebird 5) Cno x Son64-KLRend/8156	23584-37Y-2M-2Y-0M
08		(Bluebird 7) Cno x Son64-KLRend/8156	23584-18M-10Y-3M-3Y
09	Inia 66	LR64-Son64	19008-83M-100Y-100M-100Y-100C
10		Cno"S"-Inia"S" ²	23959-13T-1M-5Y-0M
11		Cno"S"-Inia"S" ²	23959-52T-1M-3Y-0M
12	Potam 70	Inia"S"-Napo63	22402-6M-4Y-1M-1Y-0M
13	Tobari 66	Tzpp-Son64A	19021-4M-2Y-102M-100Y-101C
14		Tob66-Cno"S"	24908-30M-3Y-3M-0Y
15		Tob66-Cno"S"	25000-6M-2Y-0M
16		Tob66-Cno"S"	25000-68M-2Y-2M-0Y
17		Tob66-Cno"S"	25000-13M-3Y-2M-0Y
18		KLRend-Son64 ² xInia"S"/Cno"S"	24970-29M-3Y-2M-0Y
19		No 66"S"-Cno"S"	24941-23M-5Y-2M-0Y
20	Ciano 67	Pitic62-Chris x Son64	19957-18M-1Y-3M-9Y
21		Tob 66-Cno"S"	25000-26M-1Y-1M-0Y
22		23584-Cno"S"	26592-1T-17M-0Y
23		23584-Cno"S"	26572-6Y-3M-0Y
24		Son64-KLRend/Cno"S" x LR64 ² -Son64	27130-57M-0Y
25	Sonora 64	Yaktana54 x Norin10-Brevor/Y54 ²	8469-2Y-6C-6Y-4C-2Y-1C

TABLE 1 NORTH AMERICA ESYT -1 1969-70

Location by Country: THE UNITED STATES OF AMERICA State: California Station: University of Calif. at Davis Elevation: + 15 meters Latitude: 38°32' N Longitude: 121°45' W

Cooperators' Names: Dr. J.A. Rupert and Dr. C.O. Qualset Date Planted: December 1, 1969 Date Harvested: Not Stated

No. of Irrigations: 2 No. of Days with Rains: Not Stated Total amount of Moisture: Not Stated Total Amount Fertilizer in kg/ha: 112 N OP O K

Comments: Unusually early and warm Spring. Heavy infestation of aphids.

Rank	Entry No.	Variety or Cross	Yield ¹ / _{ha}	Test Wt. Kg/hl.	Days to Maturity	Stripe rust	Height cm	Shattering
1	05	Bluebird 4	5866	78.1	134	0	85	9
2	03	Bluebird 2	5861	78.1	135	0	77	0
3	07	Bluebird 5	5411	78.3	135	0	70	0
4	02	Bluebird 1	4995	78.3	142	0	96	0
5	08	Bluebird 7	4990	79.4	134	0	85	1
6	04	Bluebird 3	4901	77.1	134	0	77	0
7	12	Inia "S" x Napo 63	4557	74.4	135	5R	88	2
8	19	No 66 "S" x Cno "S"	4551	77.0	142	0	90	2
9	09	Inia 66	4529	78.8	135	TRR	87	5
10	24	(Son 64 x Kl. Rend) x ((Cno "S" x LR64) 2) Son 64	4512	79.2	135	0	80	0
11	23	23584 x Cno "S"	4512	78.1	130	0	87	2
12	16	Tob 66 x Cno "S"	4462	77.2	135	0	91	0
13	20	Ciano 67	4446	78.5	141	69S	90	2
14	11	Cno "S" x (Inia "S") 2	4423	77.6	141	0	101	6
15	17	Tob 66 x Cno "S"	4383	77.3	134	0	88	4
16	06	Siete Cerros	4268	74.3	136	5MR	105	15
17	21	Tob 66 x Cno "S"	4262	74.4	134	0	90	4
18	22	23584 x Cno "S"	4223	76.2	139	0	72	4
19	25	Sonora 64	4151	78.1	135	TRR	87	5
20	13	Tobari 66	4074	75.5	135	TRR	91	0
21	18	((Kl. Rend. x (Son 64) 2) x Inia "S") x Cno "S"	3963	73.6	130	0	96	9
22	01	Penjamo 62	3929	73.4	135	0	100	9
23	10	Cno "S" x (Inia "S") 2	3707	74.4	140	TRR	95	22
24	15	Tob 66 x Cno "S"	3535	75.7	135	0	92	5
25	14	Tob 66 x Cno "S"	3158	78.1	134	0	88	1

¹/ Three replications

TABLE 2 NORTH AMERICA ESYT-1 1969-70

Location by Country: THE UNITED STATES OF AMERICA State: Arizona Station: (Northrup King & Co.) Yuma Elevation: +36.6 meters. Latitude 32°40N. Longitude: 114°39'W.

Cooperators' Names: Dr. R.W. Romig, Mr. K. Dubas and Dr. W. Althaus. Date Planted: December 18, 1969. Date Harvested: Not Stated

No. of Irrigations: 194mm (6) No. of Days with Rains: Not Stated Total Amount of Moisture: Not Stated Fertilizer: 110.9 N 89.6 P O K

Comments: Mild winter and cool spring with conditions generally favorable. No disease, insect, weed or pest problems.

Scoring notes taken: Lodging in scale of 1 (good) - 9; shattering in scale of 1 (good) - 9; leaf firing in scale of 1 (good) - 9.

Rank	Entry No.	Variety or Cross	Yield 1/ Kg/ha	Days to Flowering	Height cm	Lodging scale	Shattering	Leaf firing
1	08	Bluebird 7	9052	90	88.9	1	11.1	33.3
2	03	Bluebird 2	7568	97	78.7	1	11.1	33.3
3	04	Bluebird 3	7555	98	86.4	1	11.1	33.3
4	11	Cno "S" x (Inia "S") 2	7469	100	114.3	1	33.3	22.2
5	05	Bluebird 4	7438	97	91.4	1	11.1	33.3
6	02	Bluebird 1	7361	95	106.7	1	11.1	33.3
7	09	Inia 66	7207	90	111.8	1	22.2	33.3
8	22	23584 x Cno "S"	7087	87	81.3	1	22.2	22.2
9	07	Bluebird 5	7072	98	66.0	1	11.1	33.3
10	19	No 66 "S" x Cno "S"	7013	90	106.7	1	33.3	11.1
11	23	23584 x Cno "S"	6987	90	101.6	1	11.1	22.2
12	12	Inia "S" x Napo 63	6801	89	96.5	1	11.1	11.1
13	18	((Kl. Rend. x (Son 64)2) x Inia "S") x Cno "S"	6779	96	101.6	1	22.2	22.2
14	15	Tob 66 x Cno "S"	6646	98	101.6	1	22.2	55.5
15	16	Tob 66 x Cno "S"	6453	96	104.1	1	11.1	22.2
16	17	Tob 66 x Cno "S"	6440	88	99.1	1	22.2	22.2
17	20	Ciano 67	6379	89	104.1	1	33.3	22.2
18	10	Cno "S" x (Inia "S") 2	6305	98	109.2	1	11.1	22.2
19	01	Penjamc 62	6262	91	109.2	2	33.3	33.3
20	13	Tobari 66	6225	89	104.1	1	11.1	55.5
21	25	Sonora 64	6055	90	99.1	1	22.2	44.4
22	24	(Son 64 x Kl. Rend) x ((Cno "S" x LR 64)2) x Son 64	5963	88	101.6	1	44.4	11.1
23	06	Siete Cerros	5911	99	114.3	1	11.1	22.2
24	21	Tob 66 x Cno "S"	5845	92	109.2	1	33.3	33.3
25	14	Tob 66 x Cno "S"	5282	98	114.3	1	22.2	22.2

1/ Three replications

TABLE 3 NORTH AMERICA ESYT-1 1969-70

Location by Country: UNITED STATES OF AMERICA State: North Dakota Station: CASSELTON Elevation: +290m Latitude: 47°N Longitude: 97°W

Cooperators' Names: DeKalb Ag. Research, Inc. Date Planted: May 20, 1970 Date Harvested: Not Stated

No. of Irrigations: None No. of Days with Rains: Not Stated Total Amount of Moisture: Not Stated Total Amount Fertilizer in kg/ha: O N 15.6 P O K

Comments: Experiment was damaged from excessive water. Rust development was slow and the severity was low. In the early part of the season it was cool with high moisture. Later, from heading to harvest the weather was hot and dry. Lodging scale 0 (good) to 4 and shattering scale 0 (good) to 5.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Days to Flowering	Leaf rust	Stem rust	Height cm	Lodging scale	Shattering scale	Test Wt Kg/hl
1	14	Tob 66 x Cno "S"	2734	56	30S	0	70	0	2	77.2
2	04	Bluebird 3	2617	54	20S	0	55	0	1	74.6
3	09	Inia 66	2478	49	60S	0	66	1	1	76.6
4	06	Siete Cerros	2279	52	80S	0	72	4	3	74.0
5	13	Tobari 66	2271	52	20R	ITR	68	0	0	77.2
6	01	Penjamo 62	2211	54	0	70S	73	1	1	72.7
7	19	No 66 "S" x Cno "S"	2115	48	0	0	64	0	3	74.6
8	05	Bluebird 4	1966	55	0	0	58	0	1	72.0
9	02	Bluebird 1	1923	52	0	TRMS	67	0	4	75.9
10	03	Bluebird 2	1923	51	0	20S	52	0	0	73.4
11	18	((Kl. Rend x (Son 64)2) x Inia "S") x Cno "S"	1886	51	TRR	TRR	66	0	3	74.6
12	15	Tob 66 x Cno "S"	1883	56	30S	0	64	0	2	75.9
13	11	Cno "S" x (Inia "S") 2	1872	51	16S	0	73	2	5	77.2
14	16	Tob 66 x Cno "S"	1853	50	TRR	TRR	53	0	1	76.6
15	08	Bluebird 7	1813	52	TRR	0	60	0	4	75.9
16	24	(Son 64 x Kl. Rend) x ((Cno "S" x LR 64) 2) x Son 64	1776	49	0	0	65	0	3	74.6
17	23	23584 x Cno "S"	1775	50	0	0	57	0	2	75.3
18	07	Bluebird 5	1722	49	8MR	0	47	0	1	75.3
19	25	Sonora 64	1675	51	30S	80S	55	3	1	72.7
20	21	Tob 66 x Cno "S"	1562	51	TRMS	0	73	0	4	74.0
21	17	Tob 66 x Cno "S"	1545	53	TRR	TRR	57	0	3	75.3
22	10	Cno "S" x (Inia "S") 2	1535	51	0	0	70	0	5	74.6
23	12	Inia "S" x Napo 63	1487	47	30S	8MR	65	3	1	75.3
24	22	23584 x Cno "S"	1101	50	TRR	TRR	48	0	2	74.0
25	20	Ciano 67	--	-	TRR	0	64	0	4	74.6

TABLE 4 NORTH AMERICA ESYT-1 1969-70

Location by Country: THE UNITED STATES OF AMERICA State: Colorado Station: Fort Collins (CARGILL) Elevation: + 1524m Latitude: 40°35'N Longitude 105°05' W

Cooperators' Names: B. C. Curtis, R. Johnston, B. J. Roberts Date Planted: 13 April, 1970 Date Harvested: Not Stated

No. of Irrigations: 2 No. of Days with Rains: Not Stated Total Amount of Moisture: 406 mm. approx. Total Amount Fertilizer in kg/ha: 112 N O P O K

Comments: It was cool early in the season and then turned hot during mid-crop cycle and remained hot until harvest. The experiment was inoculated with stem and leaf rust but it developed very slowly. No weed or pest problems were noted. Height Scale from 1 (tall) to 3 (dwarfed) with (+) more dwarfed and (-) less.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Test Wt. Kg/hl	Height
1	01	Penjamo 62	6025	78.5	E ₂
2	14	Tob 66 x Cno'S''	5825	77.9	E ₂₊
3	12	Inia 'S'' x Napo 63	5749	76.5	E ₂₊
4	20	Ciano 67	5748	79.8	E ₂
5	06	Siete Cerros	5673	79.8	E ₂
6	02	Bluebird 1	5601	77.2	E ₃
7	09	Inia 66	5549	76.6	E ₃
8	11	Cno 'S'' x (Inia'S'') 2	5393	79.2	E ₂
9	13	Tobari 66	5367	76.6	E ₃
10	19	No 66'S'x Cno'S''	5362	77.2	E ₂
11	05	Bluebird 4	5358	77.2	E ₂
12	25	Sonora 64	5164	80.4	E ₂
13	23	23584 x Cno'S''	5137	80.4	E ₂
14	04	Bluebird 3	5022	78.5	E ₂
15	24	(Son64 x KL.Rend) x ((Cno'S'' x LR64)2) x Son64	4988	78.5	E ₂₊
16	15	Tob 66 x Cno'S''	4949	79.8	E ₂
17	08	Bluebird 7	4918	76.6	E ₃₊
18	21	Tob 66 x Cno'S''	4798	77.9	E ₂₋
19	16	Tob 66 x Cno'S''	4745	79.2	E ₂
20	03	Bluebird 2	4578	77.2	E ₂
21	18	((KL.Rend. x (Son64)2) x Inia'S'') x Cno'S''	4491	79.2	E ₂
22	17	Tob 66 x Cno'S''	4287	76.6	E ₃
23	22	23584 x Cno'S''	4252	78.5	E ₂₋
24	10	Cno'S'' x (Inia'S'') 2	4194	79.8	E ₂
25	07	Bluebird 5	3794	7.53	E ₂₋

TABLE 5 ASIA ESYT-1 1969-70

Location by Country: WEST PAKISTAN State: Lyallpur Station: (Ayub Agricultural Research Institute) Elevation: +213 meters. Latitude: 31°30'N Longitude: 73°10'E

Cooperators' Names: Cereal Botanist Date Planted: December 1969 Date Harvested: Not Stated

No. of Irrigations: 4 of 16.2 mm each. No. of Days with Rains: 10.8 mm (6 showers) Total Amount of Moisture: Not Stated Fertilizer: 100.8 N 30.0 P 0 K

Comments: The climatic conditions remained normal throughout the experiment. Good development of stripe and stem rust. No pest damage. Planted later than normal.

Rank	Entry Number	Variety or Cross	Yield Kg/Ha	Days to Flowering	Days to Maturity	Stripe rust	Height cm
1	09	Inia 66	6304	70	105	0	105
2	01	Penjamo 62	5378	75	106	5R	102
3	20	Ciano 67	5220	68	101	5R	97
4	11	Cno "S" x (Inia "S") ²	5045	80	113	0	92
5	21	Tob 66 x Cno "S"	4978	73	106	5R	102
6	08	Bluebird 7	4953	73	106	0	88
7	25	Sonora 64	4887	68	104	40S	94
8	24	(Son 64 x Kl. Rend.) x ((Cno "S" x LR 64) ²) x Son 64	4870	65	101	5R	99
9	18	((Kl. Rend. x (Son 64) ²) x Inia "S") x Cno "S"	4804	75	107	0	96
10	16	Tob 66 x Cno "S"	4729	73	104	0	99
11	05	Bluebird 4	4612	76	124	0	69
12	02	Bluebird 1	4546	74	108	0	99
13	06	Siete Cerros	4521	81	115	25MS	98
14	03	Bluebird 2	4512	74	107	0	68
15	12	Inia "S" x Napq 63	4505	70	105	0	87
16	23	23584 x Cno "S"	4487	74	107	5R	92
17	04	Bluebird 3	4479	75	108	0	69
18	19	No 66 "S" x Cno "S"	4462	73	106	25MS	98
19	14	Tob 66 x Cno "S"	4412	75	107	0	97
20	22	23584 x Cno "S"	4404	68	101	10MR	79
21	17	Tob 66 x Cno "S"	4387	71	104	5R	98
22	13	Tobari 66	4196	73	107	0	96
23	07	Bluebird 5	4188	74	109	5R	67
24	10	Cno "S" x (Inia "S") ²	4121	79	112	5R	87
25	15	Tob 66 x Cno "S"	3988	80	114	5R	90

TABLE 6 AFRICA ESYT-1 1969-70

Location by Country: EGYPT State: Bahtim Elevation: Sea level Latitude: 30° N. Longitude: 31° E.
 Cooperators' Names: Dr. S. M. Dessouki and staff. Date Planted: December 17, 1969. Date Harvested: not stated
 No. of Irrigations: 12 No. of Days with Rains: Not stated Total Amount of Moisture: Not Stated Fertilizer: 145 N 0 P 0 K
 Comments: Good development of leaf and stem rust.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Days to flowering	Days to maturity	Leaf rust	Stem rust	Height cm	Shattering %	1000 grain Wt.	Test Wt. Kg/hi
1	05	Bluebird 4	7559	88	131	5MR	10MS	86	8	40.3	81.0
2	09	Inia 66	7434	79	127	MR	5MS	108	7	40.2	82.0
3	18	((Kl. Rend. x (Son 64)2) x Inia "S") x Cno "S"	7322	84	130	Tr.R	0	108	9	38.1	82.3
4	11	Cno "S" x (Inia "S") 2	7264	91	132	Tr.R	0	100	6	36.0	81.8
5	12	Inia "S" x Napo 63	7189	59	162	5MS	5MS	94	6	40.1	81.5
6	08	Bluebird 7	7006	82	128	Tr.R	0	98	12	37.5	82.0
7	01	Penjamo 62	7001	84	130	10MS	5MS	109	6	37.9	82.0
8	04	Bluebird 3	6947	86	129	5MR	5MS	89	8	38.2	81.0
9	06	Siete Cerros	6881	87	132	40MS	10MS	105	10	37.5	81.0
10	25	Sonora 64	6843	78	124	10MS	Tr.R	104	10	37.0	81.5
11	07	Bluebird 5	6806	83	128	0	0	68	7	36.2	80.0
12	10	Cno "S" x (Inia "S") 2	6768	87	132	Tr.R	0	96	11	37.2	79.0
13	02	Bluebird 1	6756	84	129	5MR	5MS	97	7	40.7	82.0
14	14	Tob 66 x Cno "S"	6731	86	132	Tr.R	Tr.R	108	6	36.7	81.5
15	23	23584 x Cno "S"	6727	81	128	0	0	96	9	35.9	82.0
16	19	No 66 "S" x Cno "S"	6606	79	124	MR	5MR	104	11	39.6	81.0
17	21	Tob 66 x Cno "S"	6581	82	130	Tr.R	Tr.R	106	15	39.2	80.5
18	17	Tob 66 x Cno "S"	6431	79	127	Tr.R	0	101	10	41.3	82.3
19	22	23584 x Cno "S"	6398	79	125	MR	0	85	16	38.6	82.0
20	03	Bluebird 2	6387	83	129	5MS	10MS	80	6	37.3	80.5
21	15	Tob 66 x Cno "S"	6202	89	133	0	Tr.R	91	8	37.2	80.8
22	16	Tob 66 x Cno "S"	6094	83	128	20MS	0	103	6	39.9	83.0
23	24	(Son 64 x Kl. Rend) x ((Cno "S" x (LR 64)2) x Son 64	5973	77	124	Tr.R	Tr.R	106	15	40.3	81.0
24	13	Tobari 66	5857	84	131	0	0	103	5	35.4	81.8
25	20	Ciano 67	5720	78	122	Tr.R	5MS	104	11	39.3	81.8

TABLE 7 AFRICA ESYT-1 1969-70

Location by Country: TUNISIA State: Ariana

Cooperators' Names: Dr. Willis L. McCuiston

Comments: No other information provided.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Leaf rust	Stem rust	Stripe rust	Septoria	Days to Maturity	Height cm	Oidium
1	12	Inia "S" x Napo 63	3740	20MS	0	0	0	83	75	9MS
2	05	Bluebird 4	3640	10MS	10MS	0	10S	85	70	9MS
3	03	Bluebird 2	3640	10MS	10MS	0	20S	85	65	9MS
4	04	Bluebird 3	3560	20MS	10MR	0	0	87	75	9S
5	09	Inia 66	3540	20MS	30S	0	30S	84	90	9S
6	14	Tob66 x Cno "S"	3306	20MS	20MS	0	0	87	75	9MS
7	07	Bluebird 5	3240	20MS	20MS	0	0	85	60	9MS
8	02	Bluebird 1	3234	0	20MS	0	0	89	80	9MS
9	13	Tobari 66	3170	0	0	0	20S	85	85	9MS
10	11	Cno "S" x (Inia "S") 2	3160	20MS	20MS	0	0	87	75	9S
11	19	No 66 "S" x Cno "S"	3105	10MR	20MS	0	40S	84	80	9S
12	23	23584 x Cno "S"	3103	0	0	0	0	85	80	9S
13	08	Bluebird 7	3075	20MS	20MS	0	0	85	75	9MS
14	25	Sonora 64	3052	20MS	20MS	0	10MS	81	70	9S
15	01	Penjamo 62	3016	30MS	0	0	0	90	90	9MS
16	06	Siete Cerros	3010	0	60S	0	40MS	94	90	9MS
17	18	((Kl. Rend. x (Son64) 2) x Inia "S") x Cno "S"	2987	0	0	0	40S	87	85	9MS
18	15	Tob66 x Cno "S"	2828	20MS	20MS	0	0	92	80	9MS
19	16	Tob66 x Cno "S"	2826	0	0	0	10	87	80	9S
20	10	Cno "S" x (Inia "S") 2	2798	10MS	0	0	10MS	90	85	9S
21	20	Ciano 67	2779	0	0	0	0	84	80	9S
22	21	Tob66 x Cno "S"	2774	20S	20MS	30S	20S	84	80	9S
23	24	(Son 64 x Kl. Rend) x ((Cno "S" x LR64) 2) x Son 64	2746	0	0	20S	0	81	85	9MS
24	17	Tob66 x Cno "S"	2578	0	0	0	0	83	80	9S
25	22	23584 x Cno "S"	2170	0	0	30S	30S	83	65	9MS

TABLE 8 AFRICA ESYT-1 1969-70

Location by Country: Republic of South Africa Station: MAKATINI EXPERIMENT STATION Elevation: + 20m Latitude: 27°5'S Longitude 32°0'E

Cooperators' Names: D. Rossouw, J. Dejager, E. Whitlock, L. Robertson, D. Malan Date Planted: 20 April, 1970 Date Harvested: Not Stated

No. of Irrigations: Not Stated No. of Days with Rains: Nil Total Amount of Moisture: 351 mm. Total Amount Fertilizer in kg/ha: 80 N OP OK

Comments: Climate was hot and humid. Stem and Leaf rust development was severe. Termites and birds caused some damage.

Rank	Entry No.	Variety or Cross	Yield kg/ha	Days to Flowering	Days to Maturity	Leaf rust	Stem rust	Height cm	Test Wt. kg/hl	1000 grain Wt.
1	16	Tob66 x Cno "S"	5502	55	106	TVR	0	85	70.1	37.5
2	18	(Kl. Rend x (Son 64) 2) x Inia "S" x Cno "S"	5446	55	101	25VR	0	80	81.1	39.5
3	11	Cno "S" x (Inia "S") 2	5349	75	117	5MR	TMS	86	81.1	38.0
4	02	Bluebird 1	5119	55	106	5R	15S	75	83.0	39.0
5	05	Bluebird 4	5110	82	128	TR	TMS	67	75.9	44.0
6	04	Bluebird 3	5038	75	122	0	TMS	65	76.6	40.8
7	23	23584 x Cno "S"	4995	55	106	5R	0	76	83.0	40.5
8	08	Bluebird 7	4973	65	106	25MR	5MS	76	81.1	34.5
9	03	Bluebird 2	4894	55	101	0	5MS	58	79.8	43.5
10	14	Tob66 x Cno "S"	4872	60	106	5R	TMS	86	81.7	37.0
11	01	Penjamo 62	4871	60	106	15MS	10S	85	81.7	39.6
12	07	Bluebird 5	4783	55	106	25R	5MS	59	83.7	39.5
13	10	Cno "S" x (Inia "S") 2	4781	65	110	25VR	TMS	78	77.9	38.0
14	21	Tob66 x Cno "S"	4764	55	106	5MS, 25VR	2MS	84	81.1	42.5
15	15	Tob66 x Cno "S"	4513	60	106	5MS, 5R	0	80	80.4	40.5
16	20	Ciano 67	4358	50	101	10VR	TMS	74	83.7	44.5
17	12	Inia "S" x Napo 63	4285	50	106	5VR	15MS	71	81.7	34.5
18	09	Inia 66	4229	55	106	25MR	20MS	85	84.9	44.0
19	13	Tobari 66	4135	55	101	10MR	TMS	75	80.0	35.0
20	25	Sonora 64	4123	50	96	100S	10MS	79	81.1	39.5
21	19	No 66 "S" x Cno "S"	4035	50	101	10R	2MS	76	81.7	40.0
22	17	Tob66 x Cno "S"	3973	50	101	25R	TMS	77	81.7	40.0
23	24	(Son 64 x Kl. Rend) x ((Cno "S" x LR64)2) Son64	3825	50	101	10VR	TMS	81	82.4	44.5
24	22	23584 x Cno "S"	3607	50	101	5R	0	63	82.4	41.7
25	06	Siete Cerros	2914	60	106	100S	100S	90	75.3	26.5

TABLE 9 AFRICA ESYT-1 1969-70

Location by Country: MOROCCO Station: MERCHOUCH Elevation: +400 m Latitude: 33° 50' N Longitude: 7° 0' W
 Cooperators' Names: A. Acosta Date Planted: 26 December, 1969 Date Harvested: June 1970
 No. of Irrigations: None No. of Days with Rains: Not Stated Total Amount of Moisture: 369 mm. Total Amount Fertilizer in kg/ha: 100N 17.6P 33.2K
 Comments: Climatic conditions were good. Dry periods reported at tillering and flowering. End of season was also dry. Hessian fly, sawfly, wheat stem maggot, wild oats (heavy) and other weeds caused damage to experiment

Rank	Entry No	Variety or Cross	Yield Kg/Ha	Days to Flowering	Days to Maturity	Height cm	Test Wt. Kg/Hl	Fallen Stems %
1	12	Inia "S" x Napo 63	3587	91	137	85	76.9	5
2	21	Tob 66 x Cno "S"	3093	93	134	94	78.3	5
3	05	Bluebird 4	3003	97	137	67	77.3	4
4	17	Tob 66 x Cno "S"	2878	92	137	81	77.3	4
5	23	23584 x Cno "S"	2791	96	141	75	77.0	8
6	07	Bluebird 5	2752	97	140	58	76.3	TR
7	04	Bluebird 3	2748	98	142	65	74.5	6
8	19	No 66 "S" x Cno "S"	2748	93	130	88	76.9	16
9	06	Siete Cerros	2716	99	144	84	74.1	2
10	09	Inia 66	2701	92	137	88	79.4	8
11	14	Tob 66 x Cno "S"	2700	96	136	90	78.7	6
12	24	(Son 64 x Kl. Rend) x ((Cno "S" x LR 64)2) x Son 64	2686	90	134	83	79.6	13
13	11	Cno "S" x (Inia "S")2	2677	98	144	84	77.6	11
14	15	Tob 66 x Cno "S"	2598	95	141	83	76.3	5
15	25	Sonora 64	2598	90	131	79	76.0	8
16	08	Bluebird 7	2556	96	139	68	74.6	8
17	01	Penjamo 62	2516	96	140	86	75.8	14
18	03	Bluebird 2	2487	96	138	64	75.2	4
19	02	Bluebird 1	2482	96	139	84	78.0	13
20	16	Tob 66 x Cno "S"	2441	94	140	83	77.9	9
21	13	Tobari 66	2413	94	140	89	77.7	14
22	20	Ciano 67	2299	91	132	81	79.2	13
23	18	(Kl. Rend x (Son 64)2) x Inia "S" x Cno "S"	2225	97	141	83	74.1	10
24	22	23584 x Cno "S"	2222	92	133	66	77.5	4
25	10	Cno "S" x (Inia "S")2	2098	100	142	86	74.6	16

TABLE 10 SOUTH AMERICA ESYT-1 1969-70

Location by Country: Ecuador Station: SANTA CATALINA (Quito) Elevation: + 3058m Latitude: 00°22'S Longitude: 78°38'W

Cooperators' Names: DEPARTMENT OF CEREALS-WHEAT SECTION Date Planted: 17 February, 1970 Date Harvested: Not Stated

No. of Irrigations: 0 No. of Days with Rains: Not Stated Total Amount of Moisture: 754 mm. Total Amount Fertilizer in kg/ha: 30 N 52.8 P 24.9 K

Comments: Climatic conditions were normal during the experiment. Some problems with Rumex crispus and Spergula arvensis reported.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Days to Flowering	Stripe rust	Height cm	Test Wt. Kg/hl	1000 grain Wt.	P. striiformis Head %	Septoria spp. %
1	03	Bluebird 2	1693	83	85S	67	69	35	43	14
2	07	Bluebird 5	1535	85	45MS	59	71	29	21	19
3	04	Bluebird 3	1477	87	52S	75	66	32	38	18
4	05	Bluebird 4	1457	88	47S	77	69	34	24	16
5	12	Inia "S" x Napo 63	1423	81	55S	79	68	32	20	21
6	18	((Kl. Rend. x (Son64) 2) x Inia "S") x Cno. "S"	1419	84	67S	83	70	26	26	21
7	16	Tob66 x Cno "S"	1303	82	22MR	90	73	28	5	10
8	19	No66 "S" x Cno "S"	1220	81	82S	93	69	29	48	10
9	17	Tob 66 x Cno "S"	1204	82	60S	86	71	33	30	9
10	24	(Son64 x Kl. Rend) x ((Cno. "S" x LR64)2) x Son 64	1162	81	55MS	88	70	30	34	28
11	14	Tob 66 x Cno "S"	1133	84	45S	93	72	35	13	29
12	13	Tobari 66	1116	82	52S	90	72	28	17	12
13	20	Ciano 67	1108	81	70S	88	70	31	31	23
14	11	Cno "S" (Inia "S") 2	1087	94	85S	82	68	23	28	20
15	22	23584 x Cno "S"	1054	81	90MS	70	70	35	110	24
16	15	Tob 66 x Cno "S"	996	88	47S	86	69	29	19	14
17	08	Bluebird 7	971	84	47MS	73	69	28	31	15
18	23	23584 x Cno "S"	888	82	90S	75	59	24	44	21
19	10	Cno "S" x (Inia "S") 2	880	87	77S	86	62	21	38	13
20	09	Inia 66	854	80	100S	85	69	27	40	17
21	02	Bluebird 1	647	84	75S	80	64	27	45	16
22	21	Tob 66 x Cno "S"	493	82	62MS	86	65	32	38	14
23	01	Penjamo 62	432	84	100S	87	61	23	70	4
24	25	Sonora 64	125	80	100S	80	-	20	95	3
25	06	Siete Cerros	70	95	92S	74	-	13	90	6

TABLE 11 MESOAMERICA ESYT-1 1969-70

Location by Country: MEXICO State: MEXICO Station: TOLUCA Elevation: + 2600 m Latitude: 19°25' N Longitude: 99°5' W

Cooperators' Names: CIMMYT WHEAT PROGRAM Date Planted: May 20, 1970 Date Harvested: October, 1970

No. of Irrigations: Not Stated No. of Days with Rains: Not Stated Total Amount of Moisture: Not Stated Total Amount Fertilizer in kg/ha: 100 N 80 P₂O₅ OK

Comments: Climatic conditions throughout the test were cold and rainy. Weeds were controlled by hand and chemically. Rust development was slower than usual. Leaf damage is a physiological problem of unknown cause rated from 0 (good) to 5.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Test Wt. Kg/hl	Days to Flowering	Stripe rust	Leaf rust	Height cm	1000 grain Wt.	Leaf Damage
1	18	((Kl. Rend. x (Son64) 2) x Inia "S") x Cno "S"	6932	76.5	72	TRMS	TRMR	100	41.2	3.1
2	19	No 66 "S" x Cno "S"	6573	75.2	67	0	TRMR	98	40.8	3.5
3	09	Inia 66	6516	77.5	70	TRMR	5MS	96	48.7	3.3
4	17	Tob 66 x Cno "S"	6360	75.9	71	TRR	TRMR	95	38.3	3.0
5	24	(Son 64 x Kl. Rend) x ((Cno. "S" x LR64) 2) x Son 64	6230	76.2	68	TRMR	TRR	96	35.4	3.5
6	16	Tob 66 x Cno "S"	6188	77.2	70	0	TRMR	94	40.4	2.5
7	02	Bluebird 1	6157	75.3	72	TRMR	0	93	41.6	3.4
8	12	Inia "S" x Napo 63	6152	73.2	66	TRMR	5MS	85	40.1	3.4
9	25	Sonora 64	6141	74.3	69	TRMS	TRMR	94	33.5	3.6
10	01	Penjamo 62	6127	75.6	76	5MS	10MS	104	44.7	2.1
11	11	Cno "S" x (Inia "S") 2	5845	73.4	76	TRMR	TRMS	98	40.1	2.8
12	14	Tob 66 x Cno "S"	5829	73.8	77	TRMR	TRMR	103	35.5	1.9
13	05	Bluebird 4	5767	71.5	78	TRMR	TRMS	84	43.2	3.4
14	20	Ciano 67	5689	77.6	68	TRMR	TRMR	95	47.8	3.3
15	03	Bluebird 2	5642	72.5	70	0	TRMR	71	46.5	3.9
16	13	Tobari 66	5595	74.0	74	TRR	TRMR	103	32.4	1.4
17	21	Tob 66 x Cno "S"	5569	73.4	71	TRR	TRMR	101	38.1	3.1
18	04	Bluebird 3	5476	71.4	77	TRMR	TRMR	81	42.0	3.8
19	23	23584 x Cno "S"	5408	74.7	69	0	TRMR	88	33.1	3.4
20	10	Cno "S" x (Inia "S") 2	5242	68.6	76	TRMR	TRMS	103	30.4	3.4
21	22	23584 x Cno "S"	5242	72.7	68	0	TRMR	73	39.1	3.6
22	15	Tob 66 x Cno "S"	5190	73.1	78	TRMR	TRR	93	31.8	2.3
23	06	Siete Cerros	4690	67.1	78	10S	5MS	94	28.0	2.3
24	07	Bluebird 5	4586	72.3	74	TRMR	TRMR	63	33.1	3.0
25	08	Bluebird 7	4280	69.7	73	0	TRR	85	28.4	3.9

TABLE 12 MESOAMERICA ESYT-1 1969-70

Location by Country: MEXICO State: Sonora Station: CIANO (Cd. Obregon) Elevation: +40 meters Latitude: 27°20' N Longitude: 109°54' W.

Cooperators' Names: CIMMYT wheat staff Date Planted: November 18, 1969 Date Harvested: Not Stated

No. of Irrigations: 6 No. of Days with Rains: Trace at beginning Total Amount of Moisture: Not Stated Fertilizer: 120 N 35.2 P O K

Comments: Dry season. Good stem and leaf rust development.

Scoring notes taken: Leaf firing = 0 (good) - 5. The first number is for flag leaf and second number is for the lower leaves. Height is designated on a scale from E₁ (tall) to E₃ (dwarfed), with superscripts + and - representing greater or lesser dwarfing.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Days to Flowering	Leaf rust	Stem rust	Height (scale)	Lodging (%)	Shattering	Leaf firing
1	05	Bluebird 4	8079	92	0-5MS	0	E ₂	10	Tr.	0-1
2	06	Siete Cerros	7470	83	55	10S	E ₁	80	1/	0-1
3	03	Bluebird 2	7428	77	0	5R	E ₂ ⁺	20	1/	2-2
4	12	Inia "S" x Napo 63	7350	70	60S	20MS	E ₂	80	Tr.	1-2
5	09	Inia 66	7339	75	60S	20MR	E ₁	100	1/	2-2
6	04	Bluebird 3	7287	93	0	Tr. R	E ₂ ⁺	5	0	0-1
7	01	Penjamo 62	7240	80	Tr.MR-MS 40S		E ₁	100	1/	1-1
8	23	23584 x Cno "S"	6943	73	0	Tr. R	E ₂	70	2/	2-2
9	25	Sonora 64	6886	67	Tr. R	20S	E ₂	80	1/	4-5
10	14	Tob 66 x Cno "S"	6776	79	Tr. R	20MS	E ₁ ⁺	80	Tr.	1-2
11	02	Bluebird 1	6724	82	Tr. R	Tr. R	E ₂	50	1/	0-1
12	21	Tob 66 x Cno "S"	6693	75	Tr. R	20MR	E ₂	70	1/	0-1
13	07	Bluebird 5	6625	78	0	10MR	E ₃	0	0	1-1
14	20	Ciano 67	6542	71	Tr. R	20S	E ₁	80	1/	4-4
15	19	No 66 "S" x Cno "S"	6526	72	0	Tr. R	E ₁	90	1/	2-2
16	18	((Kl. Rend. x (Son 64) 2) x Inia "S") x Cno "S"	6464	80	0	5MR	E ₁	80	1	1-1
17	22	23584 x Cno "S"	6401	70	Tr. R	5MR	E ₂	10	1	1-2
18	15	Tob 66 x Cno "S"	6323	86	0	Tr. R	E ₂	10	1	2-2
19	16	Tob 66 x Cno "S"	6307	77	0	Tr. R	E ₁	90	Tr.	1-2
20	08	Bluebird 7	6213	80	0	5R	E ₂	80	1	1-2
21	13	Tobari 66	6208	77	0	20MR	E ₁	60	1/	2-2
22	17	Tob 66 x Cno "S"	6182	72	0	10MR	E ₁	70	2/	3-4
23	11	Cno "S" x (Inia "S") 2	6130	93	10S	Tr. R	E ₂	40	1	0-1
24	24	(Son 64 x Kl. Rend) x ((Cno "S" x LR 64)2) x Son 64	5927	66	0	20MR	E ₂	60	4	4-5
25	10	Cno "S" x (Inia "S") 2	5702	88	0	Tr. R	E ₂	40	0	0-1

1/ No data available

TABLE 13

ESYT-1

1969-70

Overall mean yields for the varieties of the First International Elite Selection Yield Trial-1 (at the 12 reporting locations).

Rank	Entry No.	Variety or Cross	Yield Kg/Ha
1	05	Bluebird 4	4988
2	09	Inia 66	4890
3	04	Bluebird 3	4759
4	12	Inia "S" x Napo 63	4735
5	03	Bluebird 2	4718
6	11	Cno "S" x (Inia "S") ²	464
7	02	Bluebird 1	462
8	01	Penjamo 62	458
9	08	Bluebird 7	456
10	18	((Kl.Rend. x (Son 64) ²) x Inia "S") x Cno "S"	4560
11	19	No 66 "S" x Cno "S"	4526
12	23	23584 x Cno "S"	4479
13	16	Tob 66 x Cno "S"	4409
14	14	Tob 66 x Cno "S"	4397
15	07	Bluebird 5	4376
16	25	Sonora 64	4308
17	21	Tob 66 x Cno "S"	4284
18	24	(Son 64 x Kl.Rend.) x ((Cno "S" x LR 64) ²) Son 64	4222
19	17	Tob 66 x Cno "S"	4221
20	13	Tobari 66	4219
21	06	Siete Cerros	4200
22	20	Ciano 67	4191
23	15	Tob 66 x Cno "S"	4138
24	22	23584 x Cno "S"	4013
25	10	Cno "S" x (Inia "S") ²	4011

FIRST ESYT-2, 1969-1970

FIGURES

AND

TABLES

RESULTS OF THE FIRST ELITE SELECTION YIELD TRIAL - 2, 1969-1970 (ESYT - 2)

ABSTRACT

Twenty five bread wheat check varieties and advanced lines were tested in diverse locations as the First Elite Selection Yield Trial - 2. These entries were selected as the most outstanding of current germ plasm from the joint Mexican-CIMMYT bread wheat breeding program. Data, received from 12 locations representing the major spring wheat region of the world, include yield, agronomic traits and disease reactions. Location summaries are presented for all traits measured at each reporting location.

INTRODUCTION

The Elite Selection Yield Trials were initiated to offer selected cooperators an opportunity to assess the performance of elite lines from the Mexican-CIMMYT joint bread wheat breeding program considerably early than previously possible. The main emphasis of these experiments is to evaluate yield potential and, secondarily, other agronomic traits and disease reactions. Four replications were considered necessary to evaluate better their true potential. From the beginning it was obvious that the wealth of material if in four replications would be an unwieldy experiment for most cooperating stations.

With this consideration in mind, it was decided to offer the ESYT in two separate but equal parts. In this way cooperating scientists would be free to adjust better the station land requirements and/or elect to plant an experiment in each of two different locations. This section of the report deals only with results returned for the First ESYT-2.

METHODS AND MATERIALS

The procedures for the First ESYT-2 were identical to those previously described for the First ESYT-1. The selection of Mexican varieties was a deliberate effort to reflect the pedigrees of the elite lines selected for inclusion in this nursery. Text Table 1 presents the 25 advanced lines and varieties (with pedigree information) selected in preliminary yield trials conducted at CIANO, State of Sonora and in Toluca, State of Mexico.

DATA SUMMARIZATION

The methods of data summarization and tabular presentation were identical to those used for the First ESYT-1 as described in the previous section of this report. Because of the unique nature of ESYT-1 and ESYT-2 no combined analyses were attempted.

RESULTS AND DISCUSSION

Data were returned from 12 of the 20 recipient First ESYT-2 cooperators. Figure 1 presents the location of reporting scientists. One should note that receipt of data for ESYT-1 does not imply returned data from ESYT-2 (and conversely). Figure 2 indicates the range of climatic differences between locations with respect to planting dates, elevation and geographic regions of the world. Such location differences will hopefully contribute to general knowledge of how these elite lines will perform under varying conditions.

Tables 1-12 are summaries of the data returned from cooperating scientists. Inspection of individual locations may be helpful in identifying elite lines that might be suitable to specific conditions of other locations.

Table 13 presents the variety mean yields on all locations reporting. We suggest that, even with a limited number of sites, useful information on broad adaptability can be gained from such data.

RESULTS OF THE FIRST
ELITE SELECTION YIELD TRIAL - 1-2,
1969-1970

ACKNOWLEDGEMENTS

The excellent cooperation of all participants, and in particular Dr. A. Hafiz, Regional Consultant, F.A.O., Near East Wheat and Barley Improvement Project, Cairo, U.A.R., who organized and supervised the experiments in the Near and Middle East, is appreciated.

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FIGURE 1

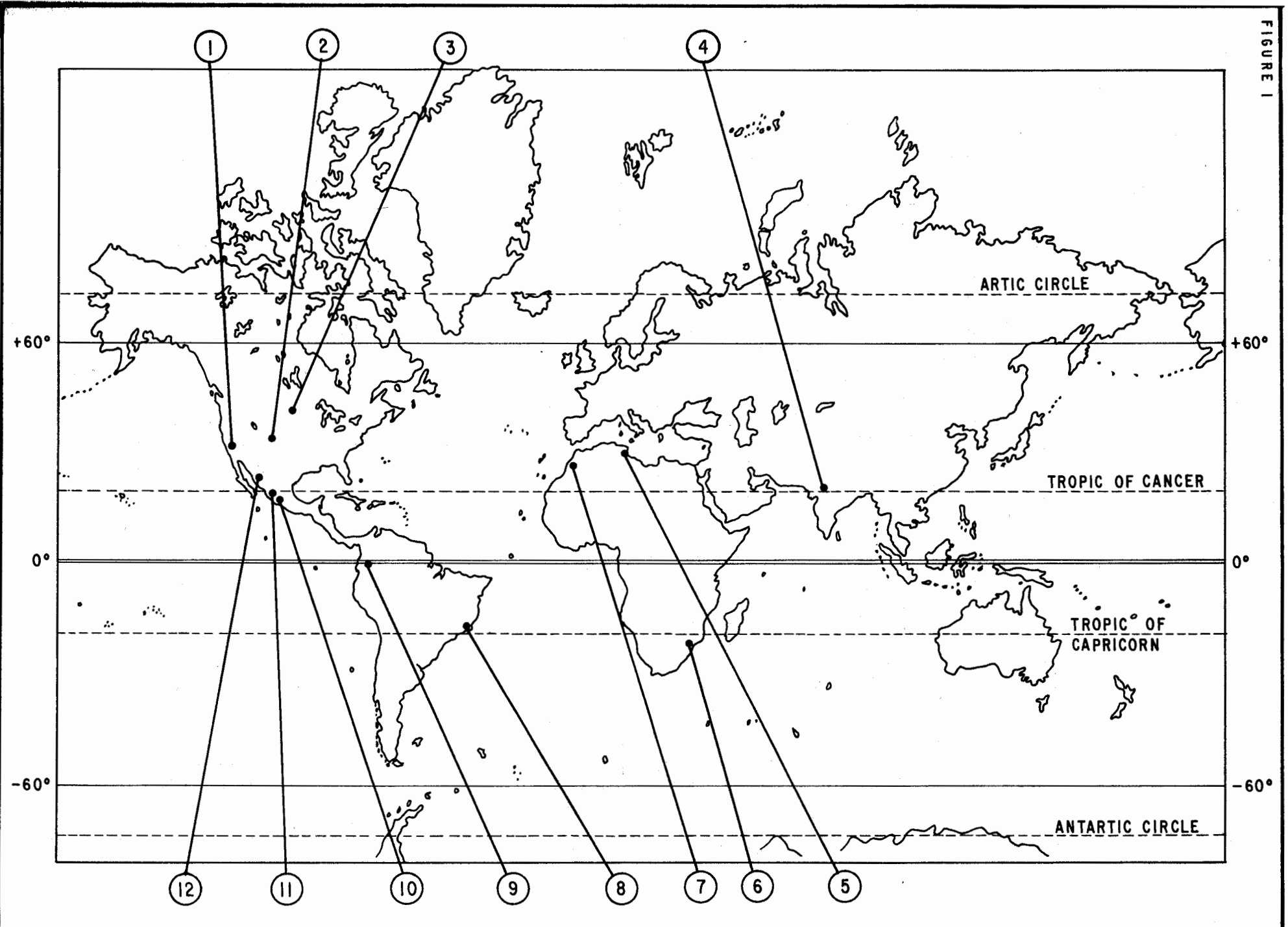


Figure 2

Location

First ESYT-2 (1969-70) Average Growing Season

Altitude
Meters

		1969					1970										
		N	D	J	F	M	A	M	J	J	A	S	O	N	D		
<u>NORTH AMERICA</u>																	
1.	Davis, California, U.S.A.															15	
2.	Ft. Collins, Colorado, U.S.A.															1,524	
3.	Casselton, N. Dakota, U.S.A.															290	
<u>ASIA</u>																	
4.	Lyallpur, West Pakistan															213	
<u>AFRICA</u>																	
5.	Koudiat, Tunisia															20	
6.	Makatini, Lynn East, South Africa															400	
7.	Merchouch, Morocco																
<u>SOUTH AMERICA</u>																	
8.	Julio de Castilhos, Brazil															516	
9.	Santa Catalina, Quito, Ecuador															3,058	
<u>MESOAMERICA</u>																	
10.	Toluca, Mexico															2,600	
11.	El Roque, Guanajuato, Mexico															1,765	
12.	Obregon, Sonora, Mexico															40	

Text Table 1. BREAD WHEAT ENTRIES IN THE FIRST ELITE SELECTION YIELD TRIAL-2, 1969-1970.

Variety No.	Variety	Cross	Pedigree
01	Sonora 64	Yaktana 54xNorin 10-Brevor/Yaqui 54 ²	8469-2Y-6C-6Y-4C-2Y-1C
02		Son64-Y50 _E x Gto/Inia	23528-7M-1T-1M-8Y-0M
03	Inia 66	Lerma Rojo 64-Sonora 64	19008-83M-100Y-100M-100Y-100C
04		Son64-K1.Rend/Cno"S"-LR64 ² xSon64	27139-75M-0Y
05		Inia 66-23584	26478-16M-0Y
06	Tobari 66	TzPP-Son 64	19021-4M-3Y-102M-100Y-101C
07		Inia 66-23584	26478-7Y-9M-0Y
08		23584-Inia 66	26591-10Y-3M-0Y
09	Penjamo 62	Frontana x Kenya58-Newthatch/N10B	7078-1R-6M-1R-1M
10		Cno ² - Chris	26527-1T-2M-0Y
11		Son 64-Y50 _E x Gto/Cno	25952-3R-1M-0Y
12		LR 64-Son 64xNapq/Cno	28036-63M-0Y
13		Tob 66-Cno"S"	24908-53M-2Y-1M-0Y
14	Siete Cerros	(FrontanaxKenya58-Newthatch/N10B)Gb55	8156-1M-2R-4M
15		Tob 66-Cno"S"	25000-38M-2Y-1M-0Y
16		Cno-No 66	25111-6M-7Y-3M-0Y
17	Ciano 67	Pitic 62-Chris"S"xSon64	19957-18M-1Y-3M-9Y
18		K1.Rend-Son 64 ² x Inia/Cno	24970-12M-2T-17M-0Y
19		Cno - Pj 62	25093-30M-1T-2M-0Y
20	Cajeme 71	Bluebird 4 CnoxSon64-K1.Rend/8156	23584-26Y-2M-3Y-2M-0Y
21		Bluebird 1 (Resel) CnoxSon64-K1.Rend/8156	23584-15Y-6M-4Y-0M
22		Son64-TzPPxY54/Son64-Y50 _E x Gto	24217-3Y-1M-1Y-2M-0Y
23		Cno "S" - Inia "S" ²	23959-52T-1M-2Y-0M
24		Cno-E1 Gau x Son64/TzPP-An 64	23973-3T-1M-2R-2M-0Y
25		23584-Inia 66	26591-1T-7M-0Y

TABLE 1 NORTH AMERICA ESYT-2 1969-70

Location by Country: THE UNITED STATES OF AMERICA State: California Station:(University of California at Davis) Elevation: +15 meters. Latitude: 38°32'N. Longitude: 121°45'W.

Cooperators' Names: Dr. J.A. Rupert and Dr. C.O. Qualset. Date Planted: December 1, 1969 Date Harvested: Not Stated

No. of Irrigations: 2 No. of Days with Rains: Not Stated Total Amount of Moisture: Not Stated Total Amount Fertilizer in kg/ha: 112 N OP OK

Comments: Unusually early and warm Spring. Good development of stripe rust and heavy infestation of aphids.

Rank	Entry No.	Variety or Cross	Yield Kg/Ha	Days to Maturity	Stripe rust	Height cm	Shattering	Test Wt. Kg/Hl
1	20	Bluebird 4	6171	135	0	90	2	78.5
2	25	23584 x Inia 66	5748	136	5MR	88	5	78.1
3	11	((Son64 x Y50E) x Gto) x Cno	5690	141	0	101	7	77.6
4	03	Inia 66	5668	135	0	78	0	78.1
5	05	Inia 66 x 23584	5656	135	0	85	0	78.1
6	22	((Son64 x Tz PP) x Y54) x ((Son64 x Y50E) x Gto)	5308	135	TRR	73	4	76.1
7	02	((Son64 x (Y50E)5) x Gto) x Inia	5163	142	0	96	0	78.2
8	07	Inia 66-23584	5117	140	TRR	70	0	78.2
9	21	Bluebird 1	5022	134	0	90	4	74.4
10	04	(Son64 x Kl. Rend) (Cno "S" x (LR64)2) x Son 64	4959	134	0	78	0	77.0
11	06	Tobari 66	4710	143	50S	105	18	74.3
12	12	((LR64 x Son64) x Napo) x Cno	4669	135	5R	89	2	74.3
13	01	Sonora 64	4652	141	60S	100	8	73.3
14	19	Cno x Pj 62	4652	130	0	90	2	77.1
15	14	Siete Cerros	4652	134	0	89	1	78.1
16	17	Ciano 67	4615	134	0	89	4	77.3
17	23	Cno "S" x (Inia "S")2	4582	135	0	88	2	78.1
18	18	((Kl. Rend x (Son64)2) x Inia)x Cno	4573	139	0	96	4	73.6
19	16	Cno x No 66	4528	134	0	91	0	77.2
20	10	(Cno)2 x Chris	4465	136	0	96	22	74.4
21	13	Tob 66 x Cno "S"	4441	135	TRR	91	0	75.5
22	15	Tob66 x Cno "S"	4312	135	0	93	1	75.5
23	24	((Cno x El Gau) x Son64) (TzPP x An 64)	4295	130	0	89	3	79.1
24	09	Penjamo 62	4187	133	0	89	5	79.4
25	08	23584 x Inia 66	3611	133	0	89	5	79.4

TABLE 2 NORTH AMERICA ESYT-2 1969-70

Location by Country: THE UNITED STATES OF AMERICA State: Colorado Station: Fort Collins(CARGILL) Elevation: +1524 m Latitude: 40°35'W Longitude: 105°05'W

Cooperators' Names: B. C. Curtis, R. Johnston, B. J. Roberts Date Planted: 13 April, 1970 Date Harvested: Not Stated

No. of Irrigations: 2 No. of Days with Rains: Not Stated Total Amount of Moisture: 406 mm. approx. Total Amount Fertilizer in kg/ha: 112 N O P O K

Comments: It was cool early in the season and then turned hot during mid-crop cycle and remained hot until harvest. The experiment was inoculated with stem and leaf rust but it developed very slowly. No weed or pest problems were noted. Height scale from 1 (tall) to 3 (dwarfed) with (+) more dwarfed and (-) less.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Height	Test Wt. Kg/hl
1	23	Cno "S" x (Inia "S") 2	5865	E ₂ -	81.7
2	14	Siete Cerros	5809	E ₂ -	77.9
3	17	Ciano 67	5788	E ₂	80.4
4	21	Bluebird 1	5771	E ₂ -	82.4
5	09	Penjamo 62	5684	E ₂	79.2
6	16	Cno. x No 66	5622	E ₂ -	82.4
7	06	Tobari 66	5328	E ₂	79.2
8	02	((Son 64 x (Y50E)5) x Gto) x Inia	5153	E ₂	79.8
9	20	Bluebird 4	5122	E ₃	81.1
10	01	Sonora 64	5049	E ₂	78.5
11	22	((Son64 x TzPP) x Y54) x ((Son64 x Y50E) x Gto)	5044	E ₂	81.7
12	03	Inia 66	4890	E ₂	81.1
13	19	Cno x Pj 62	4806	E ₂	80.4
14	07	Inia 66-23584	4729	E ₂	81.1
15	04	(Son64 x Kl. Rend)(Cno "S" x (LR64) 2) x Son 64	4704	E ₂	81.1
16	12	((LR64 x Son 64) x Napo) x Cno	4651	E ₂	77.9
17	13	Tob 66 x Cno "S"	4589	E ₂	80.4
18	18	((Kl. Rend x (Son 64) 2) Inia) x Cno	4530	E ₂	81.1
19	11	((Son 64 x Y50E) x Gto) x Cno	4372	E ₂	81.1
20	15	Tob 66 x Cno "S"	4336	E ₂	79.8
21	08	23584 x Inia 66	4315	E ₂	81.7
22	10	(Cno) 2 x Chris	4142	E ₂	78.5
23	24	((Cno x El Gau) x Son 64) (TzPP x An 64)	4110	E ₂	78.8
24	25	23584 x Inia 66	4101	E ₃	79.2
25	05	Inia 66 x 23584	3264	E ₃	79.2

TABLE 3. NORTH AMERICA ESYT-2 1969-70

Location by Country: THE UNITED STATES OF AMERICA State: North Dakota Station: CASSELTON Elevation: +290 m Latitude: 47°N Longitude: 97°W

Cooperators' Names: Dekald Ag. Research, Inc. Date Planted: 20 May 1970 Date Harvested: Not Stated

No. of Irrigations: None No. of Days with Rains: Not Stated Total Amount of Moisture: Not Stated Total Amount Fertilizer in Kg/ha: O N 15.6 P O K

Comments: Experiment was damaged by excessive water. Rust development was slow and the severity was low. In the early parts of the season it was cool with high moisture. Later, from heading to harvest the weather was hot and dry. Lodging scale 0 (good) to 4 and shattering scale 0 (good) to 5.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Days to Flowering	Leaf rust	Stem rust	Height cm	Lodging scale	Shattering scale	Test Wt. Kg/hl.
1	06	Tobari 66	2779	53	TRMR	TRR	72	0	1	78.5
2	09	Penjamo 62	2686	53	40S	90S	80	1	1	75.3
3	15	Tob 66 x Cno "S"	2580	50	20MS	0	68	0	1	77.9
4	04	(Son 64 x Kl. Rend) (Cno "S" x (LR64) 2) x Son 64	2293	52	0	0	70	0	5	78.5
5	03	Inia 66	2240	1	50S	0	62	0	2	75.9
6	10	(Cno) 2 x Chris	2220	11	TRR	20S	57	0	2	75.3
7	14	Siete Cerros	2206	55	80S	20R	75	2	4	74.0
8	12	((LR64 x Son64) x Napo) x Cno	2183	51	40S	0	67	0	3	75.9
9	13	Tob 66 x Cno "S"	2171	52	TRMS	0	60	0	1	75.9
10	07	Inia 66 - 23584	1988	46	20S	TRR	63	0	2	74.6
11	01	Sonora 64	1982	50	TRS	80S	60	0	1	73.4
12	21	Bluebird 1	1950	54	TRS	TRMS	65	0	2	75.9
13	22	((Son64 x TzPP) x Y54) x ((Son64 x Y50E) x Gto)	1947	55	61S	TRMS	68	2	4	75.3
14	11	((Son64 x Y50E) x Gto) x Cno	1893	49	TRR	20MS	60	0	3	75.9
15	25	23584 x Inia 66	1867	50	TRR	TRR	48	0	1	74.0
16	08	23584 x Inia 66	1831	50	TRR	TRR	70	0	5	77.2
17	18	((Kl. Rend x (Son 64)2) Inia) x Cno	1770	51	0	TRR	60	3	3	75.3
18	02	((Son64 x (Y50E)5) x Gto) x Inia	1640	--	20R	0	56	3	3	74.0
19	17	Ciano 67	1607	52	40S	40S	64	0	3	76.6
20	05	Inia 66 x 23584	1500	50	TRS	0	44	0	0	74.0
21	16	Cno x No 66	1447	51	TRMR	0	55	0	1	74.6
22	23	Cno "S" x (Inia "S") 2	1417	54	TRMS	TRMS	65	0	4	75.3
23	19	Cno x PJ62	--	--	TRMS	40S	52	0	2	--
24	20	Bluebird 4	--	51	20S	TRR	55	0	1	--
25	24	((Cno x El Gau) x Son 64) (TzPP x An64)	--	--	30S	20S	58	1	1	--

TABLE 4 ASIA ESYT-2 1969-70

Location by Country: West Pakistan State: Lyallpur. Station: (Ayub Agricultural Research Institute) Elevation: +213 meters. Latitude: 31°30' N. Longitude: 73°10' E

Cooperators' Names: Cereal Botanist Date Planted: December 30, 1969 Date Harvested: Not Stated

No. of Irrigations: 4 of 16.2 mm each. No. of Days with Rains: 10.8 mm. (6 showers) Total Amount of Moisture: Not Stated Total Amount Fertilizer in Kg/ha: 100.8 N O P O K

Comments: The climatic conditions remained normal throughout the experiment. Good development of stripe and leaf rusts. No pest damage. Planted later than normal.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Days to Flowering	Days to Maturity	Leaf rust	Stripe rust	Height cm
1	07	Inia 66-23584	5387	67	103	0	0	103
2	09	Penjamo 62	5063	75	108	0	5R	108
3	08	23584 x Inia 66	5013	73	106	0	0	105
4	03	Inia 66	4988	70	103	0	0	107
5	16	Cno x No 66	4797	74	106	0	0	102
6	17	Ciano 67	4673	67	101	0	5R	102
7	23	Cno. "S" x (Inia"S") 2	4665	80	110	0	10MR	96
8	18	((Kl. Rend x (Son64) 2) x Inia) x Cno	4615	73	106	0	10MR	95
9	10	(Cno) 2 x Chris	4507	73	104	0	0	91
10	01	Sonora 64	4366	69	101	0	40S	94
11	04	(Son64 x Kl. Rend) (Cno"S" x (LR64)2) x Son64	4324	68	103	0	5R	96
12	14	Siete Cerros	4265	81	114	25MS	25MS	98
13	11	((Son64 x Y50E) x Gto) x Cno	4225	70	104	0	5MR	94
14	20	Bluebird 4	4216	76	108	0	0	76
15	19	Cno x PJ 62	4075	70	102	0	0	97
16	21	Bluebird 1	3918	77	107	0	0	102
17	24	((Cno x El Gau) x Son64) (TzPP x An64)	3909	74	103	0	25MS	95
18	05	Inia 66 x 23584	3801	67	104	0	5R	69
19	12	((LR64 x Son 64) x Napo) x Cno	3752	73	106	0	10MR	92
20	25	23584 x Inia 66	3635	72	104	0	0	72
21	02	((Son64 x (Y50E)5) x Gto) x Inia	3619	76	109	0	40S	86
22	15	Tob 66 x Cno "S"	3561	67	103	0	5R	90
23	13	Tob 66 x Cno "S"	3528	70	104	R	0	87
24	22	((Son64 x Tzpp) x Y54) x ((Son64 x Y50E) x Gto)	3445	76	106	0	10MR	94
25	06	Tobari 66	3254	73	108	0	0	103

TABLE 5 AFRICA ESYT-2 1969-70

Location by Country: TUNISIA State: Bou Salem (Koudiat)

Cooperators' Names: Dr. Willis L. McCuiston

Comments: No other information provided

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Leaf rust	Stripe rust	Height cm	Septoria	Days to Maturity
1	05	Inia 66 x 23584	4700	0	20MR	60	30MS	101
2	25	23584 x Inia 66	4628	0	0	65	50MS	102
3	03	Inia 66	4564	0	60S	95	30MS	101
4	07	Inia 66 x 23584	4476	0	20MS	85	30MR	101
5	09	Penjamo 62	4464	0	0	100	40MS	102
6	21	Bluebird 1	4460	0	0	95	40MS	105
7	20	Bluebird 4	4456	0	0	70	30MS	106
8	08	23584 x Inia 66	4436	0	0	100	30MS	106
9	16	Cno x No 66	4372	0	40S	90	30MR	105
10	12	((Inia "S" x Napo))Cno	4356	0	0	85	30MS	102
11	14	Siete Cerros	4344	60S	60S	85	20MS	115
12	04	(Son 64 x Kl. Rend) (Cno "S" x (LR64) 2) x Son 64	4236	0	0	85	30MS	101
13	13	Tob 66 x Cno "S"	4180	0	0	80	20MS	102
14	06	Tobari 66	4172	0	0	95	20MR	105
15	10	(Cno) 2 x Chris	4148	0	20MS	90	60MS	102
16	19	Cno x Pj 62	4052	0	0	85	50MS	102
17	22	((Son64 x TzPP) x Y54) x ((Son64 x Y50E) x Gto)	4004	0	0	90	60S	105
18	11	((Son64 x Y50E) x Gto) x Cno	3992	0	30MS	80	20MS	101
19	23	Cno "S" x (Inia "S") 2	3972	0	80S	90	40MS	112
20	17	Ciano 67	3944	0	0	90	20MS	101
21	15	Tob 66 x Cno "S"	3936	0	0	85	20MS	101
22	24	((Cno x El Gau) x Son64) (TzPP x An64)	3696	0	0	85	40MS	105
23	18	((Kl. Rend x (Son64) 2) Inia) x Cno	3688	0	0	90	30MS	102
24	01	Sonora 64	3676	40MS	0	80	30MS	102
25	02	((Son64 x (Y50E)5) x Gto) x Inia	3232	0	40S	85	30MS	106

TABLE 6 AFRICA ESYT-2 1969-70

Location by Country: REPUBLIC OF SOUTH AFRICA Station: Makatini Experimental Station Elevation: +20 m. Latitude: 27° 5' S Longitude: 32° 0' E
 Cooperators' Names: D. Rossouw, J. Dejager, E. Whitlock, L. Robertson, D. Malan Date Planted: 20 April 1970 Date Harvested: Not Stated.
 No. of Irrigations: Not Stated No. of Days with Rains: Nil Total Amount of Moisture: 351 mm. Total Amount Fertilizer in kg/ha: 80 N 0 P 0 K
 Comments: Climate was hot and humid. Stem and leaf rust development was severe. Termites and birds caused some damage.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Days to flowering	Days to maturity	Leaf rust	Stem rust	Height cm	Test Wt. Kg/hl	1000 grain Wt.
1	25	23584 x Inia 66	6859	55	106	25VR	15S	64	82.4	44.2
2	20	Bluebird 4	6453	75	111	5VR	TS	74	77.9	42.6
3	23	Cno "S" x (Inia "S") ²	6391	66	112	25VR	TMS	76	78.5	39.7
4	12	((LR 64 x Son 64) x Napo) x Cno	6083	53	107	100S	100S	77	81.7	36.8
5	11	((Son 64 x Y50E) x Gto) x Cno	5953	52	101	25VR	2S	69	83.0	42.7
6	21	Bluebird 1	5938	60	109	20MS	15S	102	83.7	41.1
7	03	Inia 66	5728	56	105	25MS	20MS	78	84.9	43.8
8	24	((Cno x El Gau) x Son 64)(TzPP x An64)	5598	56	106	15R	10MS	75	83.0	44.1
9	08	23584 x Inia 66	5584	55	106	25VR	5S	80	82.4	43.8
10	16	Cno x No 66	5496	59	106	20VR	5S	71	83.7	46.1
11	22	((Son 64 x TzPP) x Y54) x ((Son 64 x Y50E) x Gto)	5493	60	107	25MS	20S	75	81.1	38.7
12	04	(Son 64 x Kl.Rend)(Cno "S" x (LR 64)2) x Son 64	5446	55	106	15MS	10MS	77	83.0	43.1
13	19	Cno x Pj 62	5315	52	101	40VR	20S	64	83.7	38.2
14	06	Tobari 66	5226	58	106	25R	TMS	80	80.4	35.0
15	10	(Cno)2 x Chris	5186	55	103	25VR	0	71	79.8	38.5
16	02	((Son 64 x (Y50E)5) x Gto) x Inia	4918	57	105	25VR	10MS	66	81.1	39.6
17	09	Penjamo 62	4778	58	111	25MS	40S	79	77.9	39.8
18	13	Tob 66 x Cno "S"	4663	55	104	10MR	TMS	72	82.4	37.5
19	15	Tob 66 x Cno "S"	4640	52	102	25VR	TMS	70	83.7	39.6
20	05	Inia 66 x 23584	4520	53	102	100S	5MS	57	82.4	41.6
21	14	Siete Cerros	4483	59	109	100S	100S	77	73.4	34.5
22	01	Sonora 64	4315	51	83	100S	10S	65	82.4	41.5
23	17	Ciano 67	4278	52	101	15VR	0	74	83.7	40.8
24	18	((Kl.Rend x (Son 64)2) Inia) x Cno	3933	52	102	25VR	TMS	68	81.7	37.1
25	07	Inia 66-23584	3925	53	84	25VR	6MS	68	83.0	42.6

TABLE 7 AFRICA ESYT-2 1969-70

Location by Country: MOROCCO Station: Merchouch Elevation: + 400 m Latitude: 33°50' N Longitude: 7° 00'W
 Cooperators' Names: A. Acosta Date Planted: 26 December 1969 Date Harvested: Not Stated
 No. of Irrigations: None No. of Days with Rains: Not Stated Total Amount of Moisture: 369 mm. Total Amount Fertilizer in kg/ha: 100 N 17.6 P 33.2K

Comments: Good climatic conditions up to tillering were followed by dry periods at tillering and flowering and continuing too dry until maturity. Disease development was not good. Pest problems were Hessian fly, Sawfly and wheat stem maggot (injury as fallen tillers). Weed problems with wild oats and others.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Days to Flowering	Days to Maturity	Height cm	Test Wt. Kg/hl	Fallen Tillers %
1	14	Siete Cerros	2817	100	143	90	76.0	5
2	04	(Son 64 x KL. Rend) (Cno "S" x (LR64) 2) x Son 64	2811	91	133	85	79.5	10
3	09	Penjamo 62	2519	96	141	91	77.0	22
4	12	((LR64 x Son64) x Napo) x Cno.	2490	95	140	86	78.0	15
5	01	Sonora 64	2472	89	133	80	76.9	5
6	20	Bluebird 4	2399	97	144	95	77.4	12
7	03	Inia 66	2377	91	133	87	79.7	8
8	16	Cno x No 66	2337	94	139	90	79.5	10
9	07	Inia 66-23584	2330	89	133	87	79.7	16
10	08	23584 x Inia 66	2328	95	142	90	77.3	15
11	11	((Son64 x Y50E) x Gto) x Cno	2314	92	141	85	77.8	10
12	19	Cno x Pj 62	2299	100	143	90	76.0	5
13	15	Tob66 x Cno "S"	2264	91	137	85	80.2	12
14	05	Inia 66 x 23584	2234	91	135	68	78.1	3
15	18	((Kl. Rend x (Son64)2) Inia)x Cno	2229	91	139	77	77.4	10
16	23	Cno. "S" x (Inia "S") 2	2193	98	144	88	76.3	26
17	02	((Son64 x (Y50E)5) x Gto) x Inia	2187	96	143	77	75.0	6
18	17	Ciano 67	2089	90	133	86	79.4	12
19	06	Tobari 66	2088	93	141	88	78.9	13
20	21	Bluebird 1	2064	96	140	87	76.8	12
21	24	((Cno x El Gau) x Son64) (TzPP x An64)	2045	97	139	85	76.3	13
22	13	Tob 66 x Cno "S"	2011	91	139	80	78.5	11
23	22	((Son 64 x TzPP) x Y54) x ((Son64 x Y50E) x Gto)	1952	95	142	81	76.2	17
24	25	23584 x Inia 66	1903	94	140	66	75.8	5
25	10	(Cno) 2 x Chris	1851	96	137	82	76.8	16

TABLE 8 SOUTH AMERICAN ESYT-2 1969-70

Location by Country: Brazil Station: Julio de Castilhos Elevation: + 516 m Latitude: 29°13' 26" S Longitude 53°40' 43"W

Cooperators' Names: P. A. T. Date Planted: 27 June, 1970 Date Harvested: Not Stated

No. of Irrigations: None No. of Days with Rains: (Normal) Total Amount of Moisture: mm. Total Amount Fertilizer in kg/ha: 73 N 128 P 12K

Comments: No insect or pest problems. Mildew appeared early at about tillering and continued into heading. Strong attack of leaf rust but stem rust came in late. Septoria infection appeared late.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Leaf rust	Mildew %
1	20	Bluebird 4	1362	0	70
2	24	((Cno x El Gau) x Son64) (TzPP x An64)	1301	TR	60
3	07	Inia 66-23584	1269	TR	50
4	14	Siete Cerros	1250	20MS	5
5	02	((Son 64 x (Y 50 E)5) x Gto) x Inia	1191	TR	60
6	15	Tob 66 x Cno "S"	1164	TR	70
7	16	Cno x No 66	1142	TR	50
8	25	23584 x Inia 66	1079	TR	60
9	23	Cno "S" x (Inia "S") 2	1077	TMR	40
10	10	(Cno) 2 x Chris	1074	TR	50
11	01	Sonora 64	1012	TR	20
12	03	Inia 66	1008	TMR	40
13	11	((Son 64 x Y50E) x Gto) x Cno	1005	TMR	60
14	04	(Son 64 x Kl. Rend) (Cno "S" x (LR64) 2) x Son64	962	TR	60
15	17	Ciano 67	919	TR	80
16	09	Penjamo 62	886	10MR	90
17	05	Inia 66 x 23584	883	5MS	70
18	13	Tob66 x Cno "S"	865	10MR	50
19	19	Cno x Pj62	852	TR	30
20	21	Bluebird 1	726	TR	70
21	08	23584 x Inia 66	711	TMR	50
22	22	((Son 64 x TzPP) x Y54) x ((Son 64 x Y50E) x Gto)	658	TR	60
23	06	Tobari 66	657	10MR-MS	43
24	12	((LR64 x Son64) x Napo) x Cno	540	10MS	10
25	18	((Kl. Rend x (Son64)2) Inia)x Cno	447	TR	50

TABLE 9 SOUTH AMERICA ESYT-2 1969-70

Location by Country: ECUADOR Station: Santa Catalina (Quito) Elevation: +3058 m Latitude: 00° 22' S Longitude: 78° 38' W
 Cooperators' Names: Dept. of Cereals, Wheat Section Date Planted: 17 February 1970 Date Harvested: Not Stated
 No. of Irrigations: 0 No. of Days with Rains: Not Stated Total Amount of Moisture: 754 mm. Total Amount Fertilizer in Kg/Ha: 30 N 52.8 P 24.9 K
 Comments: Climatic conditions were normal during the experiment. Some problems with Rumex crispus and Spergula arvensis reported.

Rank	Entry No	Variety or Cross	Yield Kg/Ha	Days to Flowering	Stripe rust	Height cm	Lodging %	Test Wt. Kg/Hl	1000 grain Wt.	Septoria spp. %	Stripe rust head %
1	20	Bluebird 4	2262	86	47MS	86	9	68.3	39.8	20	33
2	16	Cno x No 66	2162	83	35MS	94	14	70.3	35.0	14	18
3	06	Tobari 66	2037	83	43MS	97	7	72.8	30.8	10	25
4	23	Cno "S" x (Inia "S") 2	1896	88	90S	94	15	68.3	27.3	16	30
5	07	Inia 66-23584	1823	81	65MS	93	9	72.2	34.0	14	38
6	04	(Son 64 x Kl. Rend)(Cno "S" x (LR 64) 2) x Son 64	1793	82	40MS	89	13	73.8	32.0	21	21
7	05	Inia 66 x 23584	1712	83	33MS	62	1	72.5	33.8	8	10
8	19	Cno x Pj 62	1704	83	45MS	90	4	69.0	34.5	20	38
9	22	((Son 64 x TzPP) x Y54) x ((Son 64 x Y50E) x Gto)	1692	85	100S	89	8	74.8	34.0	8	16
10	24	((Cno x El Gau) x Son 64)(TzPP x An 64)	1637	85	38MS	90	3	70.0	30.5	13	24
11	17	Ciano 67	1612	82	60MS	95	8	70.8	33.3	16	58
12	02	((Son 64 x (Y50E) 5) x Gto) x Inia	1600	88	48MS	83	7	65.8	25.3	14	45
13	18	((Kl. Rend x (Son 64) 2) Inia) x Cno	1596	82	60MS	84	1	52.5	26.8	13	35
14	10	(Cno) 2 x Chris	1583	83	43MS	89	4	69.3	34.0	19	29
15	13	Tob 66 x Cno "S"	1467	83	55MS	88	5	71.3	30.8	13	40
16	11	((Son 64 x Y50E) x Gto) x Cno	1412	82	43MS	91	4	66.5	30.0	15	55
17	25	23584 x Inia 66	1354	83	90S	67	0	68.5	25.3	11	36
18	12	((LR 64 x Son 64) x Napo) x Cno	1275	83	50MS	90	2	67.5	31.3	15	48
19	03	Inia 66	1217	79	100S	96	8	68.8	32.0	6	60
20	08	23584 x Inia 66	1200	82	100S	85	4	68.5	27.3	5	30
21	15	Tob 66 x Cno "S"	896	81	60MS	93	2	68.0	30.8	16	63
22	21	Bluebird 1	717	85	100S	94	4	61.3	24.5	9	93
23	09	Penjamo 62	671	84	100S	98	5	61.0	26.3	4	85
24	14	Siete Cerros	417	93	100S	86	1	0	15.5	13	95
25	01	Sonora 64	100	80	100S	90	2	21.0	17.7	3	100

TABLE 10 MESOAMERICA ESYT-2 1969-70

Location by Country: MEXICO State: Mexico Station: TOLUCA Elevation: +2600m. Latitude: 19°25'W Longitude: 99°5' W

Cooperators' Names: CIMMYT WHEAT PROGRAM Date Planted: 20 May 1970 Date Harvested: October 1970

No. of Irrigations: Not Stated No. of Days with Rains: Not Stated Total Amount of Moisture: Not Stated Total Amount Fertilizer in kg/ha 100 N 80 P₂O₅ 0 K

Comments: Climatic conditions throughout the test cold and rainy. Weeds were controlled by hand and chemically. Rust development was slower than usual. Leaf damage is a physiological problem of unknown cause rated from 0 (good) to 5.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Days to Flowering	Stripe rust	Leaf rust	Height cm	1000 grain wt.	Leaf Damage	Test Weight
1	09	Penjamo 62	7285	74	5MS	5MS	103	43.5	2	76.8
2	03	Inia 66	7093	70	TMS	5MS	95	45.6	3	75.7
3	12	((LR64 x Son64) x Napo) x Cno	6854	72	0	TMS	91	35.0	2	77.1
4	07	Inia 66 - 23584	6729	67	0	TMR	95	38.6	3	79.0
5	21	Bluebird 1	6692	73	0	TRR	96	33.7	4	78.0
6	08	23584 x Inia 66	6687	72	0	5MR	96	43.4	3	76.9
7	16	Cno x No 66	6682	68	0	TMR	90	40.1	3	78.1
8	01	Sonora 64	6562	68	5MS	10MS	34	36.3	3	74.7
9	20	Bluebird 4	6453	77	0	TRR	83	45.3	3	75.5
10	23	Cno "S" x (Inia "S") 2	6219	76	0	TMS	95	34.1	2	74.9
11	19	Cno x PJ62	6105	69	TMS	TMR	89	43.6	3	78.3
12	15	Tob 66 x Cno "S"	6078	69	5MS	TRR	91	38.5	3	76.7
13	10	(Cno) 2 x Chris	6037	70	0	TRR	89	40.5	3	76.0
14	22	((Son64 x TzPP) x Y54) x ((Son64 x Y50E) x Gto)	5990	75	0	TRR	96	36.4	2	76.7
15	04	(Son64 x Kl. Rend) (Cno "S" x (LR64) 2) x Son 64	5980	69	0	TMS	90	44.9	3	74.0
16	11	((Son64 x Y50E) x Gto) x Cno	5944	68	TMR	TMS	91	43.6	3	76.6
17	17	Ciano 67	5912	67	0	TRR	95	35.2	3	78.7
18	24	((Cno x El Gau) x Son64) (TzPP x An64)	5662	76	0	TMR	90	41.6	3	76.0
19	18	((Kl. Rend x (Son64) 2) x Inia) x Cno	5486	67	0	TRR	69	33.7	3	74.8
20	14	Siete Cerros	5455	78	25S	20MS	94	25.6	3	66.7
21	25	23584 x Inia 66	5387	71	TMR	TMS	70	31.7	4	71.8
22	13	Tob 66 x Cno "S"	5195	71	TMR	TRR	88	38.9	2	77.1
23	02	((Son 64 x (Y50E) 5) x Gto) x Inia	5101	77	TMS	TRR	89	34.5	3	76.7
24	05	Inia 66 x 23584	4883	69	0	TRR	65	38.7	4	73.3
25	06	Tobari 66	4633	75	0	TRR	101	33.2	2	74.9

TABLE 11 MESOAMERICA ESYT-2 1969-70

Location by Country: MEXICO CIAB. State: Guanajuato Station: El Roque Elevation: +1765 meters. Latitude.

Cooperators' Names: Ing. Ricardo Urbina. Date Planted: December 18, 1969 Date Harvested: Not Stated

No. of Irrigations: 6 No. of Days with Rains: Not Stated Total Amount of Moisture: Not Stated Total Amount Fertilizer in kg/ha: 160 N 60 P O K

Comments: Irrigation failure for 10 days may have resulted in some adverse conditions.

Rank <u>1</u> /	Entry No.	Variety or Cross	Yield Kg/ha	Days to Flowering	Days to Maturity	Stripe rust	Height cm
1	09	Penjamo 62	7052	88	130	70S	110
2	02	((Son 64 x (Y50E)5) x Gto) x Inia	7042	92	132	5MS	90
3	20	Bluebird 4	6849	95	133	20MS	80
4	03	Inia 66	6660	87	127	10MS	110
5	21	Bluebird 1	6599	95	132	60S	105
6	22	((Son 64 x TzPP) x Y54) x ((Son64 x Y50E) x Gto)	6401	90	137	5R	105
7	04	(Son 64 x Kl. Rend)(Cno "S" x (LR 64)2) x Son 64	6401	83	123	5R	105
8	07	Inia 66-23584	6375	80	126	50S	110
9	14	Siete Cerros	6281	95	133	80S	105
10	16	Cno x No 66	6281	88	127	0	100
11	23	Cno "S" x (Inia "S") 2	6198	96	133	50MS	100
12	10	(Cno) 2 x Chris	6104	87	123	0	100
13	11	((Son 64 x Y50E) x Gto) x Cno	5874	83	123	0	95
14	17	Ciano 67	5650	79	123	5MS	95
15	06	Tobari 66	5624	93	133	Tr. R	115
16	18	((Kl. Rend x (Son 64) 2) Inia) x Cno	5572	86	130	0	100
17	01	Sonora 64	5546	80	120	2/	95
18	15	Tob 66 x Cno "S"	5358	80	123	10MS	90
19	13	Tob 66 x Cno "S"	5348	83	127	0	100
20	19	Cno x Pj 62	5322	84	123	10S	95
21	24	((Cno x El Gau) x Son 64) (TzPP x An 64)	5134	89	127	10MS	95
22	05	Inia 66 x 23584	4702	83	127	0	75

TABLE 12 MESOAMERICA ESYT-2 1969-70

Location by Country: MEXICO State: Sonora Station: CIANO (Cd. Obregon) Elevation: + 40 meters Latitude: 27°20'N Longitude: 109°54'W.

Cooperators' Names: CIMMYT Wheat Staff Date Planted: November 18, 1969 Date Harvested: Not Stated

No. of Irrigations: 6 No. of Days with Rains: Trace at beginning Total Amount of Moisture: Total Amount Fertilizer in kg/ha: 120 N 35.2 P O K

Comments: Dry Season, Good stem and leaf rust development.

Scoring notes taken: Leaf firing = 0 (good) - 5. The first number is for flag leaf and second number is for the lower leaves. Height is designated on a scale from E₁ (tall) to E₃ (dwarfed), with superscripts + and - representing greater or lesser dwarfing, respectively.

Rank	Entry No.	Variety or Cross	Yield Kg/ha	Days to Flowering	Leaf rust	Stem rust	Height cm	Lodging %	Shattering	Leaf Firing
1	20	Bluebird 4	7694	88	0	0	E ₂ ⁺	0	0	0-1
2	14	Siete Cerros	7522	83	5S	30S	E ₁	80	1/	0-1
3	03	Inia 66	7391	76	70S	5MR	E ₁ -	90	1/	1-2
4	21	Bluebird 1	7355	81	Tr. R	10MS	E ₂ ⁺	20	0	0-2
5	25	23584 x Inia 66	7344	77	Tr. MR	5R	E ₂	5	0	2-4
6	02	((Son 64 x (Y50E)5) x Gto) x Inia	7287	80	0	Tr. R	E ₂	70	1	0-1
7	16	Cno x No 66	7250	78	0	Tr. R	E ₁ ⁺	70	1	2-3
8	07	Inia 66-23584	7011	68	Tr. MR	20MR	E ₁	80	1	2-2
9	23	Cno "S" x (Inia "S") 2	6933	88	Tr. MR/MS	Tr. R	E ₁	10	Tr.	0-2
10	01	Sonora 64	6854	68	Tr. S	5R	E ₂ ⁻	60	1/	3-4
11	12	((LR64 x Son 64) x Napo) x Cno	6797	76	Tr. MS	Tr. R	E ₂	60	1/	1-2
12	08	23584 x Inia 66	6787	77	0	10MS	E ₁	90	1	2-3
13	09	Penjamo 62	6750	80	Tr. MR	40S	E ₁	100	1/	1-2
14	11	((Son 64 x Y50E) x Gto) x Cno	6724	73	0	10S	E ₂ ⁻	70	1/	3-4
15	05	Inia 66 x 23584	6689	69	20S	5R	E ₃	0	1/	3-3
16	04	(Son 64 x Kl. Rend) x (Cno "S" x (LR64) 2) x Son 64	6495	72	Tr. R	10MR	E ₁	80	1/	2-3
17	18	((Kl. Rend x (Son 64) 2) Inia) x Cno	6443	74	Tr. R	10MR	E ₂	60	Tr.	1-3
18	17	Ciano 67	6156	70	Tr. MR	20MS	E ₂	90	1/	3-5
19	15	Tob 66 x Cno "S"	6020	72	Tr. R	Tr. R	E ₂	20	1/	2-4
20	06	Tobari 66	6010	78	0	10MR	E ₁	90	1/	2-4
21	19	Cno x Pj 62	5974	73	0	30S 1	E ₂	70	1/	1-4
22	13	Tob 66 x Cno "S"	5906	71	0	5R	E ₂	5	1	4-5
23	22	((Son 64 x TzPP) x Y54) x ((Son 64 x Y50E) x Gto)	5885	79	Tr. R	Tr. R	E ₁	100	Tr.	1-4
24	24	((Cno x El Gau) x Son 64) (TzPP x An 64)	5885	78	Tr. R	10MR	E ₂ ⁻	80	1	2-3
25	10	(Cno) 2 x Chris	5874	74	Tr. R	Tr. R	E ₂	80	1	3-5

Overall mean yields for the varieties for the First International Elite Selection Yield Trial-2 (at the 12 reporting locations).

TABLE 13

ESYT-2

1969-70

Overall mean yields for the varieties for the First International Elite Selection Yield Trial-2 (at the 12 reporting locations).

Rank	Entry No.	Variety or Cross	Yield Kg/Ha
1	03	Inia 66	4485
2	20	Bluebird 4	4453
3	16	Cno x No 66	4343
4	09	Penjamo 62	4335
5	23	Cno "S" x (Inia "S") 2	4284
6	21	Bluebird 1	4268
7	07	Inia 66-23584	4263
8	14	Siete Cerros	4125
9	04	(Son64 x Kl. Rend.)(Cno "S" x (LR 64)2) x Son64	4117
10	11	((Son64 x Y50E) x Gto) x Cno	4117
11	02	((Son64 x (Y50E)5) x Gto) x Inia	4011
12	22	((Son64 x TzPP) x Y54) x ((Son64 x Y50 E) x Gto)	3985
13	17	Ciano 67	3937
14	10	(Cno) 2 x Chris	3933
15	01	Sonora 64	3882
16	06	Tobari 66	3877
17	15	Tob 66 x Cno "S"	3762
18	19	Cno x Pj 62	3756
19	18	((K. Rend. x (Son64)2) x Inia) x Cno	3740
20	05	Inia 66 x 23584	3712
21	13	Tob 66 x Cno "S"	3697
22	25	23584 x Inia 66	3659
23	12	((LR64 x Son64) x Napo) x Cno	3638
24	24	((Cno x El Gau) x Son64) (TzPP x An 64)	3606
25	08	23584 x Inia 66	3542

