

Table 1. Marketable, total and unmarketable yields of three commercial carrot varieties

Variety	Marketable yield (q/ha)				Total yield (q/ha)				Unmarketable yield(q/ha)			
	Debre Zeit	Kulumsa	Holeta	Mean	Debre Zeit	Kulumsa	Holota	Mean	Debre Zeit	Kulumsa	Holeta	Mean
Long beauty	74.17 b	302.50 b	177.92 b	184.86	371.67 b	494.17 b	604.38 a	490.07	297.50	191.67	426.46	305.21
Deep red	133.75 b	378.75 b	108.33 b	206.94	532.50 a	713.33 a	402.92 b	549.58	398.75	334.58	294.58	342.64
Nantes	257.50 a	522.92 a	269.38 a	349.93	592.08 a	675.00 a	326.67 c	531.25	334.58	152.08	57.29	181.32
Mean	155.14	401.39	185.21	247.24	498.75	627.50	444.66	523.63	343.61	226.11	259.44	276.39

Table 2. Plant height and root quality of of three commercial carrot varieties

Variety	Root length (cm)				Root diameter (cm)				Root core diameter (cm)				Root to core diameter ratio			
	Debre zeit	Kulumsa	Holeta	Mean	Debre zeit	Kulumsa	Holeta	Mean	Debre zeit	Kulumsa	Holeta	Mean	Debre zeit	Kulumsa	Holeta	Mean
Long beauty	14.93 b	24.18 a	16.95	18.69	2.93	3.70 b	4.06 a	2.93	1.23	1.74	2.87	1.95	2.40	1.44	1.44	1.76
Deep red	18.00 a	27.60 a	16.36	20.65	3.12	4.18 a	4.18 a	3.12	1.30	1.88	2.75	1.98	2.42	2.06	1.52	2.00
Nantes	13.50 b	19.23 b	15.12	15.95	3.27	3.75 b	3.20 b	3.27	1.38	1.72	2.25	1.78	2.36	2.53	1.42	2.10
Mean	15.48	23.67	16.14	18.43	3.11	3.88	3.81	3.11	1.30	1.78	2.62	1.90	2.39	2.01	1.46	1.95

Table 3. Plant height and bolting behavior of three commercial carrot varieties

Variety	Plant height (cm)				% of off type			bolting %			root to shoot ratio		
	Debre zeit	Kulumsa	Holeta	Mean	Debre zeit	Kulumsa	Mean	Debre zeit	Kulumsa	Mean	Debr e zeit	Kulu msa	Mean
Long beauty	74.04 a	86.46 a	120.33 a	93.61	10.44	3.04	6.74	20.42	14.43	17.43	0.78	1.44	1.11
MDeep red	75.50 a	76.03 b	119.83 a	90.45	12.41	2.00	7.21	4.32	3.58	3.95	0.69	2.06	1.37
Nantes	60.17 b	47.23 c	42.96 b	50.12	1.59	1.43	1.51	0.00	0.00	0.00	1.31	2.53	1.92
Mean	69.90	69.91	94.37	78.06	8.15	2.16	5.15	8.25	6.00	7.13	0.93	2.01	1.47

Table 4. Yield and root parameters of carrot varieties bolting behavior of three commercial carrot varieties

Treatment	Marketable yield (q/ha)	Unmarketa ble yield (q/ha)	total yield (q/ha)	Plant height (cm)	Root length (cm)	Root diameter (cm)	Root core diameter (cm)	Root to shoot ratio	Bolting %	Uniformity % off type	Root to core diameter ratio	Disease severity (%)
Nantes selection	277.50	114.16	391.67	48.00	17.17	3.02	1.73	0.73	0.00	19.69	1.75	5
DZARC 1	20.00	55.00	75.00	59.17	17.08	2.59	1.30	0.73	0.00	0.67	1.99	45
DZARC 2	25.00	46.25	71.25	56.33	18.33	2.60	1.63	0.57	0.00	0.00	1.60	45
DZARC3	31.25	80.00	111.25	56.67	15.33	2.51	1.65	0.69	0.66	0.00	1.52	45
DZARC 4	30.00	55.00	85.00	47.17	13.67	3.23	1.10	0.93	5.08	0.00	2.94	10
DZARC 5	60.00	155.00	215.00	75.25	18.58	3.25	1.80	0.44	0.00	24.15	1.81	10
DZARC 6	26.25	45.00	71.25	62.67	15.75	3.00	1.73	0.67	0.00	0.00	1.74	20
DZARC 7	10.00	70.00	80.00	55.67	13.00	2.89	1.23	1.25	0.95	0.00	2.36	10
DZARC 8	22.50	56.25	78.75	60.33	11.83	2.69	1.33	1.02	0.33	0.66	2.03	15
DZARC9	31.25	78.75	110.00	59.00	17.33	2.68	1.63	0.87	0.00	0.00	1.65	15
DZARC 10	23.75	56.25	80.00.	64.00	14.67	2.77	1.68	0.73	0.39	0.39	1.65	10