Oakes Irrigation Research Site

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Onion Hybrid Performance Trial

L. Besemann and H. Eslinger

Onions have done well under irrigation in North Dakota. Yellow sweet Spanish is the predominate type grown. This study tested 10 sweet Spanish hybrids.

MATERIALS AND METHODS

Soil:	Embden sandy loam and Maddock sandy loam; pH = 7.2; 1.4% organic matter; soil N 27 lbs/acre; soil P and soil K were very high; soil S was low.
Previous crop:	2013 – wheat.
Seedbed preparation:	Spring conventional tillage.
Planting:	Direct seeded onions (285,000 seeds/acre) April 25 with a Monosem precision planter. Onions were planted: 2 lines per row with 2.5 inches between lines. The rows were on 16-inch centers.
Plots:	Plots were 3 ft (two rows) wide by 17 ft long. The study had four replications.
Fertilizer:	Broadcast 25 lbs N/acre, 44 lbs P_2O_5/acre, 47 lbs K_2O/acre and 19 lbs S/acre as 10-18-19-8 April 21. Stream bar 30 lbs N/acre June 10, June 24, July 7 and July 14 as 28-0-0.
Irrigation:	Overhead sprinkler irrigation as needed.
Pest control:	Moxy 2E (4 oz/acre) + Goal Tender (1 oz/acre) May 27, Section 2EC (4 oz/acre) + COC (1 pt/acre) May 27, Moxy 2E (1.5 pt/acre) + Goal Tender (8 oz/acre) June 4, Section 2EC (8 oz/acre) + COC (1 pt/acre) July 9, Section 2EC (12 oz/acre) + COC (1 pt/acre) July 28 and hand weeding for weed control. Quadris Opti (3 pt/acre) August 22, Ridomil 72MZ (2.5 lb/acre) August 29 and September 5 for disease control.
Harvest:	Pulled all onions September 23 and left to field dry/cure. Onions were topped and bagged September 29. Onions were graded October 27 to October 30.

RESULTS

SV6672NW and Sedona had the highest yield overall and in the 3 to 4 inch range. Hamilton and SV6646NW had the highest yield of onions greater than four inches. Total yields ranged from 599 cwt/acre to 986 cwt/acre with a mean of 741 cwt/acre.

Table 1. Onion hybrid performance trial at the Oakes Irrigation Research Site in 2014.

Hybrid	Seed Source	Maturity[1] Days	Half down	>4"	3 to 4"	2¼ to 3"	1 to 2¼"	Total	Culls	Single Center	Total Bulbs
				----------cwt----------						%	/ac
Calibra	Bejo	115	6-Sep	78	370	124	27	599	60	70	118918
Crockett	Bejo	118	8-Sep	25	534	208	23	790	31	80	156876
Delgado	Bejo	115	4-Sep	33	486	157	35	710	37	75	141741
Gunnison	Bejo	110	27-Aug	33	381	228	40	681	10	90	155915
Hamilton	Bejo	118	8-Sep	142	525	111	12	789	18	85	126125
Patterson	Bejo	105	3-Sep	35	343	217	42	637	10	90	146305
Sedona	Bejo	118	7-Sep	70	569	150	20	808	9	90	134774
SV6646NW	Seminis	120	11-Sep	101	416	123	22	661	31	90	117236
SV6672NW	Seminis	116	6-Sep	69	630	261	25	986	7	100	185224
XP 07716000	Seminis	118	11-Sep	63	500	156	27	746	9	100	135734
Mean			6-Sep	65	475	174	27	741	22	87	141885
C.V.%			1.5	60.9	17.1	24.6	38.5	11.4	74.3	15.8	11.6
LSD 0.10			2.4	47	98	51	13	107	20	NS	19821
LSD 0.05			2.9	57	118	62	15	122	24	NS	23883

Planted April 25; pulled/harvested September 23; previous crop = wheat.

Fertilizer lbs/acre; 145 N, 44 P, 47 K, 19 S; Irrigation = 7.45 inches

[1]Maturity given by seed supplier.

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Other study

Onion weed control