

**الملوثات البيئية و أثرها على بعض المؤشرات التشريحية والمظهرية لأوراق نبات القوغل
الدور**

Abstract

Under the environmental impure effect on (dicotyledones) there was some anatomical and indicational changes happened .such as upper and lower skin thickness, mezophilic , interior layeres , flute diameter , upper and lower skin cells number the hole number , length and width. In anatomical case . as in indicational case there was changes in leaf neck length and width , this appear that the plant has a god resistance against polluted substance in spite of it's influenced .

(1965) .

(1980) .

(1970) (1979 1980) (1977 1978)

(1985) (1984) (1987)

)

(1981)

(dicoty.ledones)

1995

(1972)

(1977)

(100)

(1998)

(%70)

: (1)

(1)

(2 1)

()

(2)

(1)

-5/2)

(8/20)

(11/7)

(6/96)

(7/8-3/9)

(4/94)

(5/92)

(193/8-107)

(149/6)

(150)

(74-48)

(51/9)

(60/1)

(40/8-28/1)

(36/4)

(34/1)

(1)

(2 1) (1595-770)

(949) (2 1) (1163)

. (2 1)

(2 1) (1815-990)

(2 1) (1359)

(2 1) (1352)

(2 1) (240-220)

(276) (2 1) (325)

(39-23/5) (2 1)

(30/91) (30/79)

(36/7-19/6)

(26/03)

(26/14)

. (2)

(1)

1/4	11/7	0/61 ± 8/20	5/2	1	
0/2	9/8	0/43±6/96	5/2	2	()
2/3	7/8	0/38±4/49	3/9	1	
0/6	7/2	0/30±5/92	4/6	2	()
50/8	193/8	0/53±149/6	127/5	1	
44/4	178/5	0/71±150/1	107/1	2	()
24/7	102	0/45±85/5	76/3	1	
27/1	96/9	0/63±80/0	61/2	2	()
24/2	40/8	0/34±36/4	28/1	1	
30/1	35/7	0/29±34/1	28/1	2	()

(2)

5/8	1595	16/9±1163	825	1	
2/9	1265	12/6±949	770	2	(2 1)
8/9	1815	13/1±1352	1155	1	
8/9	1760	14/7±1359	990	2	(2 1)
20/0	440	5/0±325	220	1	
14/1	385	4/7±276	165	2	(2 1)
11/7	39/0	0/34 ±30/97	24/7	1)
12/3	36/5	0/27±30/91	23/5	2	(
5/7	36/7	0/31±26/14	20/4	1)
6/6	33/2	0/25±26/03	19/6	2	(

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(18) () (20/4-13)
 (26-14) (17/7) ()
 (22,67)
 (16,6-6) (21,17)
 (9,22) (9,52)
 (9,4 - 4)
 (5/22) (6,06)

(3)

(3)

4/2	20/4	0/16±18/0	14/5	1	
4/5	21/3	0/24±17/7	13/0	2	
2/7	26/0	0/26±22/67	18/2	1	
4/7	26/2	0/34±21/17	14/0	2	
5/7	16/6	0/21±9/52	6/0	1	
7/3	11/3	0/14±9/22	6/0	2	
2/2	9/4	0/14 ± 6/06	4/2	1	
6/7	7/3	0/10 ± 5/22	4/0	2	

(())

1978 .

. 1984

. 1983

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. 1976 . .

1979 . .

. 13-2

. 1987

. 192-186

. (())

1978 .

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1985 .

. 280

. 1979 . .

1984 . .

1

1986

117-110