

Onion Hybrid Performance Trial, 2002

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Methods: The study was conducted at the NDSU Carrington Research Extension Center on a loam soil with a 7.8 pH and 3.2% organic matter. The pelleted and raw seed was planted with a Monosem vacuum planter on May 3, 2002 into 4-inch paired rows on 18-inch centers at 160,000 seeds/A. The sets were planted by hand on May 4, 2002 into 12-inch rows at 130,000 bulbs per acre. Individual plots were 3 feet by 20 feet, with 2 paired rows per plot for the seed and 3 rows per plot for the sets. The experimental design was a randomized complete block with three replicates. Best management practices were used for fertility, weed, disease, and insect control. Plots were pulled 10 to 14 days after the half-down date. The onions were topped and cured in a forced air drier. All hybrids were pulled by October 10, 2002. The onions were graded October 16-17. Split and diseased bulbs were graded as culls regardless of diameter. Analysis of variance was used to analyze data with Fisher's protected LSD test ($p > 0.05$) for treatment means separation.

Results: From May 16-19 and May 24, minimum air temperatures were 23-27 F° causing the ground to freeze to a depth of 2 inches at times. This delayed onion emergence and reduced the plant population. The entire trial had some degree of pink root and basal plate rot. The diseases were worse in the sets, causing the plants to mature early. For the sets, the hybrid Flintstone was not harvested. For Flintstone, one-half of the tops were down 71 days after planting and the bulbs were less than 1 inch in size (data not shown). Onion yields ranged from 83 to 414 cwt/A (Table). DPSX 1171, Tequila, DPSX 1172, Infinity, and Varsity were the top yielding onion hybrids. Tequila, Super Chief, DPSX 1171, Mesquite, and Rancho had the highest yields for bulbs greater than 3 inches in size. All varieties tested had less than 50% single centers with the exception of SR7000ON, which had 70% single centers. The hybrids Dayton, Frosty, and Kodiak did not mature by October 10.

Table. Onion maturity, yield, and grade. Carrington, ND, 2002

	Seed	Appl ^a	Days to 1/2 down	Yield						# of bulbs	Single Centers
	Source	Code		<2.25"	2.25-3"	3-4"	>4"	Total	culls		
cwt/A										1000s/A	%
6876	SM	PS	134	36.9	73.8	61.1	0.0	171.8	28.4	69	10
BGS 142	BE	PS	141	22.4	129.5	52.0	0.0	203.9	7.3	71	7
Brahma	SS	RS	132	79.3	199.6	23.0	0.0	301.9	20.0	118	23
Caballero	SM	PS	133	56.9	63.5	9.7	0.0	130.1	16.9	75	7
Condor	AT	PS	133	48.4	150.6	35.7	0.0	234.7	22.4	100	3
Copra	BE	PS	134	49.0	56.9	0.0	0.0	105.9	10.3	55	7
Dayton	BE	PS	>144	8.5	127.1	60.5	0.0	196.0	20.0	69	10
DPSX 1170	DP	RS	132	74.4	53.8	3.0	0.0	131.3	3.6	88	3
DPSX 1171	DP	RS	140	46.6	219.6	141.6	6.7	414.4	27.8	125	20
DPSX 1172	DP	RS	143	84.7	216.6	87.1	0.0	388.4	24.8	145	23
Expression	BE	PS	141	29.6	130.1	55.1	0.0	214.8	14.5	79	10
Frosty	DP	RS	>144	29.0	172.4	56.3	0.0	257.7	4.8	81	17
Granero	SS	RS	135	46.0	197.2	58.1	0.0	301.3	24.8	106	23
Gunnison	BE	RS	136	36.3	118.0	27.2	0.0	181.5	17.5	76	13
Infinity	SS	RS	132	72.0	242.6	29.6	0.0	344.2	38.7	129	30
Kodiak	DP	RS	>144	28.4	130.7	95.6	0.0	254.7	9.7	78	13
Lorenzos	VL	PS	135	19.4	92.6	14.5	0.0	126.4	6.7	52	0
Mesquite	DP	RS	144	11.5	139.2	138.5	0.0	289.2	18.8	75	20
NiZ 37-32	VL	PS	141	35.8	52.9	0.0	0.0	88.7	15.4	55	0
Prince	BE	PS	138	33.3	150.6	16.9	0.0	200.9	10.3	74	7
Ranchero	SS	RS	140	23.0	154.9	130.7	6.0	314.6	4.8	87	33
RCS 4391	SS	RS	138	65.3	92.0	9.1	0.0	166.4	4.2	73	7
RCX 4101-L	SS	RS	134	36.9	121.0	16.3	0.0	174.2	57.5	91	30
RCX 4111	SS	RS	138	48.4	170.6	46.6	0.0	265.6	47.8	111	10
RCX 4129-L	SS	RS	140	85.9	126.4	3.0	0.0	215.4	7.9	103	7
RCX 4156	SS	RS	140	29.0	126.4	15.7	0.0	171.2	0.6	61	3
RCX 60539	SS	RS	133	27.8	145.2	46.0	0.0	219.0	26.0	74	3
Red Barron	DVG	SETS	96	82.3	43.0	0.0	0.0	125.2	64.1	123	43
Ricochet	SM	PS	133	55.1	59.9	9.7	0.0	124.6	13.9	64	13
Sabroso	SS	RS	134	33.9	94.4	21.8	0.0	150.0	14.5	65	47
Seahawk	SM	PS	137	53.8	151.9	33.3	0.0	239.0	12.1	89	7
Setton	DVG	SETS	79	115.6	71.4	3.6	0.0	190.6	33.3	127	33
SR7000ON	SS	RS	133	73.2	127.0	9.1	0.0	209.3	16.3	106	70
SR7002ON	SS	RS	133	51.4	190.6	41.7	0.0	283.7	69.6	129	37
Staccato	VL	RS	130	55.1	28.4	0.0	0.0	83.5	6.7	76	33
Sturon	DVG	SETS	94	88.3	78.0	3.0	0.0	169.4	39.3	126	0
Super Chief	SM	PS	143	17.5	107.1	153.1	0.0	277.7	30.3	81	7
SWO 7074	SW	PS	139	21.8	70.8	105.3	0.0	197.8	15.7	62	10
SWO 7391	SW	PS	137	39.9	142.8	33.9	0.0	216.6	23.6	80	23
SWO 7761	SW	PS	137	23.6	121.0	45.4	0.0	190.0	13.3	61	13
T-439	AT	PS	136	30.3	119.8	16.9	0.0	167.0	30.9	66	3
T-441	AT	PS	133	46.6	110.7	10.9	0.0	168.2	25.4	84	27
Tamara	BE	PS	135	26.6	130.7	20.0	0.0	177.3	12.1	68	30
Tequila	DP	RS	142	22.4	186.9	183.9	0.0	393.3	22.4	111	23
Tesoro	SS	RS	131	32.7	176.1	54.4	0.0	263.2	58.7	100	7
Teton	SM	PS	138	12.1	126.4	99.2	0.0	237.8	15.1	65	17
Tioga	SM	PS	137	18.2	96.8	68.4	0.0	183.3	52.0	70	37
Vaquero	SS	RS	138	16.3	152.5	57.5	0.0	226.3	30.3	73	30
Varsity	SW	PS	137	33.9	210.5	76.2	0.0	320.6	21.8	102	23
Winston	BE	PS	136	56.3	102.2	12.1	0.0	170.6	5.4	82	27
LSD (P=.05)			6	27.0	60.0	53.8	3.6	77.3	26.2	24.5	25.2

^aRS=raw seed, PS=pelleted seed.