

Table (2): Plant height (cm) and number of green leaves /plant as affected by plant densities, nitrogen sources and nitrogen rates during 2016/2017 and 2017/2018 growing seasons.

Main effects and interactions	Plant height (cm)						Number of green leaves /plant					
	2016/2017			2017/2018			2016/2017			2017/2018		
	65 days	86 days	107 days	65 days	86 days	107 days	65 days	86 days	107 days	65 days	86 days	107 days
Plant densities (D)												
35000 plants / fed	52.1 c	62.7 c	107.0 c	60.2 c	63.9c	117.2 b	16.3b	43.1a	67.7 a	12.8 c	57.3 a	82.1 a
46600 plants / fed	55.3 b	71.0 b	111.8 b	64.0 b	79.2 b	126.4 a	14.6b	40.2a	65.0 a	14.0 b	56.2 a	75.6 b
70000 plants / fed	59.7 a	75.6 a	118.0 a	71.3 a	86.4 a	129.2 a	19.6a	31.5 b	57.1 b	16.2 a	42.4 b	62.1 c
F. test	**	**	**	**	**	*	*	*	*	*	*	**
Nitrogen sources (S)												
Ammonium sulphate	56.6	70.0	113.6a	64.2	75.2	119.2 c	15.7	34.9	62.9	13.9	52.2	66.6
Ammonium nitrate	53.3	67.4	107.4b	66.1	78.3	125.0 b	17.0	35.4	65.5	14.2	52.3	65.2
Urea	57.2	71.7	110.8a	65.2	76.2	129.0 a	17.8	44.1	61.3	14.9	50.6	63.6
F. test	N.S	N.S	*	N.S	N.S	*	N.S	N.S	N.S	N.S	N.S	N.S
Nitrogen rates (N)												
Zero kg N/fad	47.4 c	63.0 c	109.6c	53.8 b	60.2 d	113.0 d	12.6 d	29.2 d	46.9 d	11.6 b	38.6 d	61.8 c
30 kg N/fad	53.8 b	68.7 c	110.2c	59.8 c	72.1 b	118.2 c	14.7 c	32.4 c	53.9c	12.8 b	49.0 c	68.7 b
60 kg N/fad	59.0 a	70.5 b	115.4 b	70.7 b	87.3 a	129.0 b	16.9 b	43.0 b	71.6 b	15.2 a	54.2 b	69.2 b
90 kg N/fad	62.6 a	76.0 a	121.5 a	76.8 a	85.6 a	135.3 a	21.2 a	50.1 a	80.7 a	16.7 a	64.4 a	73.4 a
F. test	*	*	**	**	*	*	*	**	**	*	*	*
Interactions												
D x S	N.S	N.S	*	N.S	N.S	*	N.S	N.S	N.S	N.S	N.S	N.S
D x N	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S
S x N	N.S	N.S	N.S	N.S	N.S	N.S	*	N.S	N.S	*	N.S	N.S

Means having different letters in the same column, differ significantly (P<0.05).

NS= Not significant; * = (P<0.05); ** = (P<0.01).

Table (4) :Leaf area/plant (dm²)[§] and leaf area index (LAI) of safflower as affected by plant densities and nitrogen sources and nitrogen rates during 2016/2017 and 2017/2018 growing seasons.

Main effects and interactions	Leaf area/plant						leaf area index					
	2016/2017			2017/2018			2016/2017			2017/2018		
	65 days	86 days	107 days	65 days	86 days	107 days	65 days	86 days	107 days	65 days	86 days	107 days
Plant densities (D):												
35000 plants / fed	8.05 a	22.19 a	30.14 a	11.21 a	21.22 a	32.34 a	0.67 c	1.85 c	2.51 c	0.93 b	1.76 c	2.69 c
46600 plants / fed	7.21 a	21.12 a	27.15 a	8.63 b	18.42 b	28.62 b	0.80 b	2.34 b	3.01 b	0.90 b	2.04 b	3.18 b
70000 plants / fed	4.73 b	18.07 b	25.12 b	7.24 c	14.63 c	24.25 c	1.78 a	3.11 a	4.18 a	1.40 a	2.43 a	4.04 a
F. test	*	*	*	**	**	**	**	**	**	*	**	**
Nitrogen sources (S):												
Ammonium sulphate	6.27	20.00	29.96	8.61	19.87	30.30	1.71	2.33	3.32	1.56	2.63	3.24
Ammonium nitrate	6.42	20.10	26.14	8.40	18.70	28.40	1.74	2.35	3.37	1.72	2.64	3.40
Urea	7.31	21.09	24.27	9.21	19.00	27.62	1.84	2.52	3.55	1.76	2.93	3.96
F. test	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S
Nitrogen rates (N):												
Zero kg N/fad	5.24b	13.75d	23.81d	6.20 c	11.30 d	24.1 c	0.87 d	1.29 d	2.30 c	1.02	1.90 d	3.73 c
30 kg N/fad	6.98a	18.39c	28.42c	8.13 b	16.70 c	30.6 b	1.49 c	2.07 c	3.08 b	1.11	2.67 c	4.12 b
60 kg N/fad	6.95a	21.86b	33.31b	9.14 a	21.10 b	32.3 a	1.75 b	2.97 b	3.89 b	1.20	2.93 b	4.66 a
90 kg N/fad	7.57a	26.35a	36.24a	10.46 a	24.42 a	34.3 a	2.96 a	3.39 a	4.40 a	1.40	3.46 a	4.76 a
F. test	**	**	**	*	**	**	**	**	**	N.S	**	*
Interactions												
D x S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	*	N.S	N.S
D x N	N.S	*	N.S	N.S	*	N.S	N.S	N.S	N.S	N.S	N.S	N.S
S x N	N.S	N.S	N.S	-	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S

Means having different letters in the same column, differ significantly (P<0.05).

NS= Not significant; * = (P<0.05); ** = (P<0.01). § 1 dm² = 100cm²

Table (3):Number of branches/plant and dry weight/plant (gm) as influenced by plant densities, nitrogen sources and nitrogen rates during 2016/2017 and 2017/2018 growing season.

Main effects and interactions	Number of branches						dry weight/plant (gm)					
	2016/2017			2017/2018			2016/2017			2017/2018		
	65 days	86 days	107 days	65 days	86 days	107 days	65 days	86 days	107 days	65 days	86 days	107 days
Plant densities (D)												
35000 plants / fed	9.60a	18.10 a	32.40 a	10.20 a	19.00 a	36.20 a	11.30a	24.30a	46.60a	10.10a	23.40a	49.30a
46600 plants / fed	8.22b	16.35 b	26.33 b	9.10 a	17.20 b	31.10 b	9.20b	21.62b	42.20 b	8.90b	20.20b	44.10 b
70000 plants / fed	5.42c	13.42 c	19.42 c	6.40 b	14.10 c	20.40 c	7.90c	17.40c	36.30c	8.10b	18.60c	35.60c
F. test	**	**	**	**	**	**	**	**	**	*	**	**
Nitrogen sources (S)												
Ammonium Sulphate	7.10	14.90	24.40	7.40	16.10	29.20	10.11	21.30b	40.71	9.20	19.40	43.30
Ammonium nitrate	8.12	16.10	27.00	8.90	15.90	28.40	9.20	23.10a	42.86	8.70	20.22	41.90
Urea	8.43	16.81	27.19	9.10	18.70	29.60	8.70	23.90a	42.40	9.10	22.40	44.70
F. test	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S
No fertilization levels(N)												
Zero kg N/fad	4.21 d	10.11 d	15.30 d	5.40 d	13.40 d	25.30c	6.70b	12.34c	33.40	7.90d	13.90d	33.4 d
30 kg N/fad	5.30 c	13.24 c	20.00 c	6.39 c	16.20 c	26.90c	8.40b	20.66c	38.20	8.80c	19.80c	41.60c
60 kg N/fad	8.40 b	18.90 b	25.40 b	9.90 b	16.40 b	31.70b	11.21a	24.20b	43.40	10.22b	21.22b	48.4 b
90 kg N/fad	11.21a	21.42a	29.62a	12.40a	20.10a	33.20a	12.12a	28.40a	47.21	12.40a	26.40a	52.10a
F. test	*	*	**	**	*	*	*	**	**	*	*	*
Interactions												
D x S	N.S	N.S	N.S	N.S	N.S	N.S	*	N.S	N.S	N.S	N.S	N.S
D x N	*	N.S	N.S	*	N.S	N.S	N.S	N.S	N.S	N.S	*	N.S
S x N	N.S	N.S	N.S	-	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S

Means having different letters in the same column, differ significantly (P<0.05).

NS= Not significant; * = (P<0.05); ** = (P<0.01).

