



**东北师范大学**

**长白山野外综合性实习研究课题**

2016 9 8

130024

2006 2007 2009

2003

G  
B 1964  
2001; 2002; 2004; 2006 1964 B  
1 1

B 1957 15 <sup>14</sup>C

C 2000 2002

2619

2009

2.1

2.2

2.2.1

5

5

;

2.2.2

20

2006 2007 2009

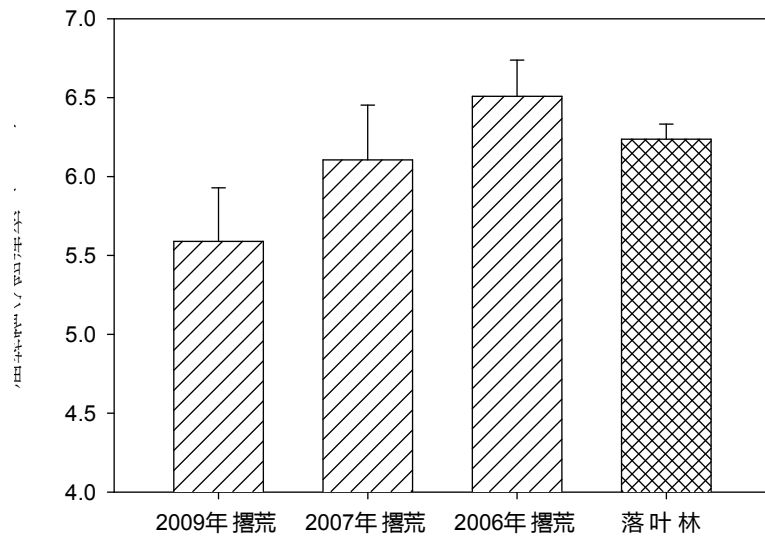
10

G

2012

2.2.3





2

4.

2009

2007

2006

2007

2006

2006

2007

2006

2002

1 . . . . . 1984 3 6  
124 132.

2 . . . . . 2001 28 2 35 38.  
3 . . . . . 2002 22 1  
86 89.

4 . . . . .  
2004 29 5 9 13.

5 . . . . .  
2006 19 3 331 336.

6 B J. G E. . . . . J. A E 1964 2  
101 157.

7 H H.J. F . . . . . K E A 1950. 22 22.  
8 C H H E G . E C  
. F E 2000 138 51 64.

9 B K. G J. . . . .  
1957 9 179 185.

10 . . . . . 2003 02  
140 145.

11 . . . . .  
J. . . . . 2009 02 292 299.

12 . . . . . 2009 06 1473 1478.  
13 . . . . . 2002 09 1534 1544.  
14 . . . . .  
2002 26 3 275 282

15 . . . . .  
2006 20 10 3286 3295

16 . . . . .  
2010 21 9 2209 2216.

17 . . . . .  
2012.

1

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	2-1	235.69	193.04
	2-2	256.16	209.81
	2-3	283.70	232.37
	2-4	278.55	228.15
	2-5	173.17	141.84
2006	-1	94.72	91.73
2006	-2	208.95	202.34
2006	-3	127.00	122.98
2006	-4	235.76	228.31
2007	-1	108.27	104.85
2007	-2	55.73	53.97
2007	-3	144.70	140.13
2009	-1	203.30	196.87
2009	-2	191.35	185.30
2009	-3	283.18	274.23
2009	-4	213.83	207.07

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2

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2006	-1	1	14.39	13.63	1-1	1	14.86	14.07
		2	16.32	15.45		2	12.71	12.03
		3	14.35	13.59		3	15.33	14.52
		4	14.58	13.81		4	15.58	14.75
		5	15.11	14.31		5	14.96	14.17
		6	14.26	13.50		6	12.94	12.25
		7	15.78	14.94		7	17.84	16.89
		8	15.16	14.35		8	12.12	11.48

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		9	15.42	14.60		9	13.37	12.66
2006	-2	1	15.33	14.52	1-2	1	14.64	13.86
		2	14.29	13.53		2	15.15	14.34
		3	16.20	15.34		3	14.28	13.52
		4	16.74	15.85		4	14.69	13.91
		5	10.81	10.24		5	15.56	14.73
		6	17.12	16.21		6	13.40	12.69
		7	16.84	15.95		7	14.40	13.63
		8	15.22	14.41		8	15.52	14.70
		9	17.08	16.17		9	15.15	14.34
		10	15.00	14.20		10	13.38	12.67
2006	-3	1	14.63	13.85	2-1	1	14.75	13.97
		2	13.78	13.05		2	13.89	13.15
		3	12.09	11.45		3	13.63	12.91
		4	13.11	12.41		4	16.05	15.20
		5	13.70	12.97		5	14.67	13.89
		6	11.72	11.10		6	14.53	13.76
		7	13.60	12.88		7	15.38	14.56
		8	12.95	12.26		8	12.03	11.39
		9	12.64	11.97		9	14.89	14.10
		10	13.70	12.97	2-2	1	16.44	15.57
		11	12.40	11.74		2	13.79	13.06
2006	-4	1	13.61	12.89		3	14.56	13.79
		2	12.64	11.97		4	12.12	11.48
		3	12.85	12.17		5	14.98	14.18
		4	14.91	14.12		6	10.98	10.40
		5	11.96	11.32		7	14.30	13.54
		6	14.89	14.10		8	15.47	14.65
		7	14.14	13.39		9	14.49	13.72

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		8	12.93	12.24		10	14.67	13.89
		9	13.62	12.90	3-1	1	15.33	14.52
		10	14.08	13.33		2	14.48	13.71
2007	-1	1	13.20	12.50		3	12.66	11.99
		2	14.31	13.55		4	15.09	14.29
		3	13.37	12.66		5	13.93	13.19
		4	13.33	12.62		6	14.08	13.33
		5	13.50	12.78		7	14.50	13.73
		6	12.65	11.98		8	15.09	14.29
		7	20.08	19.01		9	13.65	12.92
2007	-2	1	11.33	10.73		10	13.84	13.10
		2	15.92	15.07	3-2	1	16.56	15.68
		3	15.93	15.08		2	13.98	13.24
		4	11.68	11.06		3	13.96	13.22
		5	10.48	9.92		4	14.45	13.68
		6	15.21	14.40		5	15.38	14.56
		7	14.61	13.83		6	14.44	13.67
2007	-3	1	16.12	15.26		7	13.71	12.98
		2	15.89	15.05		8	14.60	13.82
		3	16.89	15.99		9	14.97	14.17
		4	14.44	13.67	4-1	1	13.45	12.74
		5	16.53	15.65		2	14.81	14.02
		6	14.32	13.56		3	14.44	13.67
		7	15.45	14.63		4	17.42	16.49
		8	15.21	14.40		5	13.32	12.61
		9	14.76	13.98		6	15.57	14.74
2007	-4	1	13.86	13.12		7	15.70	14.87
		2	14.14	13.39		8	16.52	15.64
		3	15.93	15.08		9	16.56	15.68

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		4	15.70	14.87			10	14.61	13.83
		5	11.87	11.24			11	15.17	14.36
		6	15.78	14.94			12	13.79	13.06
		7	17.75	16.81			13	15.02	14.22
2009	-1	1	15.59	14.76	4-2		1	15.43	14.61
		2	14.84	14.05			2	15.58	14.75
		3	13.56	12.84			3	13.63	12.91
		4	14.59	13.81			4	15.72	14.88
		5	15.11	14.31			5	14.94	14.15
		6	17.70	16.76			6	15.13	14.33
		7	17.15	16.24			7	14.29	13.53
		8	18.96	17.95			8	15.68	14.85
2009	-2	1	13.73	13.00			9	15.75	14.91
		2	13.77	13.04					
		3	15.93	15.08					
		4	14.43	13.66					
		5	13.70	12.97					
		6	15.28	14.47					
		7	13.68	12.95					
		8	14.87	14.08					
		9	14.64	13.86					
		10	16.44	15.57					

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