

Trial report

Variety testing of
Lolium perenne, Dactylis glomerata and
Festuca arundinacea

First year harvest

AGRONOVA



LC Field Trials

2007

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1. Introduction

This report contains the results of five variety testing trials *Lolium perenne*, *Festuca arundinacea* and *Dactylis glomerata*. The location of the trials was near Koge, Denmark.

Trial number by Agronova	Species
2006.540.00	<i>Lolium perenne</i>
2006.541.00	<i>Festuca arundinacea</i>
2006.542.00	<i>Dactylis glomerata</i>

The trials have been carried out by the GEP-unit at LandboCentrum, Agronova, in 2007 for Barenbrug, Holland.

27 September 2007

Morten Lind
Agronova Field Trials
LandboCentrum

2. Trial 2006.540.00 *Lolium perenne* (Rajgræs)

2.1 Varieties

Trt No.	Treatment Name
1	Tyrella
2	Corbet
3	Barata
4	Barfort
5	Malone
6	Portrush
7	Dunloy
8	Barrage
9	Bartwingo
10	Bartwingo spray

“Bartwingo spray” is included in the trial to test application of extra 30 N.

2.2 Plot map

Block	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	7	2	5	6	9	6	1	4	7	3	10	2	4	5	6	9	7
	10	4	3	1	8	2	10	5	8	9	3	1	7	9	8	1	10

Additional map section below is at right of previous section.

Block	18	19	20	21	22	23	24	25
	4	2	8	2	3	5	8	9
	6	5	3	1	10	4	7	6

2.3 Site description

Basic information for trial 2006.540.00 *Lolium perenne* (Rajgræs)

Trial host	Heggelund LandboCentrum		
Soil analysis	Coarsesand: 27,8 % Silt: 14,0 % Humus: 2,0 % Finesand: 42,2 % Clay: 14,0 %	Rt: 5,9 Pt: 1,8 Kt: 8,9 Mgt: 5,4	
Previous crop	Spring Barley		
Drilling date	25-04-2006	Seed rate	9 kg/ha
Fertilizer date type rate	13-9-2006 NS 24-6 20 N	01-04-2007 N 34 150 N	24-04-2007 NS 21-24 20N
Herbicides	23-04-2007 0,1 Primus + 1,0 MCPA 24-05-2007 0,2 Amistar + 0,2 Tern + 0,2 Folicur + 0,1 IT-Cypermethrin		

2.4 Results

In the start of July, there was a long rainy period which delayed harvest. The trial was harvested on the 25th of July under slightly wet conditions. It should be noticed that there was observed seed shattering due to the rainy period, after full maturity was reached.

In the following table results from harvest, seed analysis and analysis of variance is given. Analysis was done by Student-Newman-Keuls test where different letters indicate statistical significant difference at 95% level.

Location: Heggelund Study Director: Morten Lind			
Crop Code	LOLPE	LOLPE	LOLPE
BBCH Scale	BGRM	BGRM	BGRM
Crop Name	Perennial ryegrass	Perennial ryegrass	Perennial ryegrass
Rating Date	6Aug07	6Aug07	6Aug07
Rating Data Type	YIELD	MOICON	YIELD
Rating Unit	KG/PLOT	%	KG/HA
Sample Size	1	1	1
Sample Size Unit	plot	plot	plot
ARM Action Codes	+	+	T2
Number of Decimals	2	1	1
Trt No.	Treatment Name		
1	Tyrella	4,75 cd	23,4
2	Corbet	4,98 bc	19,3
3	Barata	5,58 ab	22,0
4	Barfort	5,36 bc	17,4
5	Malone	4,31 d	19,1
6	Portrush	5,17 bc	22,4
7	Dunloy	6,00 a	24,5
8	Barrage	5,63 ab	22,9
9	Bartwingo	4,83 cd	22,0
10	Bartwingo spray	5,02 bc	21,7
	LSD (P=.05)	0,454	.
	Standard Deviation	0,355	.
	CV	6,88	.
	Bartlett's X2	8,763	.
	P(Bartlett's X2)	0,459	.
	Replicate F	0,318	0,352
	Replicate Prob(F)	0,8642	0,8406
	Treatment F	9,653	8,502
	Treatment Prob(F)	0,0001	0,0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

ARM Action Codes

T2 = [C4]-([C4]*@MVAVGREP([C3])/100)

3. Trial 2006.541.00 *Festuca arundinacea* (Strandsvingel)

3.1 Varieties

Trt No.	Treatment Name
1	Barolex
2	Bariane
3	Emeraude
4	Karolina
5	Retu

3.2 Plot map

Block	1	2	3	4	5	6	7	8	9	10	11	12	13
	2	3	5	2	4	3	5	1	3	2	1	3	4
	safeplot	4	1	5	3	1	2	4	1	5	4	2	5

3.3 Site description

Basic information for trial 2006.541.00 *Festuca arundinacea* (Strandsvingel)

Trial host	Heggelund LandboCentrum		
Soil analysis	Coarsesand: 27,8 % Silt: 14,0 % Humus: 2,0 % Finesand: 42,2 % Clay: 14,0 %	Rt: 5,9 Pt: 1,8 Kt: 8,9 Mgt: 5,4	
Previous crop	Spring Barley		
Drilling date	25-04-2006	Seed rate	8 kg/ha
Fertilizer	date type rate	13-9-2006 NS 24-6 30 N	15-03-2007 NPK 18-4-14 60 N
Pesticides	01-04-2007 N 34 60 N		
	23-04-2007 0,1 Primus + 1,0 MCPA 24-05-2007 0,2 Amistar + 0,2 Tern + 0,2 Folicur + 0,4 Moddus + 1,25 CCC + 0,1 IT-Cypermethrin		

3.4 Results

To ensure full maturity at harvest all plots were swathed at the 2nd of July. In the start of July, there was a long rainy period which delayed harvest. The trial was harvested on the 17th of July under slightly wet conditions.

In the following table results from harvest, seed analysis and analysis of variance is given. Analysis was done by Student-Newman-Keuls test where different letters indicate statistical significant difference at 95% level.

Location: Heggelund Study Director: Morten Lind			
Crop Code	FESAR	FESAR	FESAR
BBCH Scale	BGRM	BGRM	BGRM
Crop Name	Tall fescue	Tall fescue	Tall fescue
Rating Date	18Jul07		18Jul07
Rating Data Type	YIELD	MOICON	YIELD
Rating Unit	KG/PLOT	%	KG/HA
Sample Size	1	1	1
Sample Size Unit	PLOT	PLOT	PLOT
Days After First/Last Applic.			
Trt-Eval Interval			
Plant-Eval Interval	449 DP-1		449 DP-1
ARM Action Codes			T2
Number of Decimals	2	2	1
Trt Treatment			
No. Name			
1 Barolex	4,13 c	15,00	1407,1 b
2 Bariane	4,13 c	16,40	1430,3 b
3 Emeraude	4,27 c	15,10	1490,0 b
4 Karolina	4,91 b	12,60	2027,0 a
5 Retu	5,33 a	16,80	1944,1 a
LSD (P=.05)	0,297	.	106,54
Standard Deviation	0,221	.	79,46
CV	4,85	.	4,79
Bartlett's X2	2,95	.	2,868
P(Bartlett's X2)	0,566	.	0,58
Replicate F	0,673		0,714
Replicate Prob(F)	0,6201		0,5945
Treatment F	29,855		71,464
Treatment Prob(F)	0,0001		0,0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

ARM Action Codes

T2 = [C4]-([C4]*@MVAVGREP([C3])/100)

4. Trial 2006.542.00 *Dactylis glomerata* (Hundegræs)

4.1 Varieties

Trt No.	Treatment Name
1	Baraula
2	Cristobal
3	Lumont

4.2 Plot map

Block	1	2	3	4	5	6	7	8
	1	2	1	2	3	2	3	1
	Safe plot	3	2	3	1	3	1	2

4.3 Site description

Basic information for trial 2006.542.00 *Dactylis glomerata* (Hundegræs)

Trial host	Heggelund LandboCentrum		
Soil analysis	Coarsesand: 27,8 % Silt: 14,0 % Humus: 2,0 % Finesand: 42,2 % Clay: 14,0 %	Rt: 5,9 Pt: 1,8 Kt: 8,9 Mgt: 5,4	
Previous crop	Spring Barley		
Drilling date	25-04-2006	Seed rate	7kg/ha
Fertilizer	date type rate	13-9-2006 NS 24-6 60 N	15-03-2007 NPK 18-4-14 60 N
Herbicides		01-04-2007 N 34 60 N	23-04-2007 0,1 Primus + 1,0 MCPA 24-05-2007 0,2 Amistar + 0,2 Tern + 0,2 Folicur + 0,1 IT-Cypermethrin

4.4 Results

To ensure full maturity at harvest all plots were swathed at the 2nd of July. In the start of July, there was a long rainy period which delayed harvest. The trial was harvested on the 17th of July under slightly wet conditions.

In the following table results from harvest, seed analysis and analysis of variance is given. Analysis was done by Student-Newman-Keuls test where different letters indicate statistical significant difference at 95% level.

Location: Heggelund Study Director: Morten Lind			
Crop Code	DACGL	DACGL	DACGL
BBCH Scale	BGRM	BGRM	BGRM
Crop Name	Orchard grass	Orchard grass	Orchard grass
Rating Date	19Jul07		19Jul07
Rating Data Type	YIELD	MOICON	YIELD
Rating Unit	KG/PLOT	%	KG/HA
Sample Size	1	1	1
Sample Size Unit	PLOT	PLOT	PLOT
ARM Action Codes			T2
Number of Decimals	2	2	1
Trt Treatment No. Name			
1 Baraula	5,08 a	25,50	1538,8 a
2 Cristobal	4,42 b	19,00	1414,6 b
3 Lumont	4,50 b	19,20	1448,8 ab
LSD (P=.05)	0,317	.	98,33
Standard Deviation	0,217	.	67,42
CV	4,65	.	4,59
Bartlett's X2	1,941	.	1,662
P(Bartlett's X2)	0,379	.	0,436
Replicate F	2,162		2,169
Replicate Prob(F)	0,1642		0,1632
Treatment F	13,846		4,524
Treatment Prob(F)	0,0025		0,0485

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

ARM Action Codes

T2 = [C4]-([C4]*@MVAVGREP([C3])/100)

5. Trial comments

Weather conditions for production of grass for seed in Denmark, 2006-2007

Generally autumn was warm and sunny with less than normal precipitation and grasses continued growing longer than normal. Compared to normal, winter was rather warm with average temperatures above 0 °C. Spring was cold and growth started late. Generally spring was favourable for grass for seed production. June gave fine conditions for flowering but from the start of July there was a long rainy period and there was even a thunderstorm just at the end of June. The bad weather conditions delayed and made harvest rather difficult.

All together, conditions were favourable for grass for seed production just until harvest.

Lolium perenne (Rajgræs)

Differences between varieties in yield were from (average) 1333-1846 kg/ha, with Malone as lowest yielding and Barrage as highest yielding.

Barrage yielded significantly more than Bartwingo, Tyrella and Malone. The rest of the tested varieties could not be separated statistically.

There was no statistical significant difference between treatment 9 and 10 (Bartwingo and Bartwingo + 30N).

Festuca arundinacea (Strandsvingel)

Differences between varieties in yield were from (average) 1407-2027 kg/ha, with Bariance as lowest yielding and Karolina as highest yielding.

Karolina and Retu yielded significantly more than the other tested varieties.

Dactylis glomerata (Hundegræs)

Differences between varieties in yield were from (average) 1415-1539 kg/ha, with Cristobal as lowest yielding and Baraula as highest yielding.

There was statistical significant difference on yield between Baraula and Cristobal but neither of them could be statistically separated from Lumont on yield.

6. Appendix 1. Single plot data

Trial ID: 200654000					
Location: Heggelund					
Study Director: Morten Lind					
Crop Code		LOLPE	LOLPE	LOLPE	
BBCH Scale		BGRM	BGRM	BGRM	
Crop Name		Perennial ryegrass	Perennial ryegrass	Perennial ryegrass	
Rating Date		6Aug07	6Aug07	6Aug07	
Rating Data Type		YIELD	MOICON	YIELD	
Rating Unit		KG/PLOT	%	KG/HA	
Sample Size		1	1	1	
Sample Size Unit		plot	plot	plot	
ARM Action Codes		+	+	T2	
Number of Decimals		2	1	1	
Trt	Treatment				
No.	Name	Plot			
1	Tyrella	502	4,57	23,4	1378,3
		1002	4,93		1486,9
		1402	4,44		1339,1
		1901	4,68		1411,5
		2202	5,11		1541,2
	Mean =	4,75	23,4		1431,4
2	Corbet	501	5,51	19,3	1783,7
		701	4,35		1408,2
		1401	4,96		1605,7
		2002	5,50		1780,5
		2401	4,58		1482,7
	Mean =	4,98	19,3		1612,2
3	Barata	401	5,60	22,0	1669,1
		602	5,69		1696,0
		1502	5,11		1523,1
		1601	5,77		1719,8
		2302	5,71		1701,9
	Mean =	5,58	22,0		1662,0
4	Barfort	302	5,30	17,4	1663,6
		801	5,57		1748,3
		1301	5,56		1745,2
		1801	5,11		1603,9
		2402	5,24		1644,7
	Mean =	5,36	17,4		1681,1
5	Malone	301	3,86	19,1	1194,2
		702	4,22		1305,6
		1201	4,78		1478,8
		1802	3,98		1231,3
		2301	4,71		1457,1
	Mean =	4,31	19,1		1333,4
6	Portrush	102	4,68	22,4	1546,4
		802	5,18		1711,6
		1101	5,26		1738,0
		2001	5,52		1823,9
		2201	5,19		1714,9
	Mean =	5,17	22,4		1707,0

Crop Code		LOLPE	LOLPE	LOLPE
BBCH Scale		BGRM	BGRM	BGRM
Crop Name		Perennial ryegrass	Perennial ryegrass	Perennial ryegrass
Rating Date		6Aug07	6Aug07	6Aug07
Rating Data Type		YIELD	MOICON	YIELD
Rating Unit		KG/PLOT	%	KG/HA
Sample Size		1	1	1
Sample Size Unit		plot	plot	plot
ARM Action Codes		+	+	T2
Number of Decimals		2	1	1
Trt Treatment				
No. Name	Plot			
7 Dunloy	202	6,50	24,5	1760,5
	901	6,19		1676,5
	1302	5,94		1608,8
	1701	6,13		1660,3
	2501	5,23		1416,5
	Mean =	6,00	24,5	1624,5
8 Barrage	201	5,18	22,9	1697,4
	601	5,75		1884,1
	1102	5,78		1894,0
	1702	6,02		1972,6
	2102	5,43		1779,3
	Mean =	5,63	22,9	1845,5
9 Bartwingo	101	4,99	22,0	1675,2
	1001	4,48		1504,0
	1202	4,68		1571,1
	1602	4,77		1601,4
	2101	5,25		1762,5
	Mean =	4,83	22,0	1622,8
10 Bartwingo spray	402	4,85	21,7	1496,8
	902	5,07		1564,7
	1501	5,07		1564,7
	1902	5,21		1607,9
	2502	4,88		1506,0
	Mean =	5,02	21,7	1548,0

ARM Action Codes

$$T2 = [C4] - ([C4]^* @MVAVGREP([C3])/100)$$

Trial ID: 200654100				
Location: Heggelund				
Study Director: Morten Lind				
Crop Code	FESAR	FESAR	FESAR	
BBCH Scale	BGRM	BGRM	BGRM	
Crop Name	Tall fescue	Tall fescue	Tall fescue	
Rating Date	18Jul07		18Jul07	
Rating Data Type	YIELD	MOICON	YIELD	
Rating Unit	KG/PLOT	%	KG/HA	
Sample Size	1	1	1	
Sample Size Unit	PLOT	PLOT	PLOT	
ARM Action Codes			T2	
Number of Decimals	2	2	1	
Trt Treatment				
No. Name Plot				
1 Barolex	301	3,98	15,00	1355,3
	502	4,20		1430,3
	601	3,81		1297,4
	802	4,53		1542,6
	1102	4,14		1409,8
	Mean =	4,13	15,00	1407,1
2 Bariance	202	4,36	16,40	1508,5
	401	4,20		1453,1
	702	3,95		1366,6
	1001	4,15		1435,8
	1301	4,01		1387,4
	Mean =	4,13	16,40	1430,3
3 Emeraude	201	4,14	15,10	1445,3
	501	4,45		1553,6
	801	4,38		1529,1
	902	4,20		1466,3
	1201	4,17		1455,8
	Mean =	4,27	15,10	1490,0
4 Karolina	101	4,78	12,60	1971,7
	302	4,85		2000,6
	602	5,06		2087,2
	901	5,14		2120,2
	1202	4,74		1955,2
	Mean =	4,91	12,60	2027,0
5 Retu	102	4,98	16,80	1816,4
	402	5,46		1991,5
	701	5,68		2071,7
	1002	5,11		1863,8
	1101	5,42		1976,9
	Mean =	5,33	16,80	1944,1

ARM Action Codes

$$T2 = [C4] - ([C4]^* @MVAVGREP([C3])/100)$$

Trial ID: 200654200
 Location: Heggelund
 Study Director: Morten Lind

Crop Code		DACGL	DACGL	DACGL	
BBCH Scale		BGRM	BGRM	BGRM	
Crop Name		Orchard grass	Orchard grass	Orchard grass	
Rating Date		19Jul07		19Jul07	
Rating Data Type		YIELD	MOICON	YIELD	
Rating Unit		KG/PLOT	%	KG/HA	
Sample Size		1	1	1	
Sample Size Unit		PLOT	PLOT	PLOT	
ARM Action Codes				T2	
Number of Decimals		2	2	1	
Trt	Treatment				
No.	Name	Plot			
1	Baraula	101	4,79	25,50	1449,8
		202	4,70		1422,5
		402	5,33		1613,2
		601	5,15		1558,7
		801	5,45		1649,5
	Mean =	5,08	25,50	1538,8	
2	Cristobal	102	4,07	19,00	1302,0
		301	4,52		1446,0
		501	4,67		1493,9
		602	4,60		1471,6
		701	4,25		1359,6
	Mean =	4,42	19,00	1414,6	
3	Lumont	201	4,53	19,20	1457,8
		302	4,23		1361,2
		401	4,61		1483,5
		502	4,58		1473,9
		702	4,56		1467,4
	Mean =	4,50	19,20	1448,8	

ARM Action Codes

T2 = [C4]-([C4]*@MVAVGREP([C3])/100)

7. Appendix 2 – Climate data

Date	Temp	Min Temp	Max Temp	Rain (mm)
01.07.2006	17.9	12.4	22.5	0.0
02.07.2006	18.9	12.7	23.9	0.0
03.07.2006	19.6	13.4	24.3	0.0
04.07.2006	20.3	13.6	25.6	0.0
05.07.2006	21.8	15.8	26.8	0.0
06.07.2006	23.3	17.0	28.8	0.3
07.07.2006	21.8	17.2	26.4	0.2
08.07.2006	18.9	14.7	22.9	0.1
09.07.2006	20.8	18.7	24.1	1.5
10.07.2006	19.1	13.6	22.8	0.0
11.07.2006	18.6	10.8	24.9	1.9
12.07.2006	16.5	9.6	21.9	0.0
13.07.2006	18.8	11.4	24.3	0.0
14.07.2006	16.8	12.0	20.2	0.0
15.07.2006	17.8	10.5	23.3	0.0
16.07.2006	19.8	12.9	25.7	0.0
17.07.2006	21.5	14.8	26.5	0.0
18.07.2006	20.8	14.1	26.0	0.0
19.07.2006	21.4	14.3	27.0	0.1
20.07.2006	23.6	20.1	28.2	0.5
21.07.2006	21.5	17.2	25.0	2.6
22.07.2006	20.8	16.1	25.0	0.1
23.07.2006	22.1	18.9	26.8	5.2
24.07.2006	20.5	14.3	25.2	0.0
25.07.2006	20.9	13.3	26.7	0.1
26.07.2006	22.6	15.6	29.0	0.0
27.07.2006	23.5	20.1	27.3	4.1
28.07.2006	20.1	17.5	23.3	4.0
29.07.2006	21.5	16.2	26.8	0.3
30.07.2006	22.9	19.0	27.1	13.6
31.07.2006	20.0	14.7	23.6	0.2
01.08.2006	20.3	15.8	24.9	11.4
02.08.2006	16.4	12.7	19.3	1.6
03.08.2006	17.1	11.7	21.8	0.5
04.08.2006	19.3	15.3	24.7	1.1
05.08.2006	20.3	14.8	25.0	0.0
06.08.2006	20.5	13.9	26.3	1.5
07.08.2006	20.5	13.5	25.4	0.0
08.08.2006	19.2	14.0	25.3	0.0
09.08.2006	17.9	14.6	21.1	1.4
10.08.2006	16.5	11.8	20.7	2.1
11.08.2006	16.4	14.9	19.7	24.2
12.08.2006	15.5	13.1	17.7	7.9
13.08.2006	16.4	14.8	18.7	24.3
14.08.2006	16.3	14.9	18.6	5.4
15.08.2006	16.3	14.7	18.1	9.4
16.08.2006	17.5	14.3	21.0	1.3
17.08.2006	16.8	13.5	19.8	3.5
18.08.2006	19.4	17.2	22.7	2.3
19.08.2006	19.3	16.2	23.6	1.6

20.08.2006	17.6	14.5	20.9	3.5
21.08.2006	17.0	14.7	20.3	2.9
22.08.2006	17.5	15.7	20.1	7.9
23.08.2006	16.3	12.1	19.2	0.8
24.08.2006	16.2	11.3	21.0	0.0
25.08.2006	17.4	14.1	20.5	1.7
26.08.2006	16.8	13.6	20.0	2.5
27.08.2006	15.5	13.9	18.6	16.9
28.08.2006	15.0	12.2	18.1	2.4
29.08.2006	13.2	12.0	15.1	18.4
30.08.2006	15.0	13.3	17.2	3.5
31.08.2006	16.6	14.2	18.9	3.0
01.09.2006	16.5	14.4	19.0	5.4
02.09.2006	18.0	15.8	20.8	5.6
03.09.2006	16.4	14.5	18.9	4.5
04.09.2006	15.5	14.3	17.3	0.9
05.09.2006	15.0	11.9	18.1	0.1
06.09.2006	17.2	13.3	19.2	0.6
07.09.2006	15.3	12.8	17.9	3.4
08.09.2006	14.2	11.3	17.6	0.5
09.09.2006	13.9	9.3	17.6	0.0
10.09.2006	12.5	8.4	18.5	0.2
11.09.2006	15.0	10.8	20.4	0.0
12.09.2006	16.4	11.6	22.0	0.0
13.09.2006	16.1	10.4	21.6	0.0
14.09.2006	17.0	11.9	21.1	0.0
15.09.2006	17.2	15.2	21.4	0.0
16.09.2006	17.0	15.4	19.3	0.0
17.09.2006	16.6	14.5	19.6	0.1
18.09.2006	16.4	15.0	18.2	0.7
19.09.2006	15.7	12.2	18.6	0.4
20.09.2006	14.2	10.0	17.8	0.0
21.09.2006	15.9	11.9	21.2	0.0
22.09.2006	17.5	15.0	20.6	0.0
23.09.2006	16.4	14.0	18.9	0.0
24.09.2006	17.2	14.8	20.6	0.0
25.09.2006	18.0	15.6	21.6	0.0
26.09.2006	17.4	15.6	21.1	4.3
27.09.2006	15.1	13.5	17.3	6.3
28.09.2006	15.6	13.7	17.7	0.7
29.09.2006	17.0	15.3	20.0	0.2
30.09.2006	16.0	11.1	19.7	1.2
01.10.2006	14.9	10.0	18.3	4.8
02.10.2006	14.7	13.7	16.0	7.8
03.10.2006	13.5	9.9	15.6	1.6
04.10.2006	12.5	9.8	16.3	1.2
05.10.2006	12.5	10.4	14.9	5.5
06.10.2006	14.8	12.0	16.4	4.2
07.10.2006	13.4	11.5	15.5	3.7
08.10.2006	13.8	11.5	15.1	3.9
09.10.2006	12.9	10.2	15.7	0.0
10.10.2006	12.9	10.5	15.9	0.0
11.10.2006	13.5	12.6	14.5	0.0
12.10.2006	13.8	12.3	15.1	0.0
13.10.2006	12.3	10.0	14.6	0.0

14.10.2006	10.3	6.1	13.3	0.0
15.10.2006	9.7	6.0	14.1	0.0
16.10.2006	10.2	8.0	12.2	0.0
17.10.2006	9.2	5.6	14.0	0.0
18.10.2006	11.1	5.7	13.4	0.0
19.10.2006	12.4	11.3	14.3	1.0
20.10.2006	12.2	10.9	13.4	2.0
21.10.2006	13.3	12.2	14.6	0.7
22.10.2006	13.3	12.5	14.5	5.7
23.10.2006	13.8	11.6	15.7	11.3
24.10.2006	12.1	9.4	14.7	7.6
25.10.2006	10.6	7.6	13.4	0.9
26.10.2006	14.2	12.3	16.7	3.1
27.10.2006	10.7	7.2	12.8	0.2
28.10.2006	11.1	7.5	12.5	5.7
29.10.2006	6.0	3.3	9.6	2.1
30.10.2006	9.8	5.8	12.1	2.9
31.10.2006	10.4	6.9	12.7	7.5
01.11.2006	1.0	-0.7	5.0	2.6
02.11.2006	-0.6	-3.5	1.6	3.2
03.11.2006	2.0	-3.3	4.9	1.0
04.11.2006	9.1	7.0	10.2	0.2
05.11.2006	10.4	9.1	11.1	5.5
06.11.2006	11.3	9.6	12.7	0.0
07.11.2006	10.6	9.5	11.7	2.0
08.11.2006	9.4	8.5	10.5	9.8
09.11.2006	6.4	4.1	8.7	2.2
10.11.2006	5.9	3.4	7.2	1.8
11.11.2006	6.1	4.9	8.1	7.8
12.11.2006	6.0	3.9	8.3	3.3
13.11.2006	7.5	5.1	9.3	7.1
14.11.2006	9.2	8.0	10.8	0.8
15.11.2006	10.3	9.3	11.2	0.9
16.11.2006	11.4	9.0	13.5	0.2
17.11.2006	10.0	7.3	11.5	2.1
18.11.2006	8.3	5.2	11.5	0.5
19.11.2006	5.2	2.4	8.2	6.9
20.11.2006	6.1	4.3	6.7	2.7
21.11.2006	6.0	3.7	7.1	3.7
22.11.2006	5.5	3.0	6.7	0.5
23.11.2006	7.2	5.1	9.2	4.9
24.11.2006	8.7	7.4	9.5	0.2
25.11.2006	10.8	9.1	13.2	0.9
26.11.2006	9.2	7.5	10.3	0.3
27.11.2006	7.8	6.6	8.7	0.1
28.11.2006	8.0	6.9	10.8	0.1
29.11.2006	8.6	7.5	10.3	0.2
30.11.2006	7.3	5.1	8.6	0.0
01.12.2006	7.1	5.3	8.1	0.2
02.12.2006	7.9	7.3	8.4	2.8
03.12.2006	8.2	7.1	9.1	3.6
04.12.2006	7.9	7.6	8.1	5.2
05.12.2006	11.2	10.0	12.5	2.0
06.12.2006	8.9	7.7	10.2	2.5
07.12.2006	7.6	6.6	9.0	6.9

08.12.2006	9.1	7.7	10.5	1.5
09.12.2006	7.0	4.2	8.4	0.1
10.12.2006	5.1	3.7	7.3	0.5
11.12.2006	5.9	4.7	7.8	4.3
12.12.2006	6.6	4.9	7.4	2.1
13.12.2006	8.3	7.0	9.9	6.4
14.12.2006	10.1	9.8	10.5	1.6
15.12.2006	8.6	7.4	10.3	2.4
16.12.2006	5.3	3.9	7.1	3.2
17.12.2006	4.0	1.5	5.4	3.3
18.12.2006	2.1	1.0	4.1	0.1
19.12.2006	6.0	4.6	7.0	0.0
20.12.2006	5.7	2.8	8.5	0.1
21.12.2006	6.4	5.7	6.9	0.0
22.12.2006	6.6	5.8	7.2	0.0
23.12.2006	6.7	6.6	6.8	0.1
24.12.2006	7.0	5.9	7.8	0.0
25.12.2006	5.4	5.1	5.9	0.0
26.12.2006	5.4	5.0	5.9	0.0
27.12.2006	5.4	4.1	5.9	0.2
28.12.2006	4.0	3.6	4.7	0.9
29.12.2006	4.5	3.4	5.7	0.1
30.12.2006	6.8	5.1	8.4	14.3
31.12.2006	7.4	6.7	8.1	3.8

Date	Temp	Min Temp	Max Temp	Rain (mm)
01.01.2007	6.8	5.0	8.2	5.6
02.01.2007	4.9	4.2	5.9	0.3
03.01.2007	6.1	4.8	7.2	2.3
04.01.2007	7.6	7.0	8.1	3.2
05.01.2007	6.9	6.2	8.0	0.7
06.01.2007	6.1	5.6	6.7	0.7
07.01.2007	6.8	5.7	7.8	1.2
08.01.2007	6.3	5.6	7.4	3.5
09.01.2007	9.9	8.4	10.8	2.3
10.01.2007	8.2	5.2	9.8	6.5
11.01.2007	5.8	4.2	7.3	11.0
12.01.2007	8.4	7.0	10.5	2.3
13.01.2007	8.4	6.8	9.3	1.6
14.01.2007	6.7	6.3	7.0	1.0
15.01.2007	6.6	4.6	7.4	0.0
16.01.2007	5.6	4.4	7.0	5.0
17.01.2007	6.9	4.8	8.3	7.0
18.01.2007	5.0	2.6	7.2	9.5
19.01.2007	5.0	3.4	6.9	6.4
20.01.2007	6.2	4.5	9.4	13.9
21.01.2007	3.3	1.3	4.5	5.5
22.01.2007	-3.4	-7.4	0.8	1.4
23.01.2007	-3.0	-6.8	0.3	0.3
24.01.2007	-3.6	-6.5	-1.2	0.0
25.01.2007	-4.5	-7.1	-1.4	0.1
26.01.2007	1.5	-0.9	3.6	4.2
27.01.2007	-1.5	-4.5	1.0	2.7
28.01.2007	4.6	2.5	6.5	2.9
29.01.2007	2.5	0.6	5.9	0.7
30.01.2007	6.3	5.2	7.8	0.3
31.01.2007	5.8	4.0	7.8	3.9
01.02.2007	4.8	3.2	5.8	0.3
02.02.2007	6.0	4.9	6.9	3.1
03.02.2007	5.6	3.3	8.4	0.1
04.02.2007	4.9	3.5	6.2	0.0
05.02.2007	2.8	0.9	4.5	0.4
06.02.2007	1.0	-0.1	2.5	1.2
07.02.2007	0.4	-1.1	1.9	1.1
08.02.2007	0.6	-1.7	1.7	1.4
09.02.2007	-1.6	-2.6	-0.6	0.2
10.02.2007	-1.5	-2.6	-0.7	0.0
11.02.2007	-0.4	-1.6	0.3	0.6
12.02.2007	1.6	0.3	2.6	2.8
13.02.2007	2.1	1.9	2.4	2.5
14.02.2007	3.1	1.9	3.8	2.9
15.02.2007	2.6	2.1	3.8	0.7
16.02.2007	3.1	2.6	3.9	0.0
17.02.2007	2.9	0.8	4.0	0.0
18.02.2007	2.9	-0.3	4.5	0.0
19.02.2007	2.3	1.7	3.0	0.0
20.02.2007	2.8	0.4	5.1	3.6
21.02.2007	-0.4	-1.0	0.2	14.0
22.02.2007	-1.7	-2.1	-1.1	1.2

23.02.2007	-1.6	-1.9	-1.2	1.4
24.02.2007	-0.2	-1.4	1.2	5.3
25.02.2007	2.3	1.5	2.8	10.0
26.02.2007	2.4	0.7	3.3	2.1
27.02.2007	1.7	0.2	3.5	5.1
28.02.2007	4.9	0.8	7.0	2.6
01.03.2007	5.2	3.5	7.3	0.8
02.03.2007	3.6	2.7	4.7	0.2
03.03.2007	3.2	2.0	4.1	0.0
04.03.2007	3.2	-0.1	6.9	0.0
05.03.2007	4.4	2.8	6.1	2.5
06.03.2007	6.2	4.0	8.0	3.1
07.03.2007	6.4	4.5	8.2	3.8
08.03.2007	5.7	3.7	7.3	0.4
09.03.2007	5.3	2.8	7.7	1.3
10.03.2007	6.5	2.3	8.5	0.0
11.03.2007	8.3	4.0	12.3	0.0
12.03.2007	8.4	3.0	13.8	0.0
13.03.2007	5.9	2.3	9.4	0.0
14.03.2007	7.2	4.5	10.8	0.0
15.03.2007	7.8	5.2	10.0	0.0
16.03.2007	6.7	4.3	9.0	3.0
17.03.2007	6.8	4.8	8.1	4.0
18.03.2007	5.8	3.6	8.0	2.4
19.03.2007	3.4	0.4	5.5	2.1
20.03.2007	3.6	0.4	6.8	0.4
21.03.2007	3.9	2.3	5.2	2.2
22.03.2007	5.2	3.2	7.8	0.1
23.03.2007	6.7	3.6	8.8	2.0
24.03.2007	7.5	4.3	10.6	0.0
25.03.2007	7.2	4.1	11.8	0.0
26.03.2007	7.0	2.4	11.8	0.0
27.03.2007	6.4	1.9	11.2	0.0
28.03.2007	8.0	2.8	12.8	0.0
29.03.2007	8.0	4.2	12.4	0.0
30.03.2007	6.6	3.1	11.5	0.0
31.03.2007	7.5	2.9	13.4	0.0
01.04.2007	6.2	0.1	12.6	0.0
02.04.2007	8.1	1.3	13.6	0.0
03.04.2007	4.5	-1.3	8.4	0.2
04.04.2007	7.0	1.3	9.8	0.0
05.04.2007	8.9	5.1	12.5	0.0
06.04.2007	5.4	1.9	8.0	0.0
07.04.2007	6.1	3.3	8.5	0.0
08.04.2007	6.0	4.3	7.5	3.0
09.04.2007	8.4	7.4	10.0	2.5
10.04.2007	9.6	8.1	11.5	0.0
11.04.2007	10.6	5.8	15.3	0.0
12.04.2007	8.8	2.8	14.8	0.0
13.04.2007	9.4	3.2	15.1	0.0
14.04.2007	10.4	4.3	16.4	0.0
15.04.2007	10.1	4.7	15.5	0.0
16.04.2007	13.8	8.6	20.0	0.0
17.04.2007	9.3	5.6	12.6	0.0
18.04.2007	7.6	5.0	10.6	0.1

19.04.2007	6.6	3.1	9.6	2.6
20.04.2007	4.2	0.1	7.8	0.0
21.04.2007	5.7	1.3	10.1	0.0
22.04.2007	8.4	6.0	11.1	0.0
23.04.2007	12.1	7.6	16.7	0.0
24.04.2007	12.5	7.7	17.1	0.0
25.04.2007	9.1	6.2	12.4	0.0
26.04.2007	13.2	6.9	20.2	0.0
27.04.2007	14.9	8.7	21.5	0.0
28.04.2007	10.5	5.0	16.0	0.1
29.04.2007	8.8	5.1	12.7	0.0
30.04.2007	7.7	2.3	12.5	0.0
01.05.2007	9.7	4.3	15.7	0.0
02.05.2007	11.9	5.9	17.6	0.0
03.05.2007	7.8	1.5	12.2	0.0
04.05.2007	10.6	3.4	17.1	0.0
05.05.2007	10.0	3.3	16.0	0.0
06.05.2007	13.5	8.3	19.3	3.8
07.05.2007	10.8	8.2	13.5	4.1
08.05.2007	10.4	8.4	12.3	8.2
09.05.2007	8.2	2.9	11.1	1.2
10.05.2007	10.3	7.8	13.4	2.2
11.05.2007	9.8	6.9	11.7	2.5
12.05.2007	10.5	8.4	12.1	4.2
13.05.2007	14.0	11.5	17.2	0.3
14.05.2007	13.7	6.4	18.2	0.0
15.05.2007	9.4	3.5	13.6	0.0
16.05.2007	9.2	7.9	10.0	34.4
17.05.2007	8.3	7.1	9.3	6.9
18.05.2007	12.7	9.6	15.0	0.4
19.05.2007	12.4	6.6	16.7	1.7
20.05.2007	14.2	11.0	17.5	0.0
21.05.2007	15.6	11.4	21.2	0.0
22.05.2007	13.6	8.6	18.2	0.0
23.05.2007	12.1	8.4	15.8	0.0
24.05.2007	15.3	13.1	18.6	0.0
25.05.2007	16.5	12.1	20.1	0.0
26.05.2007	11.0	8.2	13.7	5.3
27.05.2007	13.4	10.9	15.1	2.0
28.05.2007	15.2	13.5	17.6	3.5
29.05.2007	17.1	13.6	22.1	7.0
30.05.2007	11.6	6.1	15.7	0.0
31.05.2007	13.7	8.5	17.9	0.0
01.06.2007	16.9	13.5	19.9	0.0
02.06.2007	12.5	10.2	14.5	0.5
03.06.2007	15.2	12.3	19.0	0.0
04.06.2007	15.2	14.4	16.6	2.4
05.06.2007	17.4	14.5	21.8	4.7
06.06.2007	17.7	14.9	21.3	0.2
07.06.2007	19.5	14.6	24.0	0.0
08.06.2007	18.3	10.7	23.6	0.0
09.06.2007	19.1	11.7	24.3	0.0
10.06.2007	21.0	14.5	26.5	0.0
11.06.2007	22.7	15.3	28.6	0.0
12.06.2007	20.0	14.2	24.4	0.0

13.06.2007	16.4	14.5	18.4	0.5
14.06.2007	13.3	8.5	16.4	0.1
15.06.2007	12.3	11.1	13.2	1.3
16.06.2007	13.8	12.2	15.3	35.6
17.06.2007	15.7	11.4	19.4	2.9
18.06.2007	15.8	12.7	19.2	0.0
19.06.2007	16.3	10.9	20.9	0.0
20.06.2007	18.2	15.8	21.1	1.0
21.06.2007	16.7	13.3	19.2	20.2
22.06.2007	15.7	12.4	19.6	6.8
23.06.2007	15.5	12.2	18.8	6.3
24.06.2007	16.7	14.1	19.0	0.1
25.06.2007	17.4	15.0	19.4	1.4
26.06.2007	14.3	12.0	18.7	3.8
27.06.2007	12.2	10.1	14.3	31.2
28.06.2007	12.8	9.5	15.9	0.0
29.06.2007	15.0	12.5	17.4	6.0
30.06.2007	12.9	9.4	16.3	1.6
01.07.2007	14.9	12.6	17.4	2.5
02.07.2007	16.2	15.0	18.6	12.4
03.07.2007	16.8	13.3	20.1	2.4
04.07.2007	15.6	13.6	18.9	23.1
05.07.2007	14.3	14.1	14.5	29.2
06.07.2007	15.0	13.3	17.3	0.0
07.07.2007	15.3	12.5	18.5	0.3
08.07.2007	15.3	10.9	18.9	0.1
09.07.2007	15.3	10.1	19.2	0.0
10.07.2007	15.0	11.0	19.3	1.6
11.07.2007	14.1	13.3	15.1	7.2
12.07.2007	14.9	13.3	17.2	0.6
13.07.2007	16.2	14.4	18.8	0.4
14.07.2007	19.8	14.1	26.9	2.1
15.07.2007	19.2	15.8	22.4	2.1
16.07.2007	19.6	16.3	24.3	0.0
17.07.2007	19.1	13.8	23.3	0.1
18.07.2007	18.9	13.8	23.0	0.0
19.07.2007	16.4	10.6	20.3	0.0
20.07.2007	17.6	14.8	20.5	2.2
21.07.2007	18.7	14.3	22.9	0.1
22.07.2007	14.2	12.5	16.0	27.5
23.07.2007	16.0	12.9	20.2	0.4
24.07.2007	15.0	13.6	17.1	10.4
25.07.2007	16.4	13.4	20.0	0.1
26.07.2007	18.0	15.8	20.4	7.3
27.07.2007	16.4	14.2	19.1	5.7
28.07.2007	15.4	12.9	19.4	4.2
29.07.2007	13.5	9.7	16.6	1.7
30.07.2007	13.6	12.5	15.3	5.7
31.07.2007	13.4	10.2	15.9	0.0