

Table(1): Average day and night temperature (°C) and Relative Humidity (R.H) prevailed during the Experimental period in and Autumn seasons in 2004 and 2005.

Season	2004						2005					
Experimental period	H. Temp.	L. Temp.	Aver. Day Temp.	Aver. Night Temp.	Aver. High R.H	Aver. Low R.H	H. Temp.	L. Temp.	Aver. Day Temp.	Aver. Night Temp.	Aver. High R.H	Aver. Low R.H
Aug.	41.6	19.8	36.9	27.2	70	31	41.4	12	37.5	22.8	73	31
Sept.	40.6	16.8	35.6	19.5	72	29	38.4	12.8	35.4	17.6	75	30
Oct.	37.4	16.2	34.1	17.1	72	28	36.4	15.7	32.8	18.8	79	28
Nov.	35.4	5.6	28.7	11.8	81	35	33.6	7	26.3	9.5	82	34
Dec.	25.8	4.6	21.5	6.6	90	39	32.7	5.6	22	8.4	92	43

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Table(2): Maturity date (days) in three cultivars of common bean as affected by plant spacing and sowing date during the autumn planting of 2004 and 2005 seasons.

Cultivar, (A)	Plant Spac., (cm) (B)	Sowing date, (C) 2004 season				Sowing date,(C) 2005 season			
		Aug., 25	Sept, 15	Oct.,10	Mean	Aug.,28	Sept.,18	Oct.,15	Mean
Giza 6	10	119.00* (10.90)**	109.33 (10.46)	0 (0.71)	76.11 (7.36)	114.00 (10.65)	104.33 (10.22)	0 (0.71)	72.78 (7.19)
	20	117.33 (10.85)	105.33 (10.29)	0 (0.71)	74.22 (7.25)	112.33 (10.60)	104.33 (10.20)	0 (0.71)	72.22 (7.17)
	30	117.33 (10.80)	104.67 (10.25)	0 (0.71)	74.00 (7.25)	109.67 (10.48)	101.67 (10.05)	0 (0.71)	70.45 (7.08)
Mean		117.89 (10.85)	106.44 (10.33)	0 (0.71)	74.78 (7.30)	112.00 (10.58)	103.44 (10.16)	0 (0.71)	71.82 (7.15)
Swiss Blanc	10	114.67 (10.68)	106.00 (10.32)	0 (0.71)	73.56 (7.24)	112.33 (10.58)	104.33 (10.25)	0 (0.71)	72.22 (7.18)
	20	113.67 (10.66)	108.00 (10.42)	0 (0.71)	73.33 (7.26)	110.33 (10.50)	103.67 (10.20)	0 (0.71)	71.33 (7.13)
	30	112.67 (10.58)	107.33 (10.34)	0 (0.71)	73.33 (7.21)	109.67 (10.50)	102.33 (10.17)	0 (0.71)	70.67 (7.13)
Mean		113.67 (10.64)	107.11 (10.36)	0 (0.71)	73.59 (7.24)	110.78 (10.53)	103.44 (10.21)	0 (0.71)	71.40 (7.15)

Table(2): continue

Cultivar, (A)	Plant Spac., (cm) (B)	Sowing date, (C) 2004 season				Sowing date,(C) 2005 season			
		Aug., 25	Sept, 15	Oct.,10	Mean	Aug.,28	Sept.,18	Oct.,15	Mean
Nebraska	10	112.33 (10.60)	97.67 (9.88)	0 (0.71)	70.22 (7.06)	110.33 (10.50)	99.00 (10.00)	0 (0.71)	69.78 (7.07)
	20	112.00 (10.90)	98.00 (9.90)	0 (0.71)	70.00 (7.17)	111.67 (10.58)	97.00 (9.90)	0 (0.71)	70.22 (7.06)
	30	111.33 (10.54)	97.67 (9.89)	0 (0.71)	97.67 (7.05)	112.33 (10.63)	97.67 (9.90)	0 (0.71)	70.00 (9.08)
Mean		111.89 (10.68)	97.78 (9.89)	0 (0.71)	69.67 (7.09)	111.59 (10.57)	97.89 (9.93)	0 (0.71)	70.00 (7.07)
B X C	10	115.33 (10.73)	104.33 (10.22)	0 (0.71)	73.22 (7.22)	112.22 (10.58)	102.55 (10.16)	0 (0.71)	71.59 (7.15)
	20	114.33 (10.80)	103.78 (10.20)	0 (0.71)	72.70 (7.24)	111.44 (10.56)	101.67 (10.10)	0 (0.71)	71.04 (7.12)
	30	113.78 (10.64)	103.22 (10.17)	0 (0.71)	72.33 (7.17)	110.56 (10.54)	100.56 (10.04)	0 (0.71)	73.70 (7.10)
Mean		114.48 (10.72)	103.78 (10.20)	0 (0.71)		111.41 (10.56)	101.59 (10.10)	0 (0.71)	
L.S.D 0.05		A = 0.49 AB = 0.62 AC = 0.74	B = 1.00 BC = N.S ABC =0.50	C = 1.28		A = N.S AB = 2.13 AC = N.S	B = N.S BC = N.S ABC = N.S	C = 3.02	

*, ** Original (upper) and transformed (down) data ,respectively

Table(3): Percentages of final plant stand in three cultivars of common bean as affected by plant spacing and sowing date during the autumn planting of 2004 and 2005 seasons.

Cultivar, (A)	Plant Spac., (cm)(B)	Sowing date, (C) 2004 season				Sowing date,(C) 2005 season			
		Aug., 25	Sept.,15	Oct.,10	Mean	Aug.,28	Sept.,18	Oct.,15	Mean
Giza 6	10	66.34* **(54.80)	82.33 (65.40)	86.44 (68.40)	78.37 (62.86)	56.04 (48.46)	74.73 (59.82)	84.67 (67.04)	71.81 (58.44)
	20	75.12 (60.65)	82.82 (66.15)	85.33 (67.68)	81.09 (64.83)	62.43 (52.22)	69.21 (57.37)	80.44 (63.76)	70.69 (57.78)
	30	73.72 (59.33)	86.26 (68.11)	80.89 (64.07)	80.29 (63.84)	42.70 (40.80)	57.17 (49.12)	81.84 (64.81)	60.57 (51.58)
Mean		71.73 (58.26)	80.47 (66.55)	84.22 (66.72)	78.81 (63.84)	53.72 (47.16)	67.04 (55.44)	82.32 (71.04)	67.69 (57.88)
Swiss	10	58.17 (49.49)	76.19 (60.80)	87.00 (68.90)	73.79 (59.73)	74.68 (59.87)	73.54 (59.09)	76.78 (61.19)	75.00 (60.05)
Blanc	20	65.25 (56.11)	84.24 (66.65)	85.44 (67.54)	78.31 (63.43)	66.58 (54.71)	72.90 (58.86)	78.56 (62.63)	72.68 (58.73)
	30	68.71 (56.29)	76.06 (60.80)	81.00 (64.17)	75.26 (60.42)	65.28 (54.04)	71.57 (58.03)	80.98 (64.35)	72.61 (58.81)
Mean		64.04 (53.96)	78.83 (62.75)	84.48 (66.87)	75.79 (61.19)	68.85 (56.21)	72.67 (58.66)	78.77 (62.72)	73.43 (59.20)

Table(3): continue

Cultivar, (A)	Plant Spac., (cm)(B)	Sowing date, (C) 2004 season				Sowing date,(C) 2005 season			
		Aug., 25	Sept.,15	Oct.,10	Mean	Aug.,28	Sept.,18	Oct.,15	Mean
Nebraska	10	71.04 (57.48)	78.83 (62.33)	92.22 (73.97)	80.53 (64.57)	76.69 (61.17)	73.83 (59.23)	78.55 (62.41)	76.36 (60.94)
	20	68.49 (55.98)	75.45 (60.33)	84.89 (67.15)	76.28 (61.15)	75.13 (60.07)	62.12 (52.03)	87.89 (66.69)	75.05 (59.60)
	30	73.14 (58.79)	81.55 (64.66)	81.11 (64.25)	78.60 (62.57)	59.11 (51.87)	71.00 (57.78)	84.67 (66.96)	71.59 (58.87)
Mean		70.89 (57.42)	78.45 (62.44)	86.07 (68.44)	78.47 (62.77)	70.31 (57.70)	68.98 (56.35)	83.70 (65.35)	74.33 (59.80)
B X C	10	65.18 (53.92)	78.95 (62.84)	88.55 (70.42)	77.56 (62.39)	69.14 (56.50)	74.03 (59.38)	80.00 (63.55)	74.39 (59.81)
	20	69.62 (57.58)	81.98 (64.38)	85.22 (67.46)	78.94 (63.14)	68.05 (55.67)	68.08 (56.09)	82.30 (64.33)	72.81 (58.70)
	30	71.86 (58.14)	81.29 (64.52)	81.00 (64.16)	78.05 (62.27)	55.70 (48.90)	66.58 (54.98)	82.50 (65.37)	68.26 (56.42)
Mean		68.89 (56.55)	80.74 (63.91)	84.92 (67.35)		64.30 (53.69)	69.56 (56.82)	81.60 (64.42)	
L.S.D 0.05		A = 2.65 AB = N.S AC = N.S	B = N.S BC= 2.17 ABC = N.S	C =5.45		A = 2.42 AB = N.S AC = N.S	B = N.S BC =3.70 ABC =2.57	C = 6.05	

*, ** Original (upper) and transformed (down) data ,respectively

Table (4): Number of pods/plant for three cultivars of common bean as affected by plant spacing and sowing date during the autumn planting of 2004 and 2005 seasons.

Cultivar (A)	Plant Spac. (cm) (B)	Sowing date, (C) 2004 season				Sowing date,(C)2005 season			
		Aug.,25	Sept.,15	Oct.,10	Mean	Aug.,28	Sept.,18	Oct.,15	Mean
Giza 6	10 cm	4.89* **(2.72)	6.00 (2.86)	0.5 (0.71)	3.80 (2.10)	3.67 (2.04)	6.51 (2.64)	0.5 (0.71)	3.56 (1.80)
	20 cm	5.04 (2.74)	6.57 (3.30)	0.5 (0.71)	4.04 (2.25)	3.75 (2.05)	3.94 (2.10)	0.5 (0.71)	2.73 (1.62)
	30 cm	9.36 (3.14)	8.92 (3.06)	0.5 (0.71)	6.26 (2.30)	4.27 (2.18)	7.09 (2.07)	0.5 (0.71)	3.95 (1.66)
Mean		6.43 (2.87)	7.16 (3.07)	0.5 (0.71)	4.70 (2.22)	3.90 (2.09)	5.85 (2.27)	0.5 (0.71)	3.42 (1.69)
Swiss Blanc	10 cm	4.82 (4.57)	10.61 (3.33)	0.5 (0.71)	5.31 (2.11)	3.50 (2.00)	3.99 (2.12)	0.5 (0.71)	2.66 (1.61)
	20 cm	4.57 (2.25)	7.41 (2.76)	0.5 (0.71)	4.16 (1.91)	4.70 (2.26)	6.69 (2.67)	0.5 (0.71)	3.96 (1.88)
	30 cm	3.08 (1.89)	7.07 (2.75)	0.5 (0.71)	3.55 (1.78)	4.40 (2.21)	8.98 (3.07)	0.5 (0.71)	4.63 (1.99)
Mean		4.16 (2.14)	8.36 (2.95)	0.5 (0.71)	4.34 (1.93)	4.20 (2.16)	6.55 (2.62)	0.5 (0.71)	3.75 (1.83)

Table (4): continue.

Cultivar (A)	Plant Spac. (cm) (B)	Sowing date, (C) 2004 season				Sowing date,(C)2005 season			
		Aug.,25	Sept.,15	Oct.,10	Mean	Aug.,28	Sept.,18	Oct.,15	Mean
Nebraska	10 cm	5.44 (2.42)	7.73 (2.87)	0.5 (0.71)	4.56 (2.00)	3.99 (2.11)	6.29 (2.61)	0.5 (0.71)	3.59 (1.77)
	20 cm	6.90 (2.71)	10.15 (3.26)	0.5 (0.71)	5.85 (2.23)	5.99 (2.54)	6.99 (2.72)	0.5 (0.71)	4.49 (1.99)
	30 cm	10.90 (3.37)	17.24 (4.20)	0.5 (0.71)	9.55 (2.70)	11.25 (3.43)	11.68 (3.49)	0.5 (0.71)	7.81 (2.54)
Mean		7.75 (2.83)	11.71 (3.44)	0.5 (0.71)	6.57 (2.33)	7.08 (3.84)	8.32 (2.94)	0.5 (0.71)	5.30 (2.10)
B x C	10 cm	5.05 (2.48)	8.11 (3.02)	0.5 (0.71)	4.55 (2.07)	3.72 (2.05)	5.60 (2.46)	0.5 (0.71)	3.27 (1.74)
	20 cm	5.50 (2.57)	8.04 (3.11)	0.5 (0.71)	4.68 (2.13)	4.81 (2.18)	5.87 (2.42)	0.5 (0.71)	3.73 (1.78)
	30 cm	7.78 (2.80)	11.08 (3.34)	0.5 (0.71)	6.45 (2.28)	6.64 (2.61)	9.25 (2.88)	0.5 (0.71)	5.46 (2.07)
Mean		6.11 (2.62)	9.08 (3.16)	0.5 (0.71)		5.06 (2.31)	6.91 (2.61)	0.5 (0.71)	
L.S.D 0.05		A = 0.40 AB = 0.16 AC = 0.22	B =N.S BC = 0.19 ABC = 0.14	C = 0.35		A = 0.18 AB = N.S AC = 0.21	B = N.S BC = 0.22 ABC =0.12	C = 0.24	

*, ** Original (upper) and transformed (down) data ,respectively

Table(5): Seed yield/plant (g) in three cultivars of common bean as affected by plant spacing and sowing date during the autumn planting of 2004 and 2005 seasons.

Cultivar, (A)	Plant Spac., (cm) (B)	Sowing date, (C) 2004 season				Sowing date,(C) 2005 season			
		Aug.,25	Sept.,15	Oct.,10	Mean	Aug., 28	Sept., 18	Oct.,15	Mean
Giza 6	10	*7.98 **(2.90)	8.33 (2.96)	0.50 (0.71)	5.44 (2.19)	4.47 (2.23)	7.68 (2.85)	0.50 (0.71)	4.05 (1.93)
	20	8.38 (2.97)	11.78 (3.50)	0.50 (0.71)	6.72 (2.39)	4.83 (2.31)	4.82 (2.30)	0.50 (0.71)	3.22 (1.77)
	30	11.52 (3.47)	9.42 (3.14)	0.50 (0.71)	6.98 (2.44)	5.20 (2.39)	7.63 (2.85)	0.50 (0.71)	4.28 (1.98)
Mean		9.29 (3.11)	9.84 (3.20)	0.50 (0.71)	6.38 (2.34)	4.83 (2.31)	6.71 (2.67)	0.50 (0.71)	3.85 (1.89)
Swiss Blanc	10	6.08 (2.56)	10.72 (3.35)	0.50 (0.71)	5.60 (2.21)	4.67 (2.27)	5.03 (2.35)	0.50 (0.71)	3.23 (1.78)
	20	5.65 (2.48)	8.85 (3.01)	0.50 (0.71)	4.83 (2.07)	6.47 (2.63)	7.63 (2.85)	0.50 (0.71)	4.70 (2.06)
	30	3.56 (2.01)	7.18 (2.77)	0.50 (0.71)	3.58 (1.83)	5.87 (2.52)	10.57 (3.32)	0.50 (0.71)	5.48 (2.18)
Mean		5.10 (2.35)	8.92 (3.04)	0.50 (0.71)	4.67 (2.03)	5.67 (2.47)	7.74 (2.84)	0.50 (0.71)	4.47 (2.01)

Table(5): cont.

Cultivar, (A)	Plant Spac., (cm) (B)	Sowing date, (C) 2004 season				Sowing date,(C) 2005 season			
		Aug.,25	Sept.,15	Oct.,10	Mean	Aug., 28	Sept., 18	Oct.,15	Mean
Nebraska	10	6.80 (2.68)	8.55 (3.01)	0.50 (0.71)	5.12 (2.13)	5.04 (2.36)	6.96 (2.73)	0.50 (0.71)	4.00 (1.93)
	20	8.20 (3.00)	10.94 (3.38)	0.50 (0.71)	6.38 (2.34)	7.82 (2.88)	8.48 (2.98)	0.50 (0.71)	5.43 (2.19)
	30	12.97 (3.66)	16.64 (4.13)	0.50 (0.71)	9.87 (2.83)	12.37 (3.59)	12.74 (3.64)	0.50 (0.71)	8.37 (2.65)
Mean		9.32 (3.11)	12.04 (3.51)	0.50 (0.71)	7.12 (2.44)	8.41 (2.99)	9.39 (3.12)	0.50 (0.71)	5.93 (2.26)
B X C	10	6.95 (2.71)	9.20 (3.11)	0.50 (0.71)	5.55 (2.18)	4.73 (2.29)	6.56 (2.64)	0.50 (0.71)	3.93 (1.88)
	20	7.41 (12.82)	10.52 (3.30)	0.50 (0.71)	6.14 (2.28)	6.37 (2.61)	6.98 (2.71)	0.50 (0.71)	4.62 (2.01)
	30	9.35 (3.05)	11.08 (3.35)	0.50 (0.71)	6.98 (2.37)	7.81 (2.83)	10.31 (3.27)	0.50 (0.71)	6.21 (2.27)
Mean		7.90 (2.86)	10.27 (3.25)	0.50 (0.71)		6.30 (2.58)	7.95 (2.74)	0.50 (0.71)	
L.S.D 0.05		A =0.37 B = N.S C = 0.37 AB = 0.16 BC = 0.28 AC = 0.26 ABC =0.15				A = 0.26 B = N.S C = 0.24 AB = N.S BC = 0.15 AC = 0.16 ABC = 0.10			

*, ** Original (upper) and transformed (down) data , respectively .

Table(6): Seed yield (kg/fed.) in three cultivars of common bean as affected by plant spacing and sowing date during the autumn planting of 2004 and 2005 seasons.

Cultivar., (A)	Plant Spac (cm)(B)	Sowing date, (C) 2004 season				Sowing date,(C) 2005 season			
		Aug., 25	Sept., 15	Oct., 10	<i>Mean</i>	Aug., 25	Sept., 18	Oct., 15	Mean
Giza 6	10	*294.65 **(17.18)	677.09 (25.88)	0.5 (0.71)	323.91 (14.59)	238.76 (15.46)	404.93 (20.18)	0.5 (0.71)	214.73 (12.12)
	20	434.27 (20.83)	674.80 (25.97)	0.5 (0.71)	369.69 (15.84)	241.31 (15.51)	189.70 (13.60)	0.5 (0.71)	143.84 (9.94)
	30	452.82 (21.24)	435.55 (20.83)	0.5 (0.71)	296.12 (14.26)	136.98 (11.72)	200.02 (14.14)	0.5 (0.71)	112.50 (8.86)
Mean		393.91)19.75(	595.81)24.22(	0.5 (0.71)	329.91 (14.90)	205.68)14.23(	264.88)15.97(	0.5 (0.71)	157.02)10.30(
Swiss blanc	10	353.43 (18.77)	689.25 (26.20)	0.5 (0.71)	347.56 (15.25)	274.13 (16.52)	253.08 (15.50)	0.5 (0.71)	175.74 (10.91)
	20	229.89 (16.92)	477.25 (21.66)	0.5 (0.71)	235.71 (13.10)	234.84 (15.12)	219.74 (14.82)	0.5 (0.71)	151.53 (10.21)
	30	127.32 (11.30)	296.97 (17.23)	0.5 (0.71)	141.43 (9.75)	122.82 (11.06)	293.81 (17.16)	0.5 (0.71)	138.88 (9.64)
Mean		236.88)15.66(	487.82)21.69(	0.5 (0.71)	241.57 (12.70)	210.60)14.23(	255.54)15.83(	0.5 (0.71)	155.38 (10.25)

Table(6): continue.

Cultivar., (A)	Plant Spac (cm)(B)	Sowing date, (C) 2004 season				Sowing date,(C) 2005 season			
		Aug., 25	Sept., 15	Oct., 10	<i>Mean</i>	Aug., 25	Sept., 18	Oct., 15	Mean
Nebraska	10	524.72 (22.60)	824.71 (28.67)	0.5 (0.71)	449.81 (17.33)	361.60 (19.01)	414.53 (20.30)	0.5 (0.71)	258.88 (13.34)
	20	407.98 (20.11)	672.49 (25.88)	0.5 (0.71)	360.16 (15.59)	316.01 (17.75)	356.75 18.12(	0.5 (0.71)	224.42)12.19(
	30	367.53 (18.95)	586.93 (24.18)	0.5 (0.71)	319.25 (17.82)	319.25 (17.82)	324.60 (17.97)	0.5 (0.71)	214.78 (12.17)
Mean		433.41)20.55(	694.68)26.24(	0.5 (0.71)	376.03 (15.84)	332.29)18.19(	365.29 18.80(	0.5 (0.71)	232.69)12.57(
B x C	10	390.93 (19.78)	730.35 (27.03)	0.5 (0.71)	373.76 (15.84)	291.50 (17.00)	357.51)18.66(	0.5 (0.71)	216.50 (14.30)
	20	357.38 (18.92)	608.18 (24.67)	0.5 (0.71)	321.85 (14.77)	264.05 (16.13)	255.40 15.51(	0.5 (0.71)	173.32)10.68(
	30	315.89 (17.79)	439.82 (20.98)	0.5 (0.71)	251.90 (13.16)	193.02 (13.53)	272.81)16.42(	0.5 (0.71)	155.44 (10.22)
Mean		354.73 (18.83)	592.78 (24.23)	0.5 (0.71)		249.52)15.55(	295.24 16.86(	0.5 (0.71)	
L.S.D 0.05		A =3.14 AB = 2.15 AC = 1.84	B =3.37 BC = 1.75 ABC = 0.88	C = 2.65		A = 1.37 AB = N.S AC =1.63	B = N.S BC = 1.5 ABC = 1.08	C = 2.35	

*, ** Original (upper) and transformed (down) data , respectively.