SCEPTREPLUS

Final Trial Report

Trial code:	SP12
Title:	Initial screening of efficacy and crop safety of novel products for the control of *Tetranychus urticae* (two-spotted spider mite) on glasshouse tomato
Crop	Crop: Tomato, with trial data expected to apply to other Solanaceae
Target	Two-spotted spider mite, *Tetranychus urticae*, TETRUR
Lead researcher:	Dr David George
Organisation:	Stockbridge Technology Centre, Cawood, Selby, YO8 3TZ
Period:	July 2017 to October 2017
Report date:	12.12.17
Report author:	Dr Jennifer Banfield-Zanin, Dr David George
ORETO Number: (certificate should be attached)	372

I the undersigned, hereby declare that the work was performed according to the procedures herein described and that this report is an accurate and faithful record of the results obtained

24/01/18 D. George

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Date Authors signature

Trial Summary

Introduction

Two-spotted spider mite (*Tetranychus urticae*), TSSM, is a significant economic pest of glasshouse tomatoes and other protected crops, causing visible damage to leaves and reducing yield. Control options are currently limited. The aim of this trial was to confirm products for inclusion in the trial, and evaluate the efficacy of selected products for control in glasshouse tomatoes. A mix of conventional and 'low risk' products were selected for testing, with likelihood of compatibility of products within an IPM approach for TSSM considered as a selection factor. Though not tested in the current trial, such compatibility is likely to be optimised with use of the 'low risk' products tested.

Methods

Tomato plants were grown under glass and artificially infested with TSSM in September 2017. Spray programmes started on 2nd October. A maximum of four applications were made using an Oxford Precision Sprayer, with water volume rates set to suit the growth of the crop ranging from 600-1000L/ha. Conventional products were applied at the first application time only, with one exception that was re-applied after 12 days (as per manufacturer's recommendation). Met52 OD was re-applied every four days, and AHDB9967 was re-applied after 8 days (as per manufacturer's recommendation). Efficacy was determined by counting the numbers of live adult and juvenile mites, as well as the number of eggs, on five marked leaves per plot. Assessments were made on four occasions, three days after each application. The crop was also monitored for evidence of phytotoxicity at these times.

Results

All treatments, including the standard and 'low risk' products, gave statistically significant reductions in numbers of TSSM adults, juveniles and eggs during the trial. Results for adult counts per plot, transformed where necessary for analysis, are shown in the table below as back transformed data as relevant (last two columns). All treatments mixed and sprayed well. There were no phytotoxic effects.

	Mean number of adult two spotted spider mites per plot				
Date	**29/09/2017**	**05/10/2017**	**09/10/2017**	**13/10/2017**	**17/10/2017**
Transformation	**Un-trans**	**Un-trans**	**Un-trans**	**Back-trans (from sqrt (x+0.5))**	**Back-trans (from log (x+1))**
Treatment					
Negative control	94.17	102.50	78.67	60.00	84.83
Borneo	88.00	57.00	27.67	7.33	2.67
AHDB9946	89.33	25.00	8.33	2.67	0.33
AHDB9945	70.00	32.17	14.17	3.67	3.00
AHDB9944	84.67	46.17	22.33	8.50	2.67
Met52 OD	70.50	90.83	46.17	15.83	12.83
AHDB9967	70.83	58.50	30.17	14.17	21.50
	Not significantly different from untreated control (p>0.05)				
	Significantly different from untreated control (p<0.05)				

Conclusions

TSSM established well, and all products (Borneo, AHDB9946, AHDB9945, AHDB9944, Met52 OD and AHDB9967) gave statistically significant reductions in pest numbers, relative to the control treatment. No treatments caused phytotoxic effects.

Take Home Message

This trial has identified a number of safe and effective products for controlling two-spotted spider mite. The conventional products tested performed at least as well as Borneo over the duration of the trial.

Objectives

1. To evaluate the efficacy of selected plant protection products against two-spotted spider mite on glasshouse tomato as measured by pest numbers.
2. To monitor the treated crop for phytotoxicity.

Trial conduct

UK regulatory guidelines were followed but EPPO guideline took precedence. The following EPPO guidelines were followed:

Relevant EPPO guideline(s)		**Variation from EPPO**
PP 1/152(4)	Design and analysis of efficacy evaluation trials	None
PP 1/135(3)	Phytotoxicity assessment	None
PP 1/181(4)	Conduct and reporting of efficacy evaluation trials including GEP	None
PP 1/37(2)	*Tetranychus urticae* on vegetables	See below
PP 1/239(2)	Dose expression for plant protection products	None

Deviations from EPPO guidance:
PP 1/37(2) – The number of tomato plants marked for assessment was reduced from ten to five plants. This was to afford each plant more space under lower light conditions, given the time of year of the trial, and to ensure that a good infestation of *T. urticae* was achieved on the leaves.

Test site

Item	**Details**
Location address	MFU 2 (M6), STC, Cawood, Selby, YO8 3TZ
Crop	Tomato (*Lycopersicon esculentum*)
Cultivar	Dometica
Soil or substrate type	Rockwool slab (Grotop Master, Grodan)
Agronomic practice	Drip irrigation. Applied STC Tomato Main Feed (EC 3.3, pH5.5). Standard glasshouse tomato crop management.
Prior history of site	n/a

Trial design

Item	**Details**
Trial design:	Incomplete Trojan square
Number of replicates:	6
Row spacing:	1.0m
Plot size: (w x l)	0.88m x 4.2m
Plot size: (m^2)	3.7m^2
Number of plants per plot:	9
Leaf Wall Area calculations	n/a

Treatment details

AHDB Code	Active substance	Product name or manufacturers code	Formulation batch number	Content of active substance in product	Formulation type
Control	Water only	Water	n/a	n/a	n/a
N/A	Etoxazole	Borneo	B7070028	110g/L	SC
AHDB9946	N/D	N/D	N/D	N/D	N/D
AHDB9945	N/D	N/D	N/D	N/D	N/D
AHDB9944	N/D	N/D	N/D	N/D	N/D
N/A	*Metarhizium anisopliae*	Met52 OD	LEC17144B	$2.0x10^9$ CFU/ml	EC
AHDB9967	N/D	N/D	N/D	N/D	N/D

Application schedule

Treatment number	Treatment: product name or AHDB code	Rate of active substance (ml or g a.s./ha)	Rate of product (L/ha)	Application code
1	Control (water)	n/a	n/a	ABCD
2	Borneo (standard)	23.1g	0.21	A
3	AHDB9946	10ml	1.0	A
4	AHDB9945	200g	1.0	A
5	N/A	Product withdrawn from testing		
6	AHDB9944	60-120ml	0.6	AD
7	Met52 OD	$2.5x10^{12}$ CFU	1.25	ABCD
8	AHDB9967	180g	3	AC

Application details

	Application A	Application B	Application C	Application D
Application date	02/10/2017	06/10/2017	10/10/2017	14/10/2017
Time of day	AM	AM	AM	AM
Crop growth stage (Max, min average BBCH)	604	605	605	606
Crop height (cm)	50cm	94cm	141cm	180cm
Crop coverage (%)	n/a	n/a	n/a	n/a
Application Method	Spray	Spray	Spray	Spray
Application Placement	Foliar	Foliar	Foliar	Foliar
Application equipment	Oxford Precision Sprayer	Oxford Precision Sprayer	Oxford Precision Sprayer	Oxford Precision Sprayer
Nozzle pressure	2 bar	2 bar	2 bar	2 bar
Nozzle type	Hollow cone (HC)	Hollow cone (HC)	Hollow cone (HC)	Hollow cone (HC)
Nozzle size	30HCX4	30HCX4	30HCX4	30HCX4
Application water volume/ha	600L/ha	800L/ha	800L/ha	1000L/ha
Temperature of air - shade (°C)	20.8°C	21.1°C	20.5°C	21.5°C
Relative humidity (%)	80%	78%	86%	81%
Wind speed range (m/s)	0	0	0	0
Dew presence (Y/N)	N	N	N	N
Temperature of soil - 2-5 cm (°C)	n/a*	n/a*	n/a*	n/a*
Wetness of soil - 2-5 cm	n/a*	n/a*	n/a*	n/a*
Cloud cover (%)	n/a*	n/a*	n/a*	n/a*

*Glasshouse trial with crop grown in rockwool

Untreated levels of pests/pathogens at application and through the assessment period

Common name	Scientific Name	EPPO Code	Infection level pre-application	Infection level at start of assessment period	Infection level at end of assessment period
Two-spotted spider mite	*Tetranychus urticae*	TETRUR	Mean - 195 live spider mites per plant	Mean - 259 live spider mites per plant	Mean - 322 live spider mites per plant

Assessment details

An assessment of efficacy was made by counting the live adult and juvenile spider mites, and any eggs, on a single marked leaf on each of five tomato plants in the middle of each plot, with assessments made three days after each application event. The same method was used to assess initial pre-treatment levels of infestation across the trial. Phytotoxicity was assessed at each assessment point by examining leaves for evidence of damage (such as scorch), though no such effects were observed in any plot.

	Evaluation Timing (DA)*					
Evaluation date	**After conventional insecticide**	**After microbial insecticide**	**After botanical insecticide**	**Crop Growth Stage (BBCH)**	**Evaluation type (efficacy, phytotoxicity)**	**What was assessed and how (e.g. dead or live pest; disease incidence and severity; yield, marketable quality)**
29/09/2017	-3	-3	-3	602	Infestation level	Number of live adult and juvenile spider mites, number of eggs.
05/10/2017	3	3	3	604	Efficacy + phytotoxicity	Number of live adult and juvenile spider mites, number of eggs. Phytotoxicity - leaf damage.
09/10/2017	7	3	7	605	Efficacy + phytotoxicity	Number of live adult and juvenile spider mites, number of eggs. Phytotoxicity - leaf damage.
13/10/2017	11	3	3	605	Efficacy + phytotoxicity	Number of live adult and juvenile spider mites, number of eggs. Phytotoxicity - leaf damage.
17/10/2017	15 (or 3DA for Treat. 6)	3	7	606	Efficacy + phytotoxicity	Number of live adult and juvenile spider mites, number of eggs. Phytotoxicity - leaf damage.

* DA – days after application

Statistical analysis

This trial was designed by Andrew Mead at Rothamsted Research as an incomplete Trojan square with 8 treatments, each being replicated 6 times. All data were analysed by ANOVA using the Minitab (v17) program by David George at STC. Prior to analysis data were checked for normality and homoscedasticity, being transformed if required. Where ANOVA reported a statistically significant effect of treatment, post-hoc testing was conducted by calculating one-tailed LSDs to allow treatments to be compared against the negative control for demonstration of efficacy.

Results

Phytotoxicity

There was no evidence of phytotoxic effects with any treatment

Two spotted spider mite - counts

The results for the mean numbers of two spotted spider mites on five assessment dates are presented in Table 1 and Figure 1 (adults), Table 2 and Figure 2 (juveniles), and Table 3 and Figure 3 (eggs). Results significantly different from the untreated control at $P < 0.05$ are highlighted by shading.

Table 1. Two spotted spider mite - mean numbers of adults per plot according to treatment on five assessment dates during the trial.

Date	29/09/2017		05/10/2017		09/10/2017		13/10/2017		17/10/2017	
Transformation	**Trans**	**Un-trans**	**Trans**	**Un-trans**	**Trans**	**Un-trans**	**Sqrt (x+0.5)**	**Back-trans**	**Log (x+1)**	**Back-trans**
Treatment										
Negative control	NA	94.17	NA	102.50	NA	78.67	7.68	60.00	1.91	84.83
Borneo	NA	88.00	NA	57.00	NA	27.67	2.68	7.33	0.34	2.67
AHDB9946	NA	89.33	NA	25.00	NA	8.33	1.71	2.67	0.10	0.33
AHDB9945	NA	70.00	NA	32.17	NA	14.17	1.97	3.67	0.46	3.00
AHDB9944	NA	84.67	NA	46.17	NA	22.33	2.78	8.50	0.36	2.67
Met52 OD	NA	70.50	NA	90.83	NA	46.17	4.01	15.83	0.95	12.83
AHDB9967	NA	70.83	NA	58.50	NA	30.17	3.57	14.17	1.27	21.50
F value	-	0.5	-	4.44	-	8.56	22.98	-	19.87	-
P -value	-	0.802	-	0.002	-	<0.000	<0.000	-	<0.000	-
d.f.	-	35	-	35	-	35	35	-	35	-
l.s.d.	-	-	-	32.57	-	19.35	1.01	-	0.34	-

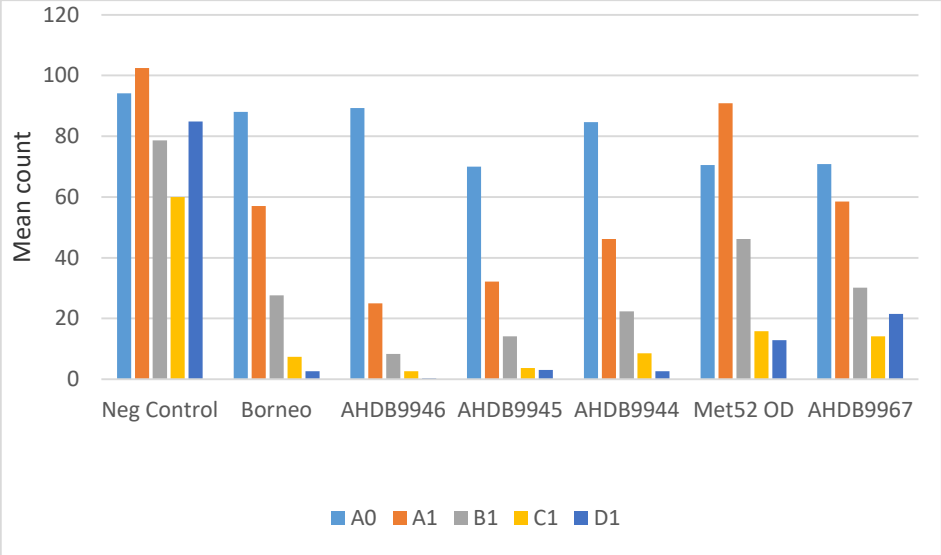


Figure 1. Two spotted spider mite – mean numbers of adults per plot according to treatment on five assessment dates during the trial.

Table 2. Two spotted spider mite – mean numbers of juveniles per plot according to treatment on five assessment dates during the trial.

Date	29/09/2017		05/10/2017		09/10/2017		13/10/2017		17/10/2017	
Transformation	**Sqrt (x+0.5)**	**Back-trans**	**Sqrt (x+0.5)**	**Back-trans**	**Sqrt (x+0.5)**	**Back-trans**	**Sqrt (x+0.5)**	**Back-trans**	**Sqrt (x+0.5)**	**Back-trans**
Treatment										
Negative control	10.04	101.50	12.17	157.17	11.46	137.67	12.52	159.83	15.39	237.67
Borneo	8.83	80.67	8.04	71.17	6.17	43.17	2.99	8.83	2.47	8.33
AHDB9946	10.12	107.17	8.62	97.17	3.95	25.50	3.02	20.50	1.25	1.67
AHDB9945	9.50	91.83	8.90	88.00	6.57	49.83	3.63	13.67	3.19	13.33
AHDB9944	8.90	87.83	8.52	78.67	6.13	39.50	4.77	24.17	3.01	17.50
Met52 OD	9.18	93.17	10.44	115.50	8.78	81.33	9.69	101.33	9.10	88.50
AHDB9967	8.05	73.00	8.18	69.00	8.42	72.67	9.57	103.50	9.12	90.00

F value	0.47	-	1.22	-	5.2	-	13.57	-	30.01	-
P -value	0.823	-	0.32	-	0.001	-	<0.000	-	<0.000	-
d.f.	35	-	35	-	35	-	35	-	35	-
l.s.d.	-	-	-	-	2.54	-	2.53	-	2.28	-

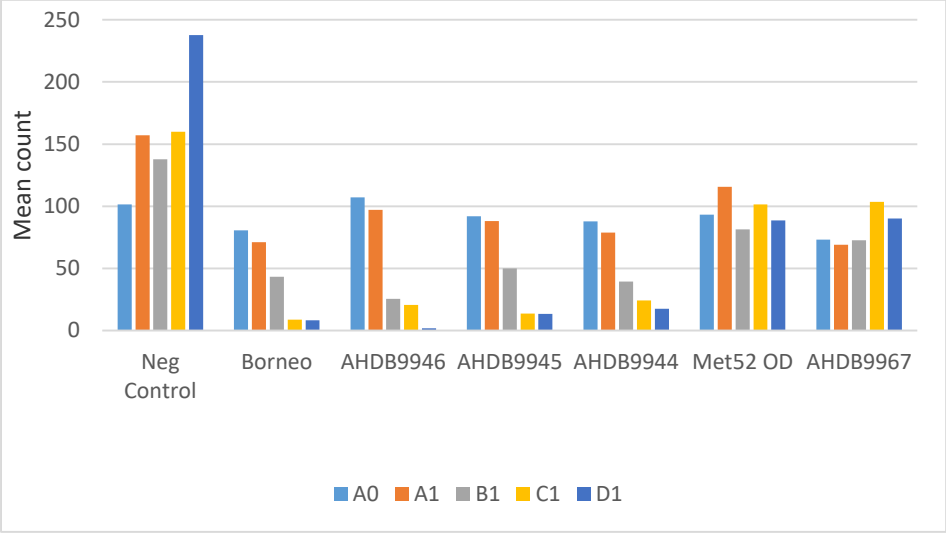


Figure 2. Two spotted spider mite – mean numbers of juveniles per plot according to treatment on five assessment dates during the trial.

Table 3. Two spotted spider mite – mean numbers of eggs per plot according to treatment on five assessment dates during the trial.

Date	29/09/2017		05/10/2017		09/10/2017		13/10/2017		17/10/2017	
Transformation	**Trans**	**Un-trans**	**Trans**	**Un-trans**	**Trans**	**Un-trans**	**Trans**	**Un-trans**	**Trans**	**Un-trans**
Treatment										
Negative control	NA	189.83	NA	414.67	NA	616.33	NA	642.50	NA	756.00
Borneo	NA	139.50	NA	310.33	NA	361.33	NA	291.17	NA	248.67
AHDB9946	NA	173.00	NA	249.67	NA	247.50	NA	156.17	NA	147.50
AHDB9945	NA	137.50	NA	267.67	NA	308.00	NA	210.17	NA	190.17
AHDB9944	NA	177.17	NA	298.00	NA	366.17	NA	262.50	NA	160.83
Met52 OD	NA	150.33	NA	456.00	NA	485.67	NA	383.50	NA	268.50
AHDB9967	NA	132.50	NA	344.33	NA	399.33	NA	328.33	NA	292.33
F value	-	0.85	-	2.82	-	4.42	-	7.37	-	17.66
P -value	-	0.537	-	0.024	-	0.002	-	<0.000	-	<0.000
d.f.	-	35	-	35	-	35	-	35	-	35
l.s.d.	-	-	-	108.54	-	137.98	-	139.57	-	119.76

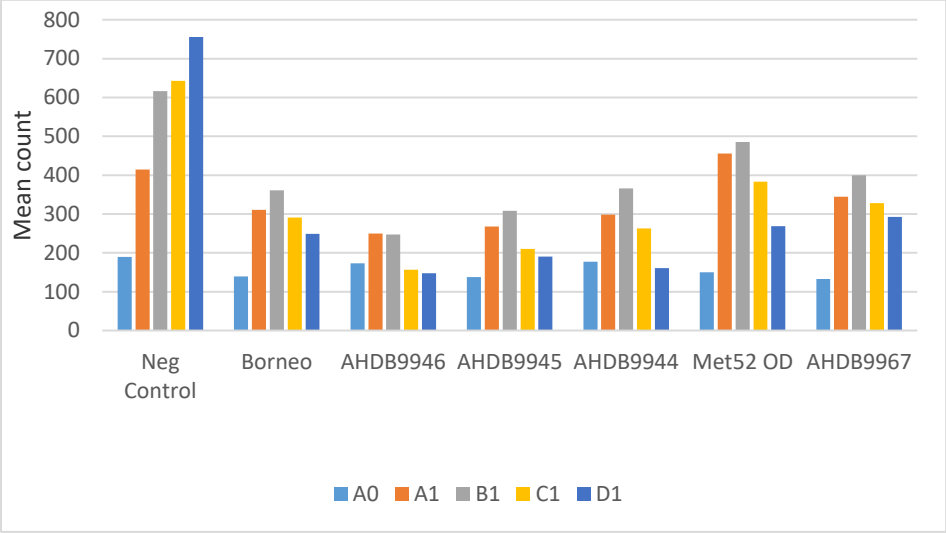


Figure 3. Two spotted spider mite – mean numbers of eggs per plot according to treatment on five assessment dates during the trial.

Two spotted spider mite – Percentage reduction in damage (Henderson-Tilton formula)

The Henderson-Tilton formula was used (see below) to calculate percentage efficacy based on mite counts and is presented in Tables 4 – 7. Percentage reduction in damage was calculated compared with the 29/09/17 (pre-spray) assessment and also compared with the previous assessment:

% efficacy = (1 – (number on control before spraying x number on treatment after spraying)/(number on control after spraying x number on treatment before spraying))

Table 4. Percentage reduction in numbers of two spotted spider mite on 5/10/17.

	Compared with 29/09 assessment			Compared with previous assessment		
Treatment	**Adults**	**Juveniles**	**Eggs**	**Adults**	**Juveniles**	**Eggs**
Borneo	40.49	43.02	-1.84	40.49	43.02	-1.84
AHDB9946	74.29	41.45	33.93	74.29	41.45	33.93
AHDB9945	57.78	38.11	10.88	57.78	38.11	10.88
AHDB9944	49.91	42.16	23.00	49.91	42.16	23.00
Met52 OD	-18.37	19.94	-38.86	-18.37	19.94	-3.89
AHDB9967	24.13	38.96	-18.97	24.13	38.96	-18.97

Table 5. Percentage reduction in numbers of two spotted spider mite on 9/10/17.

	Compared with 29/09 assessment			Compared with previous assessment		
Treatment	**Adults**	**Juveniles**	**Eggs**	**Adults**	**Juveniles**	**Eggs**
Borneo	62.37	60.55	20.22	36.76	30.75	21.66
AHDB9946	88.83	82.46	55.94	56.57	70.04	33.30
AHDB9945	75.77	59.99	31.01	42.62	35.35	22.58
AHDB9944	68.42	66.84	36.34	36.97	42.68	17.33
Met52 OD	21.61	35.64	0.50	33.78	19.61	28.34
AHDB9967	49.02	26.61	7.17	32.81	-20.23	21.97

Table 6. Percentage reduction in numbers of two spotted spider mite on 13/10/17.

	Compared with 29/09 assessment			Compared with previous assessment		
Treatment	**Adults**	**Juveniles**	**Eggs**	**Adults**	**Juveniles**	**Eggs**
Borneo	86.92	93.05	38.33	65.25	82.37	22.70
AHDB9946	95.32	87.85	73.33	58.04	30.76	39.47
AHDB9945	91.78	90.55	54.84	66.07	76.38	34.54
AHDB9944	84.24	82.53	56.22	50.10	47.30	31.23
Met52 OD	64.75	30.93	24.63	55.03	-7.31	24.25
AHDB9967	68.61	9.96	26.79	38.43	-22.68	21.13

Table 7. Percentage reduction in numbers of two spotted spider mite on 17/10/17.

	Compared with 29/09 assessment			Compared with previous assessment		
Treatment	**Adults**	**Juveniles**	**Eggs**	**Adults**	**Juveniles**	**Eggs**
Borneo	96.64	95.59	55.24	74.28	36.56	27.42
AHDB9946	99.59	99.34	78.59	91.16	94.53	19.73
AHDB9945	95.24	93.80	65.27	42.13	34.39	23.10
AHDB9944	96.50	91.49	77.20	77.81	51.30	47.93
Met52 OD	79.79	59.43	55.15	42.67	41.27	40.50
AHDB9967	66.31	47.35	44.60	-7.34	41.52	24.33

Discussion

The level of infestation by two-spotted spider mite was moderate throughout the trial, and for adult counts remained relatively constant post-infestation in the control treatment, with juvenile and egg counts increasing throughout the trial period. The industry standard, Borneo, performed as expected, reducing mite counts in accordance with its (delayed) mode of action.

All treatments, including the industry standard Borneo, significantly reduced the numbers of spider mite adults, juveniles and eggs compared with the untreated control ($p<0.05$). Conventional products (Borneo, AHDB9946, AHDB9945 and AHDB9944) delivered the highest levels of control, with >99% control of adults and juveniles achieved with the experimental product AHDB9946 by the final sampling date. Nevertheless, 'low risk' products (Met52 OD and AHDB9967) were also effective compared with the negative control, providing 80 and 66% reductions in numbers of adult mites, respectively, by the final sampling date.

All treatments mixed and sprayed well. No wetter was required. There were no phytotoxic effects.

Conclusions

- All products tested (Borneo, AHDB9946, AHDB9945, AHDB9944, Met52 OD and AHDB9967) caused statistically significant reductions in numbers of two spotted spider mite relative to the control treatment.
- By the final assessment date, all conventional products tested, including the industry standard, had reduced numbers of motile spider mites by >90%, with AHDB9946 reducing numbers of adults and juveniles by >99%, and with both 'low-risk' products reducing numbers by >65% over the same period.
- No treatments caused phytotoxic effects.

Acknowledgements

We would like to thank AHDB and the participating crop protection companies for project funding. The authors would also like to thank the SCEPTREplus consortium for input into trial design and product selection, as well as industry representatives (Derek Hargreaves, Richard Binks, Phil Morley and Ben Cruikshank) for useful discussion on selection of crop varieties and industry standards.

Appendix

a. Crop diary – events related to growing the crop

Date	Event
09-Aug-17	Tomato seed (var. Dometica) sown into rockwool blocks.
07-Sep-17	Crop transplanted into glasshouse (4 true leaf stage).
25-Sep-17	Crop strung and side-shoots removed.
05-Oct-17	Crop strung and side-shoots removed.
11-Oct-17	Crop strung and side-shoots removed.

b. Table showing sequence of events by date – this relates to treatments and assessments.

Date	Event
09-Aug-17	Crop sown.
26-Sep-17	Crop infested with two-spotted spider mite from stock culture.
29-Sep-17	Initial count (A0) and infestation leaf sections removed.
02-Oct-17	All sprays applied.
05-Oct-17	Spider mite counts (efficacy assessment) and phytotoxicity assessment.
06-Oct-17	Microbial spray applied, all other treatments sprayed with water.
09-Oct-17	Spider mite counts (efficacy assessment) and phytotoxicity assessment.
10-Oct-17	Microbial and botanical sprays applied, all other treatments sprayed with water.
13-Oct-17	Spider mite counts (efficacy assessment) and phytotoxicity assessment.
14-Oct-17	Microbial and conventional Treat. 6 only sprays applied, all other treatments sprayed with water.
17-Oct-17	Spider mite counts (efficacy assessment) and phytotoxicity assessment.

c. Trial photos (additional photos are available from AHDB, taken during trial visits)

Leaf damage and spider mites present at the start of the trial

d. Table showing climatological data during study period.

Day	August			September			October		
	Air min. (°C)	Air max. (°C)	RH (%)	Air min. (°C)	Air max. (°C)	RH (%)	Air min. (°C)	Air max. (°C)	RH (%)
1				9.7	29.9	72	19.6	23.6	88
2				10.3	26.7	70	19.1	24.3	80
3				12.2	21.5	77	19.5	25.1	79
4				14.0	23.6	84	19.3	20.6	83
5				14.1	26.7	84	18.9	25.3	78
6				12.9	24.2	77	19.5	25.5	78
7				13.0	23.7	82	19.5	20.5	85
8				15.8	24.5	82	19.6	26.7	84
9	12.7	23.1	81	15.5	23.4	82	19.4	25.6	88
10	10.3	31.9	73	15.7	22.1	82	19.5	23.5	86
11	11.2	25.7	80	15.7	24.1	78	19.3	21.6	85
12	14.6	28.7	85	15.8	23.1	77	19.4	24.1	82
13	11.2	31.1	73	15.5	23.2	75	19.8	25.1	83
14	14.3	26.6	81	15.7	24.1	78	19.6	26.4	81
15	13.4	30.5	73	14.7	22.7	81	19.6	26.1	81
16	11.0	28.8	69	13.3	23.7	81	19.1	22.5	80
17	15.3	33.0	74	12.1	24.7	84	18.9	22.4	76
18	13.5	26.6	79	13.4	23.7	83			
19	12.7	27.7	74	10.4	25.7	75			
20	12.5	27.6	77	12.4	25.9	79			
21	11.6	27.0	81	13.1	20.8	87			
22	17.5	27.1	87	9.3	25.5	78			
23	15.6	32.6	85	17.6	25.2	85			

24	12.7	26.0	81	17.6	25.5	82			
25	12.6	30.5	79	17.7	22.1	90			
26	14.4	29.2	79	19.6	24.9	89			
27	12.0	31.8	82	19.5	25.0	86			
28	15.7	32.8	100	19.7	27.5	84			
29	14.4	24.4	100	19.5	24.6	86			
30	12.6	24.8	100	19.3	25.9	84			
31	10.4	27.6	86						

e. Raw data from assessments

Date	Assess. code	Plot	Treatment	Replicate	Plant	N. adults	N. juveniles	N. eggs
29-Sep-17	a0	1.1	1	1	1	22	11	23
29-Sep-17	a0	1.1	1	1	2	12	39	20
29-Sep-17	a0	1.1	1	1	3	13	29	31
29-Sep-17	a0	1.1	1	1	4	15	21	18
29-Sep-17	a0	1.1	1	1	5	10	16	22
29-Sep-17	a0	1.2	1	2	1	30	10	34
29-Sep-17	a0	1.2	1	2	2	21	17	47
29-Sep-17	a0	1.2	1	2	3	25	6	38
29-Sep-17	a0	1.2	1	2	4	18	48	32
29-Sep-17	a0	1.2	1	2	5	14	19	42
29-Sep-17	a0	1.3	1	3	1	39	23	42
29-Sep-17	a0	1.3	1	3	2	16	19	17
29-Sep-17	a0	1.3	1	3	3	2	11	6
29-Sep-17	a0	1.3	1	3	4	22	42	38
29-Sep-17	a0	1.3	1	3	5	22	20	47
29-Sep-17	a0	1.4	1	4	1	26	38	67
29-Sep-17	a0	1.4	1	4	2	21	23	55
29-Sep-17	a0	1.4	1	4	3	46	39	97
29-Sep-17	a0	1.4	1	4	4	31	14	53
29-Sep-17	a0	1.4	1	4	5	18	5	42
29-Sep-17	a0	1.5	1	5	1	9	8	30
29-Sep-17	a0	1.5	1	5	2	3	3	5
29-Sep-17	a0	1.5	1	5	3	6	9	13
29-Sep-17	a0	1.5	1	5	4	15	17	49
29-Sep-17	a0	1.5	1	5	5	13	21	32
29-Sep-17	a0	1.6	1	6	1	19	59	58
29-Sep-17	a0	1.6	1	6	2	29	32	74
29-Sep-17	a0	1.6	1	6	3	17	5	25
29-Sep-17	a0	1.6	1	6	4	20	2	44
29-Sep-17	a0	1.6	1	6	5	11	3	38

29-Sep-17	a0	2.1	2	1	1	5	6	10
29-Sep-17	a0	2.1	2	1	2	10	12	17
29-Sep-17	a0	2.1	2	1	3	25	42	51
29-Sep-17	a0	2.1	2	1	4	26	29	32
29-Sep-17	a0	2.1	2	1	5	9	12	11
29-Sep-17	a0	2.2	2	2	1	102	22	47
29-Sep-17	a0	2.2	2	2	2	7	0	24
29-Sep-17	a0	2.2	2	2	3	43	3	29
29-Sep-17	a0	2.2	2	2	4	10	3	61
29-Sep-17	a0	2.2	2	2	5	18	3	9
29-Sep-17	a0	2.3	2	3	1	3	22	18
29-Sep-17	a0	2.3	2	3	2	17	18	31
29-Sep-17	a0	2.3	2	3	3	1	3	0
29-Sep-17	a0	2.3	2	3	4	5	12	13
29-Sep-17	a0	2.3	2	3	5	11	9	23
29-Sep-17	a0	2.4	2	4	1	33	26	63
29-Sep-17	a0	2.4	2	4	2	9	29	37
29-Sep-17	a0	2.4	2	4	3	6	41	9
29-Sep-17	a0	2.4	2	4	4	13	21	24
29-Sep-17	a0	2.4	2	4	5	25	14	83
29-Sep-17	a0	2.5	2	5	1	24	31	61
29-Sep-17	a0	2.5	2	5	2	15	17	29
29-Sep-17	a0	2.5	2	5	3	6	15	19
29-Sep-17	a0	2.5	2	5	4	12	13	19
29-Sep-17	a0	2.5	2	5	5	9	6	6
29-Sep-17	a0	2.6	2	6	1	23	19	20
29-Sep-17	a0	2.6	2	6	2	16	27	25
29-Sep-17	a0	2.6	2	6	3	20	18	15
29-Sep-17	a0	2.6	2	6	4	11	6	9
29-Sep-17	a0	2.6	2	6	5	14	5	42
29-Sep-17	a0	3.1	3	1	1	21	19	85
29-Sep-17	a0	3.1	3	1	2	12	3	40
29-Sep-17	a0	3.1	3	1	3	19	28	48
29-Sep-17	a0	3.1	3	1	4	16	23	68
29-Sep-17	a0	3.1	3	1	5	14	3	21
29-Sep-17	a0	3.2	3	2	1	52	12	60
29-Sep-17	a0	3.2	3	2	2	31	3	41
29-Sep-17	a0	3.2	3	2	3	24	14	38
29-Sep-17	a0	3.2	3	2	4	18	15	12
29-Sep-17	a0	3.2	3	2	5	5	0	6
29-Sep-17	a0	3.3	3	3	1	30	49	65
29-Sep-17	a0	3.3	3	3	2	12	16	32
29-Sep-17	a0	3.3	3	3	3	29	62	23
29-Sep-17	a0	3.3	3	3	4	5	9	8
29-Sep-17	a0	3.3	3	3	5	19	53	26
29-Sep-17	a0	3.4	3	4	1	12	11	28

29-Sep-17	a0	3.4	3	4	2	8	2	11
29-Sep-17	a0	3.4	3	4	3	25	38	31
29-Sep-17	a0	3.4	3	4	4	43	20	117
29-Sep-17	a0	3.4	3	4	5	11	48	7
29-Sep-17	a0	3.5	3	5	1	9	18	20
29-Sep-17	a0	3.5	3	5	2	3	9	7
29-Sep-17	a0	3.5	3	5	3	14	22	21
29-Sep-17	a0	3.5	3	5	4	8	16	17
29-Sep-17	a0	3.5	3	5	5	5	13	14
29-Sep-17	a0	3.6	3	6	1	13	14	13
29-Sep-17	a0	3.6	3	6	2	24	44	65
29-Sep-17	a0	3.6	3	6	3	12	7	32
29-Sep-17	a0	3.6	3	6	4	25	22	35
29-Sep-17	a0	3.6	3	6	5	17	50	47
29-Sep-17	a0	4.1	4	1	1	4	6	18
29-Sep-17	a0	4.1	4	1	2	9	5	35
29-Sep-17	a0	4.1	4	1	3	5	13	26
29-Sep-17	a0	4.1	4	1	4	6	16	9
29-Sep-17	a0	4.1	4	1	5	12	21	20
29-Sep-17	a0	4.2	4	2	1	28	24	38
29-Sep-17	a0	4.2	4	2	2	33	51	50
29-Sep-17	a0	4.2	4	2	3	12	4	31
29-Sep-17	a0	4.2	4	2	4	15	32	48
29-Sep-17	a0	4.2	4	2	5	9	12	17
29-Sep-17	a0	4.3	4	3	1	20	19	35
29-Sep-17	a0	4.3	4	3	2	8	12	21
29-Sep-17	a0	4.3	4	3	3	1	6	7
29-Sep-17	a0	4.3	4	3	4	8	14	15
29-Sep-17	a0	4.3	4	3	5	12	13	25
29-Sep-17	a0	4.4	4	4	1	16	4	11
29-Sep-17	a0	4.4	4	4	2	12	6	27
29-Sep-17	a0	4.4	4	4	3	20	5	10
29-Sep-17	a0	4.4	4	4	4	15	32	28
29-Sep-17	a0	4.4	4	4	5	22	34	51
29-Sep-17	a0	4.5	4	5	1	2	7	12
29-Sep-17	a0	4.5	4	5	2	19	22	10
29-Sep-17	a0	4.5	4	5	3	11	18	13
29-Sep-17	a0	4.5	4	5	4	5	3	22
29-Sep-17	a0	4.5	4	5	5	28	35	41
29-Sep-17	a0	4.6	4	6	1	38	71	105
29-Sep-17	a0	4.6	4	6	2	15	17	47
29-Sep-17	a0	4.6	4	6	3	12	17	25
29-Sep-17	a0	4.6	4	6	4	16	22	9
29-Sep-17	a0	4.6	4	6	5	7	10	19
29-Sep-17	a0	6.1	6	1	1	15	12	19
29-Sep-17	a0	6.1	6	1	2	3	7	10

29-Sep-17	a0	6.1	6	1	3	19	14	43
29-Sep-17	a0	6.1	6	1	4	7	18	28
29-Sep-17	a0	6.1	6	1	5	6	11	32
29-Sep-17	a0	6.2	6	2	1	38	105	28
29-Sep-17	a0	6.2	6	2	2	25	24	41
29-Sep-17	a0	6.2	6	2	3	12	30	16
29-Sep-17	a0	6.2	6	2	4	49	56	165
29-Sep-17	a0	6.2	6	2	5	22	19	37
29-Sep-17	a0	6.3	6	3	1	10	19	31
29-Sep-17	a0	6.3	6	3	2	5	9	10
29-Sep-17	a0	6.3	6	3	3	11	15	23
29-Sep-17	a0	6.3	6	3	4	10	12	26
29-Sep-17	a0	6.3	6	3	5	11	25	18
29-Sep-17	a0	6.4	6	4	1	9	14	58
29-Sep-17	a0	6.4	6	4	2	43	8	40
29-Sep-17	a0	6.4	6	4	3	25	8	43
29-Sep-17	a0	6.4	6	4	4	15	9	57
29-Sep-17	a0	6.4	6	4	5	34	4	64
29-Sep-17	a0	6.5	6	5	1	9	10	12
29-Sep-17	a0	6.5	6	5	2	1	5	3
29-Sep-17	a0	6.5	6	5	3	33	26	62
29-Sep-17	a0	6.5	6	5	4	4	12	11
29-Sep-17	a0	6.5	6	5	5	12	15	22
29-Sep-17	a0	6.6	6	6	1	11	7	26
29-Sep-17	a0	6.6	6	6	2	19	10	15
29-Sep-17	a0	6.6	6	6	3	15	7	36
29-Sep-17	a0	6.6	6	6	4	21	10	35
29-Sep-17	a0	6.6	6	6	5	14	6	52
29-Sep-17	a0	7.1	7	1	1	4	10	10
29-Sep-17	a0	7.1	7	1	2	18	32	53
29-Sep-17	a0	7.1	7	1	3	3	11	9
29-Sep-17	a0	7.1	7	1	4	2	8	12
29-Sep-17	a0	7.1	7	1	5	15	7	49
29-Sep-17	a0	7.2	7	2	1	35	42	45
29-Sep-17	a0	7.2	7	2	2	9	12	11
29-Sep-17	a0	7.2	7	2	3	16	26	40
29-Sep-17	a0	7.2	7	2	4	16	8	53
29-Sep-17	a0	7.2	7	2	5	5	5	7
29-Sep-17	a0	7.3	7	3	1	4	13	18
29-Sep-17	a0	7.3	7	3	2	8	11	21
29-Sep-17	a0	7.3	7	3	3	5	12	15
29-Sep-17	a0	7.3	7	3	4	15	16	19
29-Sep-17	a0	7.3	7	3	5	21	25	45
29-Sep-17	a0	7.4	7	4	1	8	63	11
29-Sep-17	a0	7.4	7	4	2	17	25	30
29-Sep-17	a0	7.4	7	4	3	7	7	22

29-Sep-17	a0	7.4	7	4	4	12	44	16
29-Sep-17	a0	7.4	7	4	5	24	72	31
29-Sep-17	a0	7.5	7	5	1	8	5	21
29-Sep-17	a0	7.5	7	5	2	12	12	38
29-Sep-17	a0	7.5	7	5	3	10	25	27
29-Sep-17	a0	7.5	7	5	4	13	28	14
29-Sep-17	a0	7.5	7	5	5	31	24	75
29-Sep-17	a0	7.6	7	6	1	14	0	39
29-Sep-17	a0	7.6	7	6	2	13	0	45
29-Sep-17	a0	7.6	7	6	3	30	0	25
29-Sep-17	a0	7.6	7	6	4	20	3	62
29-Sep-17	a0	7.6	7	6	5	28	13	39
29-Sep-17	a0	8.1	8	1	1	8	11	9
29-Sep-17	a0	8.1	8	1	2	3	7	12
29-Sep-17	a0	8.1	8	1	3	5	12	12
29-Sep-17	a0	8.1	8	1	4	11	34	48
29-Sep-17	a0	8.1	8	1	5	4	9	15
29-Sep-17	a0	8.2	8	2	1	18	3	25
29-Sep-17	a0	8.2	8	2	2	26	1	10
29-Sep-17	a0	8.2	8	2	3	32	2	42
29-Sep-17	a0	8.2	8	2	4	36	2	35
29-Sep-17	a0	8.2	8	2	5	27	3	54
29-Sep-17	a0	8.3	8	3	1	8	19	21
29-Sep-17	a0	8.3	8	3	2	45	73	131
29-Sep-17	a0	8.3	8	3	3	5	10	13
29-Sep-17	a0	8.3	8	3	4	26	49	62
29-Sep-17	a0	8.3	8	3	5	3	31	11
29-Sep-17	a0	8.4	8	4	1	12	21	19
29-Sep-17	a0	8.4	8	4	2	9	7	32
29-Sep-17	a0	8.4	8	4	3	5	11	17
29-Sep-17	a0	8.4	8	4	4	19	4	24
29-Sep-17	a0	8.4	8	4	5	11	16	25
29-Sep-17	a0	8.5	8	5	1	5	14	10
29-Sep-17	a0	8.5	8	5	2	7	6	13
29-Sep-17	a0	8.5	8	5	3	2	8	9
29-Sep-17	a0	8.5	8	5	4	4	10	12
29-Sep-17	a0	8.5	8	5	5	8	16	15
29-Sep-17	a0	8.6	8	6	1	13	12	5
29-Sep-17	a0	8.6	8	6	2	12	28	21
29-Sep-17	a0	8.6	8	6	3	13	5	22
29-Sep-17	a0	8.6	8	6	4	17	5	15
29-Sep-17	a0	8.6	8	6	5	31	9	56
05-Oct-17	a1	1.1	1	1	1	39	87	49
05-Oct-17	a1	1.1	1	1	2	24	92	75
05-Oct-17	a1	1.1	1	1	3	36	45	136
05-Oct-17	a1	1.1	1	1	4	38	94	97

05-Oct-17	a1	1.1	1	1	5	12	22	54
05-Oct-17	a1	1.2	1	2	1	31	40	95
05-Oct-17	a1	1.2	1	2	2	20	18	87
05-Oct-17	a1	1.2	1	2	3	16	33	72
05-Oct-17	a1	1.2	1	2	4	13	15	54
05-Oct-17	a1	1.2	1	2	5	17	25	62
05-Oct-17	a1	1.3	1	3	1	39	31	118
05-Oct-17	a1	1.3	1	3	2	27	16	105
05-Oct-17	a1	1.3	1	3	3	9	5	45
05-Oct-17	a1	1.3	1	3	4	17	21	74
05-Oct-17	a1	1.3	1	3	5	22	18	51
05-Oct-17	a1	1.4	1	4	1	31	27	65
05-Oct-17	a1	1.4	1	4	2	15	3	92
05-Oct-17	a1	1.4	1	4	3	32	35	98
05-Oct-17	a1	1.4	1	4	4	43	16	129
05-Oct-17	a1	1.4	1	4	5	28	49	116
05-Oct-17	a1	1.5	1	5	1	12	9	41
05-Oct-17	a1	1.5	1	5	2	7	21	84
05-Oct-17	a1	1.5	1	5	3	15	12	73
05-Oct-17	a1	1.5	1	5	4	8	32	16
05-Oct-17	a1	1.5	1	5	5	7	10	95
05-Oct-17	a1	1.6	1	6	1	12	53	113
05-Oct-17	a1	1.6	1	6	2	16	66	105
05-Oct-17	a1	1.6	1	6	3	6	22	87
05-Oct-17	a1	1.6	1	6	4	13	12	27
05-Oct-17	a1	1.6	1	6	5	10	14	173
05-Oct-17	a1	2.1	2	1	1	3	3	42
05-Oct-17	a1	2.1	2	1	2	9	12	38
05-Oct-17	a1	2.1	2	1	3	12	56	19
05-Oct-17	a1	2.1	2	1	4	10	6	45
05-Oct-17	a1	2.1	2	1	5	2	8	23
05-Oct-17	a1	2.2	2	2	1	24	44	126
05-Oct-17	a1	2.2	2	2	2	2	3	51
05-Oct-17	a1	2.2	2	2	3	27	9	221
05-Oct-17	a1	2.2	2	2	4	4	3	56
05-Oct-17	a1	2.2	2	2	5	10	5	93
05-Oct-17	a1	2.3	2	3	1	7	1	13
05-Oct-17	a1	2.3	2	3	2	6	4	35
05-Oct-17	a1	2.3	2	3	3	1	0	4
05-Oct-17	a1	2.3	2	3	4	3	0	29
05-Oct-17	a1	2.3	2	3	5	5	2	32
05-Oct-17	a1	2.4	2	4	1	18	22	98
05-Oct-17	a1	2.4	2	4	2	34	14	102
05-Oct-17	a1	2.4	2	4	3	4	9	24
05-Oct-17	a1	2.4	2	4	4	12	25	62
05-Oct-17	a1	2.4	2	4	5	15	39	44

05-Oct-17	a1	2.5	2	5	1	2	23	42
05-Oct-17	a1	2.5	2	5	2	26	1	110
05-Oct-17	a1	2.5	2	5	3	4	15	29
05-Oct-17	a1	2.5	2	5	4	18	10	55
05-Oct-17	a1	2.5	2	5	5	2	4	26
05-Oct-17	a1	2.6	2	6	1	9	4	102
05-Oct-17	a1	2.6	2	6	2	6	10	95
05-Oct-17	a1	2.6	2	6	3	12	51	82
05-Oct-17	a1	2.6	2	6	4	19	32	91
05-Oct-17	a1	2.6	2	6	5	36	12	73
05-Oct-17	a1	3.1	3	1	1	18	35	26
05-Oct-17	a1	3.1	3	1	2	2	5	23
05-Oct-17	a1	3.1	3	1	3	12	10	71
05-Oct-17	a1	3.1	3	1	4	1	47	42
05-Oct-17	a1	3.1	3	1	5	4	46	36
05-Oct-17	a1	3.2	3	2	1	5	9	118
05-Oct-17	a1	3.2	3	2	2	1	20	28
05-Oct-17	a1	3.2	3	2	3	4	6	68
05-Oct-17	a1	3.2	3	2	4	2	12	91
05-Oct-17	a1	3.2	3	2	5	1	0	20
05-Oct-17	a1	3.3	3	3	1	23	21	146
05-Oct-17	a1	3.3	3	3	2	9	24	73
05-Oct-17	a1	3.3	3	3	3	0	136	15
05-Oct-17	a1	3.3	3	3	4	12	14	22
05-Oct-17	a1	3.3	3	3	5	2	86	43
05-Oct-17	a1	3.4	3	4	1	0	0	43
05-Oct-17	a1	3.4	3	4	2	0	0	22
05-Oct-17	a1	3.4	3	4	3	0	0	79
05-Oct-17	a1	3.4	3	4	4	10	7	106
05-Oct-17	a1	3.4	3	4	5	1	5	12
05-Oct-17	a1	3.5	3	5	1	3	26	59
05-Oct-17	a1	3.5	3	5	2	4	32	35
05-Oct-17	a1	3.5	3	5	3	2	12	41
05-Oct-17	a1	3.5	3	5	4	11	12	48
05-Oct-17	a1	3.5	3	5	5	10	10	22
05-Oct-17	a1	3.6	3	6	1	7	4	68
05-Oct-17	a1	3.6	3	6	2	0	0	30
05-Oct-17	a1	3.6	3	6	3	6	4	44
05-Oct-17	a1	3.6	3	6	4	0	0	21
05-Oct-17	a1	3.6	3	6	5	0	0	46
05-Oct-17	a1	4.1	4	1	1	5	17	42
05-Oct-17	a1	4.1	4	1	2	7	23	72
05-Oct-17	a1	4.1	4	1	3	0	16	12
05-Oct-17	a1	4.1	4	1	4	4	9	22
05-Oct-17	a1	4.1	4	1	5	3	14	19
05-Oct-17	a1	4.2	4	2	1	12	19	26

05-Oct-17	a1	4.2	4	2	2	31	62	101
05-Oct-17	a1	4.2	4	2	3	2	2	71
05-Oct-17	a1	4.2	4	2	4	12	25	33
05-Oct-17	a1	4.2	4	2	5	12	10	26
05-Oct-17	a1	4.3	4	3	1	2	10	16
05-Oct-17	a1	4.3	4	3	2	6	9	44
05-Oct-17	a1	4.3	4	3	3	1	4	9
05-Oct-17	a1	4.3	4	3	4	5	17	21
05-Oct-17	a1	4.3	4	3	5	9	18	48
05-Oct-17	a1	4.4	4	4	1	2	7	98
05-Oct-17	a1	4.4	4	4	2	2	0	84
05-Oct-17	a1	4.4	4	4	3	7	5	82
05-Oct-17	a1	4.4	4	4	4	3	67	48
05-Oct-17	a1	4.4	4	4	5	4	4	140
05-Oct-17	a1	4.5	4	5	1	5	10	28
05-Oct-17	a1	4.5	4	5	2	12	26	33
05-Oct-17	a1	4.5	4	5	3	13	32	68
05-Oct-17	a1	4.5	4	5	4	6	18	25
05-Oct-17	a1	4.5	4	5	5	14	93	87
05-Oct-17	a1	4.6	4	6	1	0	0	92
05-Oct-17	a1	4.6	4	6	2	0	0	72
05-Oct-17	a1	4.6	4	6	3	8	6	32
05-Oct-17	a1	4.6	4	6	4	5	4	100
05-Oct-17	a1	4.6	4	6	5	1	1	55
05-Oct-17	a1	6.1	6	1	1	3	37	65
05-Oct-17	a1	6.1	6	1	2	7	21	46
05-Oct-17	a1	6.1	6	1	3	11	13	108
05-Oct-17	a1	6.1	6	1	4	1	2	6
05-Oct-17	a1	6.1	6	1	5	10	51	72
05-Oct-17	a1	6.2	6	2	1	46	49	81
05-Oct-17	a1	6.2	6	2	2	21	11	66
05-Oct-17	a1	6.2	6	2	3	4	9	31
05-Oct-17	a1	6.2	6	2	4	12	42	98
05-Oct-17	a1	6.2	6	2	5	10	16	75
05-Oct-17	a1	6.3	6	3	1	2	3	13
05-Oct-17	a1	6.3	6	3	2	1	11	5
05-Oct-17	a1	6.3	6	3	3	12	16	45
05-Oct-17	a1	6.3	6	3	4	11	26	53
05-Oct-17	a1	6.3	6	3	5	2	21	29
05-Oct-17	a1	6.4	6	4	1	2	6	52
05-Oct-17	a1	6.4	6	4	2	13	9	74
05-Oct-17	a1	6.4	6	4	3	7	14	55
05-Oct-17	a1	6.4	6	4	4	14	24	111
05-Oct-17	a1	6.4	6	4	5	0	3	89
05-Oct-17	a1	6.5	6	5	1	3	9	14
05-Oct-17	a1	6.5	6	5	2	18	12	109

05-Oct-17	a1	6.5	6	5	3	6	21	42
05-Oct-17	a1	6.5	6	5	4	10	14	56
05-Oct-17	a1	6.5	6	5	5	5	19	62
05-Oct-17	a1	6.6	6	6	1	7	2	102
05-Oct-17	a1	6.6	6	6	2	8	6	32
05-Oct-17	a1	6.6	6	6	3	11	4	113
05-Oct-17	a1	6.6	6	6	4	9	0	47
05-Oct-17	a1	6.6	6	6	5	11	1	37
05-Oct-17	a1	7.1	7	1	1	6	17	51
05-Oct-17	a1	7.1	7	1	2	32	102	93
05-Oct-17	a1	7.1	7	1	3	6	28	19
05-Oct-17	a1	7.1	7	1	4	1	5	40
05-Oct-17	a1	7.1	7	1	5	3	15	22
05-Oct-17	a1	7.2	7	2	1	4	22	133
05-Oct-17	a1	7.2	7	2	2	2	6	51
05-Oct-17	a1	7.2	7	2	3	7	13	154
05-Oct-17	a1	7.2	7	2	4	0	0	46
05-Oct-17	a1	7.2	7	2	5	1	0	32
05-Oct-17	a1	7.3	7	3	1	9	18	105
05-Oct-17	a1	7.3	7	3	2	22	42	118
05-Oct-17	a1	7.3	7	3	3	8	26	170
05-Oct-17	a1	7.3	7	3	4	35	12	141
05-Oct-17	a1	7.3	7	3	5	32	30	119
05-Oct-17	a1	7.4	7	4	1	42	16	139
05-Oct-17	a1	7.4	7	4	2	38	21	125
05-Oct-17	a1	7.4	7	4	3	22	31	91
05-Oct-17	a1	7.4	7	4	4	36	18	102
05-Oct-17	a1	7.4	7	4	5	22	85	79
05-Oct-17	a1	7.5	7	5	1	18	12	63
05-Oct-17	a1	7.5	7	5	2	19	27	40
05-Oct-17	a1	7.5	7	5	3	26	29	51
05-Oct-17	a1	7.5	7	5	4	21	14	96
05-Oct-17	a1	7.5	7	5	5	43	52	135
05-Oct-17	a1	7.6	7	6	1	7	14	46
05-Oct-17	a1	7.6	7	6	2	10	2	77
05-Oct-17	a1	7.6	7	6	3	13	8	110
05-Oct-17	a1	7.6	7	6	4	6	2	48
05-Oct-17	a1	7.6	7	6	5	54	26	240
05-Oct-17	a1	8.1	8	1	1	6	14	42
05-Oct-17	a1	8.1	8	1	2	8	12	63
05-Oct-17	a1	8.1	8	1	3	14	8	39
05-Oct-17	a1	8.1	8	1	4	10	31	45
05-Oct-17	a1	8.1	8	1	5	11	16	31
05-Oct-17	a1	8.2	8	2	1	2	13	82
05-Oct-17	a1	8.2	8	2	2	26	16	178
05-Oct-17	a1	8.2	8	2	3	6	5	62

05-Oct-17	a1	8.2	8	2	4	7	4	50
05-Oct-17	a1	8.2	8	2	5	5	9	82
05-Oct-17	a1	8.3	8	3	1	36	4	103
05-Oct-17	a1	8.3	8	3	2	41	47	112
05-Oct-17	a1	8.3	8	3	3	4	2	74
05-Oct-17	a1	8.3	8	3	4	27	18	65
05-Oct-17	a1	8.3	8	3	5	1	41	30
05-Oct-17	a1	8.4	8	4	1	18	12	132
05-Oct-17	a1	8.4	8	4	2	2	3	14
05-Oct-17	a1	8.4	8	4	3	2	6	25
05-Oct-17	a1	8.4	8	4	4	8	3	93
05-Oct-17	a1	8.4	8	4	5	8	8	134
05-Oct-17	a1	8.5	8	5	1	3	23	81
05-Oct-17	a1	8.5	8	5	2	5	7	52
05-Oct-17	a1	8.5	8	5	3	2	13	39
05-Oct-17	a1	8.5	8	5	4	1	6	5
05-Oct-17	a1	8.5	8	5	5	6	12	72
05-Oct-17	a1	8.6	8	6	1	31	46	103
05-Oct-17	a1	8.6	8	6	2	16	9	98
05-Oct-17	a1	8.6	8	6	3	7	2	31
05-Oct-17	a1	8.6	8	6	4	36	6	109
05-Oct-17	a1	8.6	8	6	5	2	18	20
09-Oct-17	b1	1.1	1	1	1	15	27	103
09-Oct-17	b1	1.1	1	1	2	38	52	141
09-Oct-17	b1	1.1	1	1	3	33	73	218
09-Oct-17	b1	1.1	1	1	4	29	68	162
09-Oct-17	b1	1.1	1	1	5	18	32	101
09-Oct-17	b1	1.2	1	2	1	14	27	135
09-Oct-17	b1	1.2	1	2	2	16	13	109
09-Oct-17	b1	1.2	1	2	3	2	21	94
09-Oct-17	b1	1.2	1	2	4	11	26	100
09-Oct-17	b1	1.2	1	2	5	5	33	78
09-Oct-17	b1	1.3	1	3	1	26	45	113
09-Oct-17	b1	1.3	1	3	2	12	39	127
09-Oct-17	b1	1.3	1	3	3	12	20	75
09-Oct-17	b1	1.3	1	3	4	19	16	122
09-Oct-17	b1	1.3	1	3	5	10	26	116
09-Oct-17	b1	1.4	1	4	1	24	12	114
09-Oct-17	b1	1.4	1	4	2	5	26	63
09-Oct-17	b1	1.4	1	4	3	31	57	203
09-Oct-17	b1	1.4	1	4	4	19	18	211
09-Oct-17	b1	1.4	1	4	5	12	39	141
09-Oct-17	b1	1.5	1	5	1	2	2	19
09-Oct-17	b1	1.5	1	5	2	9	15	123
09-Oct-17	b1	1.5	1	5	3	12	9	92
09-Oct-17	b1	1.5	1	5	4	5	14	116

09-Oct-17	b1	1.5	1	5	5	7	10	98
09-Oct-17	b1	1.6	1	6	1	15	37	90
09-Oct-17	b1	1.6	1	6	2	47	36	230
09-Oct-17	b1	1.6	1	6	3	6	11	47
09-Oct-17	b1	1.6	1	6	4	11	12	137
09-Oct-17	b1	1.6	1	6	5	7	10	220
09-Oct-17	b1	2.1	2	1	1	4	3	67
09-Oct-17	b1	2.1	2	1	2	13	6	72
09-Oct-17	b1	2.1	2	1	3	2	59	113
09-Oct-17	b1	2.1	2	1	4	5	27	51
09-Oct-17	b1	2.1	2	1	5	1	4	42
09-Oct-17	b1	2.2	2	2	1	17	7	230
09-Oct-17	b1	2.2	2	2	2	4	0	58
09-Oct-17	b1	2.2	2	2	3	3	4	135
09-Oct-17	b1	2.2	2	2	4	0	0	96
09-Oct-17	b1	2.2	2	2	5	7	6	108
09-Oct-17	b1	2.3	2	3	1	0	3	22
09-Oct-17	b1	2.3	2	3	2	1	3	59
09-Oct-17	b1	2.3	2	3	3	0	2	8
09-Oct-17	b1	2.3	2	3	4	2	8	61
09-Oct-17	b1	2.3	2	3	5	1	2	68
09-Oct-17	b1	2.4	2	4	1	5	14	48
09-Oct-17	b1	2.4	2	4	2	4	8	61
09-Oct-17	b1	2.4	2	4	3	4	1	52
09-Oct-17	b1	2.4	2	4	4	7	21	75
09-Oct-17	b1	2.4	2	4	5	4	2	41
09-Oct-17	b1	2.5	2	5	1	1	2	21
09-Oct-17	b1	2.5	2	5	2	19	5	184
09-Oct-17	b1	2.5	2	5	3	6	2	56
09-Oct-17	b1	2.5	2	5	4	11	3	102
09-Oct-17	b1	2.5	2	5	5	0	0	20
09-Oct-17	b1	2.6	2	6	1	2	3	26
09-Oct-17	b1	2.6	2	6	2	5	1	53
09-Oct-17	b1	2.6	2	6	3	14	15	49
09-Oct-17	b1	2.6	2	6	4	10	26	61
09-Oct-17	b1	2.6	2	6	5	14	22	129
09-Oct-17	b1	3.1	3	1	1	8	10	41
09-Oct-17	b1	3.1	3	1	2	0	6	36
09-Oct-17	b1	3.1	3	1	3	12	3	52
09-Oct-17	b1	3.1	3	1	4	3	12	31
09-Oct-17	b1	3.1	3	1	5	1	5	45
09-Oct-17	b1	3.2	3	2	1	0	0	82
09-Oct-17	b1	3.2	3	2	2	0	0	72
09-Oct-17	b1	3.2	3	2	3	0	0	53
09-Oct-17	b1	3.2	3	2	4	0	0	70
09-Oct-17	b1	3.2	3	2	5	0	0	22

09-Oct-17	b1	3.3	3	3	1	12	13	86
09-Oct-17	b1	3.3	3	3	2	3	10	34
09-Oct-17	b1	3.3	3	3	3	0	4	15
09-Oct-17	b1	3.3	3	3	4	1	7	20
09-Oct-17	b1	3.3	3	3	5	1	46	52
09-Oct-17	b1	3.4	3	4	1	0	0	65
09-Oct-17	b1	3.4	3	4	2	0	0	21
09-Oct-17	b1	3.4	3	4	3	0	1	40
09-Oct-17	b1	3.4	3	4	4	0	0	122
09-Oct-17	b1	3.4	3	4	5	0	0	61
09-Oct-17	b1	3.5	3	5	1	1	6	28
09-Oct-17	b1	3.5	3	5	2	3	8	33
09-Oct-17	b1	3.5	3	5	3	0	7	24
09-Oct-17	b1	3.5	3	5	4	1	11	49
09-Oct-17	b1	3.5	3	5	5	4	4	36
09-Oct-17	b1	3.6	3	6	1	0	0	29
09-Oct-17	b1	3.6	3	6	2	0	0	40
09-Oct-17	b1	3.6	3	6	3	0	0	86
09-Oct-17	b1	3.6	3	6	4	0	0	61
09-Oct-17	b1	3.6	3	6	5	0	0	79
09-Oct-17	b1	4.1	4	1	1	1	10	54
09-Oct-17	b1	4.1	4	1	2	5	8	81
09-Oct-17	b1	4.1	4	1	3	0	4	32
09-Oct-17	b1	4.1	4	1	4	0	2	16
09-Oct-17	b1	4.1	4	1	5	2	9	21
09-Oct-17	b1	4.2	4	2	1	2	15	31
09-Oct-17	b1	4.2	4	2	2	3	46	95
09-Oct-17	b1	4.2	4	2	3	2	16	37
09-Oct-17	b1	4.2	4	2	4	5	19	41
09-Oct-17	b1	4.2	4	2	5	2	10	28
09-Oct-17	b1	4.3	4	3	1	0	3	12
09-Oct-17	b1	4.3	4	3	2	2	7	18
09-Oct-17	b1	4.3	4	3	3	1	4	9
09-Oct-17	b1	4.3	4	3	4	5	6	13
09-Oct-17	b1	4.3	4	3	5	8	9	82
09-Oct-17	b1	4.4	4	4	1	2	6	82
09-Oct-17	b1	4.4	4	4	2	0	0	74
09-Oct-17	b1	4.4	4	4	3	0	2	120
09-Oct-17	b1	4.4	4	4	4	0	1	24
09-Oct-17	b1	4.4	4	4	5	1	2	160
09-Oct-17	b1	4.5	4	5	1	2	4	37
09-Oct-17	b1	4.5	4	5	2	11	12	56
09-Oct-17	b1	4.5	4	5	3	9	16	73
09-Oct-17	b1	4.5	4	5	4	1	10	49
09-Oct-17	b1	4.5	4	5	5	14	59	156
09-Oct-17	b1	4.6	4	6	1	2	2	142

09-Oct-17	b1	4.6	4	6	2	1	3	112
09-Oct-17	b1	4.6	4	6	3	0	0	47
09-Oct-17	b1	4.6	4	6	4	1	2	95
09-Oct-17	b1	4.6	4	6	5	3	12	51
09-Oct-17	b1	6.1	6	1	1	5	3	63
09-Oct-17	b1	6.1	6	1	2	12	8	57
09-Oct-17	b1	6.1	6	1	3	7	5	52
09-Oct-17	b1	6.1	6	1	4	1	3	17
09-Oct-17	b1	6.1	6	1	5	1	15	19
09-Oct-17	b1	6.2	6	2	1	20	8	84
09-Oct-17	b1	6.2	6	2	2	9	13	91
09-Oct-17	b1	6.2	6	2	3	3	11	55
09-Oct-17	b1	6.2	6	2	4	12	5	64
09-Oct-17	b1	6.2	6	2	5	10	8	44
09-Oct-17	b1	6.3	6	3	1	8	5	41
09-Oct-17	b1	6.3	6	3	2	0	6	19
09-Oct-17	b1	6.3	6	3	3	2	6	32
09-Oct-17	b1	6.3	6	3	4	5	4	14
09-Oct-17	b1	6.3	6	3	5	4	11	36
09-Oct-17	b1	6.4	6	4	1	0	2	69
09-Oct-17	b1	6.4	6	4	2	0	12	104
09-Oct-17	b1	6.4	6	4	3	0	2	117
09-Oct-17	b1	6.4	6	4	4	10	9	190
09-Oct-17	b1	6.4	6	4	5	3	1	131
09-Oct-17	b1	6.5	6	5	1	1	29	104
09-Oct-17	b1	6.5	6	5	2	1	14	22
09-Oct-17	b1	6.5	6	5	3	6	18	82
09-Oct-17	b1	6.5	6	5	4	5	12	61
09-Oct-17	b1	6.5	6	5	5	7	10	53
09-Oct-17	b1	6.6	6	6	1	2	3	170
09-Oct-17	b1	6.6	6	6	2	0	7	132
09-Oct-17	b1	6.6	6	6	3	0	3	122
09-Oct-17	b1	6.6	6	6	4	0	4	85
09-Oct-17	b1	6.6	6	6	5	0	0	67
09-Oct-17	b1	7.1	7	1	1	5	9	61
09-Oct-17	b1	7.1	7	1	2	9	21	131
09-Oct-17	b1	7.1	7	1	3	13	18	77
09-Oct-17	b1	7.1	7	1	4	0	4	42
09-Oct-17	b1	7.1	7	1	5	5	12	58
09-Oct-17	b1	7.2	7	2	1	4	18	119
09-Oct-17	b1	7.2	7	2	2	2	3	19
09-Oct-17	b1	7.2	7	2	3	5	8	61
09-Oct-17	b1	7.2	7	2	4	0	4	46
09-Oct-17	b1	7.2	7	2	5	2	3	19
09-Oct-17	b1	7.3	7	3	1	1	6	38
09-Oct-17	b1	7.3	7	3	2	11	24	97

09-Oct-17	b1	7.3	7	3	3	6	14	81
09-Oct-17	b1	7.3	7	3	4	13	17	146
09-Oct-17	b1	7.3	7	3	5	15	3	129
09-Oct-17	b1	7.4	7	4	1	9	35	186
09-Oct-17	b1	7.4	7	4	2	14	23	115
09-Oct-17	b1	7.4	7	4	3	3	16	96
09-Oct-17	b1	7.4	7	4	4	21	19	103
09-Oct-17	b1	7.4	7	4	5	29	42	120
09-Oct-17	b1	7.5	7	5	1	10	19	62
09-Oct-17	b1	7.5	7	5	2	12	28	75
09-Oct-17	b1	7.5	7	5	3	0	41	112
09-Oct-17	b1	7.5	7	5	4	1	14	91
09-Oct-17	b1	7.5	7	5	5	25	36	125
09-Oct-17	b1	7.6	7	6	1	2	8	112
09-Oct-17	b1	7.6	7	6	2	4	6	95
09-Oct-17	b1	7.6	7	6	3	11	12	108
09-Oct-17	b1	7.6	7	6	4	7	9	120
09-Oct-17	b1	7.6	7	6	5	38	16	270
09-Oct-17	b1	8.1	8	1	1	1	0	96
09-Oct-17	b1	8.1	8	1	2	1	9	44
09-Oct-17	b1	8.1	8	1	3	6	4	35
09-Oct-17	b1	8.1	8	1	4	10	18	108
09-Oct-17	b1	8.1	8	1	5	4	27	112
09-Oct-17	b1	8.2	8	2	1	2	8	97
09-Oct-17	b1	8.2	8	2	2	1	7	47
09-Oct-17	b1	8.2	8	2	3	1	0	16
09-Oct-17	b1	8.2	8	2	4	2	6	98
09-Oct-17	b1	8.2	8	2	5	7	13	90
09-Oct-17	b1	8.3	8	3	1	20	16	98
09-Oct-17	b1	8.3	8	3	2	2	32	157
09-Oct-17	b1	8.3	8	3	3	6	15	120
09-Oct-17	b1	8.3	8	3	4	10	13	81
09-Oct-17	b1	8.3	8	3	5	1	31	86
09-Oct-17	b1	8.4	8	4	1	25	6	133
09-Oct-17	b1	8.4	8	4	2	1	25	53
09-Oct-17	b1	8.4	8	4	3	0	12	18
09-Oct-17	b1	8.4	8	4	4	3	8	68
09-Oct-17	b1	8.4	8	4	5	7	11	141
09-Oct-17	b1	8.5	8	5	1	6	13	52
09-Oct-17	b1	8.5	8	5	2	1	22	35
09-Oct-17	b1	8.5	8	5	3	2	17	21
09-Oct-17	b1	8.5	8	5	4	1	16	28
09-Oct-17	b1	8.5	8	5	5	3	10	27
09-Oct-17	b1	8.6	8	6	1	8	12	106
09-Oct-17	b1	8.6	8	6	2	5	16	97
09-Oct-17	b1	8.6	8	6	3	13	24	95

09-Oct-17	b1	8.6	8	6	4	20	35	164
09-Oct-17	b1	8.6	8	6	5	12	10	73
13-Oct-17	c1	1.1	1	1	1	16	52	145
13-Oct-17	c1	1.1	1	1	2	12	64	183
13-Oct-17	c1	1.1	1	1	3	32	17	209
13-Oct-17	c1	1.1	1	1	4	10	12	154
13-Oct-17	c1	1.1	1	1	5	7	28	102
13-Oct-17	c1	1.2	1	2	1	15	30	112
13-Oct-17	c1	1.2	1	2	2	26	12	159
13-Oct-17	c1	1.2	1	2	3	18	36	124
13-Oct-17	c1	1.2	1	2	4	6	29	107
13-Oct-17	c1	1.2	1	2	5	9	31	73
13-Oct-17	c1	1.3	1	3	1	27	16	182
13-Oct-17	c1	1.3	1	3	2	2	14	161
13-Oct-17	c1	1.3	1	3	3	6	7	52
13-Oct-17	c1	1.3	1	3	4	15	31	134
13-Oct-17	c1	1.3	1	3	5	12	6	140
13-Oct-17	c1	1.4	1	4	1	2	44	119
13-Oct-17	c1	1.4	1	4	2	4	31	137
13-Oct-17	c1	1.4	1	4	3	14	75	123
13-Oct-17	c1	1.4	1	4	4	9	21	104
13-Oct-17	c1	1.4	1	4	5	12	39	108
13-Oct-17	c1	1.5	1	5	1	2	36	12
13-Oct-17	c1	1.5	1	5	2	5	38	103
13-Oct-17	c1	1.5	1	5	3	4	24	95
13-Oct-17	c1	1.5	1	5	4	6	46	128
13-Oct-17	c1	1.5	1	5	5	13	33	121
13-Oct-17	c1	1.6	1	6	1	19	42	104
13-Oct-17	c1	1.6	1	6	2	32	47	190
13-Oct-17	c1	1.6	1	6	3	5	10	75
13-Oct-17	c1	1.6	1	6	4	9	55	212
13-Oct-17	c1	1.6	1	6	5	11	33	187
13-Oct-17	c1	2.1	2	1	1	0	3	22
13-Oct-17	c1	2.1	2	1	2	7	1	68
13-Oct-17	c1	2.1	2	1	3	3	4	75
13-Oct-17	c1	2.1	2	1	4	0	0	85
13-Oct-17	c1	2.1	2	1	5	1	0	61
13-Oct-17	c1	2.2	2	2	1	4	2	150
13-Oct-17	c1	2.2	2	2	2	1	0	22
13-Oct-17	c1	2.2	2	2	3	3	5	270
13-Oct-17	c1	2.2	2	2	4	2	0	43
13-Oct-17	c1	2.2	2	2	5	0	0	98
13-Oct-17	c1	2.3	2	3	1	0	1	5
13-Oct-17	c1	2.3	2	3	2	1	2	21
13-Oct-17	c1	2.3	2	3	3	0	0	0
13-Oct-17	c1	2.3	2	3	4	0	0	42

13-Oct-17	c1	2.3	2	3	5	0	0	27
13-Oct-17	c1	2.4	2	4	1	0	1	38
13-Oct-17	c1	2.4	2	4	2	0	4	47
13-Oct-17	c1	2.4	2	4	3	0	0	52
13-Oct-17	c1	2.4	2	4	4	0	5	51
13-Oct-17	c1	2.4	2	4	5	7	3	76
13-Oct-17	c1	2.5	2	5	1	0	0	3
13-Oct-17	c1	2.5	2	5	2	8	12	116
13-Oct-17	c1	2.5	2	5	3	0	1	59
13-Oct-17	c1	2.5	2	5	4	3	0	62
13-Oct-17	c1	2.5	2	5	5	0	0	14
13-Oct-17	c1	2.6	2	6	1	0	2	39
13-Oct-17	c1	2.6	2	6	2	0	0	36
13-Oct-17	c1	2.6	2	6	3	3	3	28
13-Oct-17	c1	2.6	2	6	4	1	3	74
13-Oct-17	c1	2.6	2	6	5	0	1	63
13-Oct-17	c1	3.1	3	1	1	3	2	23
13-Oct-17	c1	3.1	3	1	2	1	2	16
13-Oct-17	c1	3.1	3	1	3	0	6	14
13-Oct-17	c1	3.1	3	1	4	1	0	11
13-Oct-17	c1	3.1	3	1	5	0	2	18
13-Oct-17	c1	3.2	3	2	1	0	0	73
13-Oct-17	c1	3.2	3	2	2	0	0	52
13-Oct-17	c1	3.2	3	2	3	0	0	52
13-Oct-17	c1	3.2	3	2	4	0	0	95
13-Oct-17	c1	3.2	3	2	5	1	0	14
13-Oct-17	c1	3.3	3	3	1	4	19	42
13-Oct-17	c1	3.3	3	3	2	1	8	38
13-Oct-17	c1	3.3	3	3	3	0	1	3
13-Oct-17	c1	3.3	3	3	4	0	23	29
13-Oct-17	c1	3.3	3	3	5	0	56	41
13-Oct-17	c1	3.4	3	4	1	0	0	18
13-Oct-17	c1	3.4	3	4	2	0	0	18
13-Oct-17	c1	3.4	3	4	3	1	0	27
13-Oct-17	c1	3.4	3	4	4	0	0	35
13-Oct-17	c1	3.4	3	4	5	0	0	43
13-Oct-17	c1	3.5	3	5	1	1	0	5
13-Oct-17	c1	3.5	3	5	2	0	1	2
13-Oct-17	c1	3.5	3	5	3	0	0	1
13-Oct-17	c1	3.5	3	5	4	1	3	9
13-Oct-17	c1	3.5	3	5	5	1	0	11
13-Oct-17	c1	3.6	3	6	1	0	0	11
13-Oct-17	c1	3.6	3	6	2	1	0	62
13-Oct-17	c1	3.6	3	6	3	0	0	20
13-Oct-17	c1	3.6	3	6	4	0	0	86
13-Oct-17	c1	3.6	3	6	5	0	0	68

13-Oct-17	c1	4.1	4	1	1	0	12	3
13-Oct-17	c1	4.1	4	1	2	1	1	8
13-Oct-17	c1	4.1	4	1	3	0	0	7
13-Oct-17	c1	4.1	4	1	4	1	0	5
13-Oct-17	c1	4.1	4	1	5	1	2	11
13-Oct-17	c1	4.2	4	2	1	1	3	49
13-Oct-17	c1	4.2	4	2	2	0	6	94
13-Oct-17	c1	4.2	4	2	3	0	4	25
13-Oct-17	c1	4.2	4	2	4	2	7	41
13-Oct-17	c1	4.2	4	2	5	0	2	15
13-Oct-17	c1	4.3	4	3	1	0	2	6
13-Oct-17	c1	4.3	4	3	2	0	0	4
13-Oct-17	c1	4.3	4	3	3	1	2	11
13-Oct-17	c1	4.3	4	3	4	0	2	3
13-Oct-17	c1	4.3	4	3	5	1	1	5
13-Oct-17	c1	4.4	4	4	1	0	0	32
13-Oct-17	c1	4.4	4	4	2	0	1	57
13-Oct-17	c1	4.4	4	4	3	0	3	81
13-Oct-17	c1	4.4	4	4	4	5	12	62
13-Oct-17	c1	4.4	4	4	5	0	3	121
13-Oct-17	c1	4.5	4	5	1	0	3	6
13-Oct-17	c1	4.5	4	5	2	0	1	35
13-Oct-17	c1	4.5	4	5	3	1	2	26
13-Oct-17	c1	4.5	4	5	4	0	5	30
13-Oct-17	c1	4.5	4	5	5	7	5	88
13-Oct-17	c1	4.6	4	6	1	0	0	97
13-Oct-17	c1	4.6	4	6	2	1	2	230
13-Oct-17	c1	4.6	4	6	3	0	0	28
13-Oct-17	c1	4.6	4	6	4	0	0	62
13-Oct-17	c1	4.6	4	6	5	0	1	19
13-Oct-17	c1	6.1	6	1	1	0	1	36
13-Oct-17	c1	6.1	6	1	2	0	3	16
13-Oct-17	c1	6.1	6	1	3	1	3	29
13-Oct-17	c1	6.1	6	1	4	0	1	8
13-Oct-17	c1	6.1	6	1	5	0	1	4
13-Oct-17	c1	6.2	6	2	1	2	24	65
13-Oct-17	c1	6.2	6	2	2	3	7	39
13-Oct-17	c1	6.2	6	2	3	0	5	22
13-Oct-17	c1	6.2	6	2	4	0	4	26
13-Oct-17	c1	6.2	6	2	5	4	15	41
13-Oct-17	c1	6.3	6	3	1	4	8	20
13-Oct-17	c1	6.3	6	3	2	0	2	18
13-Oct-17	c1	6.3	6	3	3	1	1	41
13-Oct-17	c1	6.3	6	3	4	0	3	25
13-Oct-17	c1	6.3	6	3	5	2	2	28
13-Oct-17	c1	6.4	6	4	1	0	0	42

13-Oct-17	c1	6.4	6	4	2	0	7	127
13-Oct-17	c1	6.4	6	4	3	0	0	111
13-Oct-17	c1	6.4	6	4	4	23	9	240
13-Oct-17	c1	6.4	6	4	5	0	0	55
13-Oct-17	c1	6.5	6	5	1	1	3	81
13-Oct-17	c1	6.5	6	5	2	0	1	32
13-Oct-17	c1	6.5	6	5	3	1	12	35
13-Oct-17	c1	6.5	6	5	4	1	4	26
13-Oct-17	c1	6.5	6	5	5	0	1	63
13-Oct-17	c1	6.6	6	6	1	5	4	73
13-Oct-17	c1	6.6	6	6	2	3	15	63
13-Oct-17	c1	6.6	6	6	3	0	4	109
13-Oct-17	c1	6.6	6	6	4	0	1	58
13-Oct-17	c1	6.6	6	6	5	0	4	42
13-Oct-17	c1	7.1	7	1	1	3	14	93
13-Oct-17	c1	7.1	7	1	2	6	20	66
13-Oct-17	c1	7.1	7	1	3	2	18	96
13-Oct-17	c1	7.1	7	1	4	0	2	37
13-Oct-17	c1	7.1	7	1	5	5	6	40
13-Oct-17	c1	7.2	7	2	1	8	22	78
13-Oct-17	c1	7.2	7	2	2	0	0	23
13-Oct-17	c1	7.2	7	2	3	4	4	69
13-Oct-17	c1	7.2	7	2	4	3	12	37
13-Oct-17	c1	7.2	7	2	5	1	0	43
13-Oct-17	c1	7.3	7	3	1	0	29	38
13-Oct-17	c1	7.3	7	3	2	4	32	78
13-Oct-17	c1	7.3	7	3	3	2	25	63
13-Oct-17	c1	7.3	7	3	4	4	27	82
13-Oct-17	c1	7.3	7	3	5	8	22	91
13-Oct-17	c1	7.4	7	4	1	4	58	92
13-Oct-17	c1	7.4	7	4	2	0	41	129
13-Oct-17	c1	7.4	7	4	3	7	37	84
13-Oct-17	c1	7.4	7	4	4	3	25	206
13-Oct-17	c1	7.4	7	4	5	5	32	105
13-Oct-17	c1	7.5	7	5	1	0	0	35
13-Oct-17	c1	7.5	7	5	2	6	15	74
13-Oct-17	c1	7.5	7	5	3	0	28	51
13-Oct-17	c1	7.5	7	5	4	2	23	62
13-Oct-17	c1	7.5	7	5	5	0	67	90
13-Oct-17	c1	7.6	7	6	1	2	19	69
13-Oct-17	c1	7.6	7	6	2	1	3	75
13-Oct-17	c1	7.6	7	6	3	2	3	82
13-Oct-17	c1	7.6	7	6	4	3	5	109
13-Oct-17	c1	7.6	7	6	5	10	19	104
13-Oct-17	c1	8.1	8	1	1	2	3	54
13-Oct-17	c1	8.1	8	1	2	0	9	69

13-Oct-17	c1	8.1	8	1	3	4	7	45
13-Oct-17	c1	8.1	8	1	4	0	38	88
13-Oct-17	c1	8.1	8	1	5	5	6	53
13-Oct-17	c1	8.2	8	2	1	0	17	22
13-Oct-17	c1	8.2	8	2	2	3	4	30
13-Oct-17	c1	8.2	8	2	3	4	39	152
13-Oct-17	c1	8.2	8	2	4	4	9	51
13-Oct-17	c1	8.2	8	2	5	0	19	105
13-Oct-17	c1	8.3	8	3	1	4	12	115
13-Oct-17	c1	8.3	8	3	2	3	97	162
13-Oct-17	c1	8.3	8	3	3	1	8	54
13-Oct-17	c1	8.3	8	3	4	2	73	89
13-Oct-17	c1	8.3	8	3	5	1	14	30
13-Oct-17	c1	8.4	8	4	1	19	32	96
13-Oct-17	c1	8.4	8	4	2	12	13	12
13-Oct-17	c1	8.4	8	4	3	4	16	8
13-Oct-17	c1	8.4	8	4	4	2	6	65
13-Oct-17	c1	8.4	8	4	5	2	14	51
13-Oct-17	c1	8.5	8	5	1	0	3	56
13-Oct-17	c1	8.5	8	5	2	1	2	31
13-Oct-17	c1	8.5	8	5	3	1	1	24
13-Oct-17	c1	8.5	8	5	4	0	4	12
13-Oct-17	c1	8.5	8	5	5	0	2	15
13-Oct-17	c1	8.6	8	6	1	1	63	61
13-Oct-17	c1	8.6	8	6	2	0	13	55
13-Oct-17	c1	8.6	8	6	3	2	16	78
13-Oct-17	c1	8.6	8	6	4	8	45	192
13-Oct-17	c1	8.6	8	6	5	0	36	95
17-Oct-17	d1	1.1	1	1	1	26	46	111
17-Oct-17	d1	1.1	1	1	2	29	62	157
17-Oct-17	d1	1.1	1	1	3	18	60	163
17-Oct-17	d1	1.1	1	1	4	7	92	225
17-Oct-17	d1	1.1	1	1	5	12	51	134
17-Oct-17	d1	1.2	1	2	1	15	49	133
17-Oct-17	d1	1.2	1	2	2	22	56	178
17-Oct-17	d1	1.2	1	2	3	6	42	126
17-Oct-17	d1	1.2	1	2	4	13	29	106
17-Oct-17	d1	1.2	1	2	5	9	34	147
17-Oct-17	d1	1.3	1	3	1	8	78	203
17-Oct-17	d1	1.3	1	3	2	6	36	109
17-Oct-17	d1	1.3	1	3	3	9	42	131
17-Oct-17	d1	1.3	1	3	4	13	27	146
17-Oct-17	d1	1.3	1	3	5	15	35	162
17-Oct-17	d1	1.4	1	4	1	15	41	104
17-Oct-17	d1	1.4	1	4	2	9	16	157
17-Oct-17	d1	1.4	1	4	3	12	39	166

17-Oct-17	d1	1.4	1	4	4	22	45	193
17-Oct-17	d1	1.4	1	4	5	14	66	172
17-Oct-17	d1	1.5	1	5	1	9	36	77
17-Oct-17	d1	1.5	1	5	2	14	59	126
17-Oct-17	d1	1.5	1	5	3	21	63	171
17-Oct-17	d1	1.5	1	5	4	27	46	113
17-Oct-17	d1	1.5	1	5	5	18	61	135
17-Oct-17	d1	1.6	1	6	1	18	59	153
17-Oct-17	d1	1.6	1	6	2	32	80	270
17-Oct-17	d1	1.6	1	6	3	18	12	122
17-Oct-17	d1	1.6	1	6	4	39	24	167
17-Oct-17	d1	1.6	1	6	5	33	40	179
17-Oct-17	d1	2.1	2	1	1	1	0	3
17-Oct-17	d1	2.1	2	1	2	0	4	51
17-Oct-17	d1	2.1	2	1	3	0	0	13
17-Oct-17	d1	2.1	2	1	4	0	0	26
17-Oct-17	d1	2.1	2	1	5	0	0	67
17-Oct-17	d1	2.2	2	2	1	0	0	82
17-Oct-17	d1	2.2	2	2	2	0	0	24
17-Oct-17	d1	2.2	2	2	3	1	0	130
17-Oct-17	d1	2.2	2	2	4	0	0	46
17-Oct-17	d1	2.2	2	2	5	0	0	71
17-Oct-17	d1	2.3	2	3	1	0	0	16
17-Oct-17	d1	2.3	2	3	2	0	0	52
17-Oct-17	d1	2.3	2	3	3	0	0	28
17-Oct-17	d1	2.3	2	3	4	0	0	69
17-Oct-17	d1	2.3	2	3	5	0	0	58
17-Oct-17	d1	2.4	2	4	1	0	0	116
17-Oct-17	d1	2.4	2	4	2	0	0	28
17-Oct-17	d1	2.4	2	4	3	0	0	35
17-Oct-17	d1	2.4	2	4	4	0	0	24
17-Oct-17	d1	2.4	2	4	5	1	5	30
17-Oct-17	d1	2.5	2	5	1	0	0	31
17-Oct-17	d1	2.5	2	5	2	11	7	94
17-Oct-17	d1	2.5	2	5	3	1	3	59
17-Oct-17	d1	2.5	2	5	4	1	0	62
17-Oct-17	d1	2.5	2	5	5	0	1	12
17-Oct-17	d1	2.6	2	6	1	0	16	73
17-Oct-17	d1	2.6	2	6	2	0	13	95
17-Oct-17	d1	2.6	2	6	3	0	1	32
17-Oct-17	d1	2.6	2	6	4	0	0	46
17-Oct-17	d1	2.6	2	6	5	0	0	19
17-Oct-17	d1	3.1	3	1	1	0	0	11
17-Oct-17	d1	3.1	3	1	2	0	1	9
17-Oct-17	d1	3.1	3	1	3	0	0	22
17-Oct-17	d1	3.1	3	1	4	1	0	16

17-Oct-17	d1	3.1	3	1	5	0	0	14
17-Oct-17	d1	3.2	3	2	1	0	0	68
17-Oct-17	d1	3.2	3	2	2	0	0	45
17-Oct-17	d1	3.2	3	2	3	0	0	46
17-Oct-17	d1	3.2	3	2	4	0	0	63
17-Oct-17	d1	3.2	3	2	5	0	0	7
17-Oct-17	d1	3.3	3	3	1	1	0	15
17-Oct-17	d1	3.3	3	3	2	0	0	9
17-Oct-17	d1	3.3	3	3	3	0	0	13
17-Oct-17	d1	3.3	3	3	4	0	0	8
17-Oct-17	d1	3.3	3	3	5	0	8	26
17-Oct-17	d1	3.4	3	4	1	0	0	43
17-Oct-17	d1	3.4	3	4	2	0	0	24
17-Oct-17	d1	3.4	3	4	3	0	0	31
17-Oct-17	d1	3.4	3	4	4	0	1	82
17-Oct-17	d1	3.4	3	4	5	0	0	30
17-Oct-17	d1	3.5	3	5	1	0	0	4
17-Oct-17	d1	3.5	3	5	2	0	0	8
17-Oct-17	d1	3.5	3	5	3	0	0	6
17-Oct-17	d1	3.5	3	5	4	0	0	16
17-Oct-17	d1	3.5	3	5	5	0	0	11
17-Oct-17	d1	3.6	3	6	1	0	0	35
17-Oct-17	d1	3.6	3	6	2	0	0	78
17-Oct-17	d1	3.6	3	6	3	0	0	23
17-Oct-17	d1	3.6	3	6	4	0	0	74
17-Oct-17	d1	3.6	3	6	5	0	0	48
17-Oct-17	d1	4.1	4	1	1	1	0	13
17-Oct-17	d1	4.1	4	1	2	0	0	38
17-Oct-17	d1	4.1	4	1	3	0	1	10
17-Oct-17	d1	4.1	4	1	4	0	0	8
17-Oct-17	d1	4.1	4	1	5	0	0	14
17-Oct-17	d1	4.2	4	2	1	1	0	26
17-Oct-17	d1	4.2	4	2	2	0	10	31
17-Oct-17	d1	4.2	4	2	3	2	4	28
17-Oct-17	d1	4.2	4	2	4	0	16	36
17-Oct-17	d1	4.2	4	2	5	3	21	34
17-Oct-17	d1	4.3	4	3	1	0	0	5
17-Oct-17	d1	4.3	4	3	2	0	1	0
17-Oct-17	d1	4.3	4	3	3	0	0	8
17-Oct-17	d1	4.3	4	3	4	0	1	9
17-Oct-17	d1	4.3	4	3	5	0	1	6
17-Oct-17	d1	4.4	4	4	1	3	0	70
17-Oct-17	d1	4.4	4	4	2	0	0	29
17-Oct-17	d1	4.4	4	4	3	0	6	42
17-Oct-17	d1	4.4	4	4	4	2	0	91
17-Oct-17	d1	4.4	4	4	5	0	0	88

17-Oct-17	d1	4.5	4	5	1	0	1	20
17-Oct-17	d1	4.5	4	5	2	0	0	38
17-Oct-17	d1	4.5	4	5	3	3	1	24
17-Oct-17	d1	4.5	4	5	4	1	2	11
17-Oct-17	d1	4.5	4	5	5	2	4	45
17-Oct-17	d1	4.6	4	6	1	0	0	141
17-Oct-17	d1	4.6	4	6	2	0	6	137
17-Oct-17	d1	4.6	4	6	3	0	0	49
17-Oct-17	d1	4.6	4	6	4	0	3	66
17-Oct-17	d1	4.6	4	6	5	0	2	24
17-Oct-17	d1	6.1	6	1	1	0	0	2
17-Oct-17	d1	6.1	6	1	2	0	0	3
17-Oct-17	d1	6.1	6	1	3	0	1	6
17-Oct-17	d1	6.1	6	1	4	0	0	12
17-Oct-17	d1	6.1	6	1	5	0	3	15
17-Oct-17	d1	6.2	6	2	1	0	0	24
17-Oct-17	d1	6.2	6	2	2	0	18	29
17-Oct-17	d1	6.2	6	2	3	0	32	35
17-Oct-17	d1	6.2	6	2	4	0	27	54
17-Oct-17	d1	6.2	6	2	5	2	16	32
17-Oct-17	d1	6.3	6	3	1	0	0	6
17-Oct-17	d1	6.3	6	3	2	0	0	11
17-Oct-17	d1	6.3	6	3	3	0	1	10
17-Oct-17	d1	6.3	6	3	4	0	0	6
17-Oct-17	d1	6.3	6	3	5	0	1	7
17-Oct-17	d1	6.4	6	4	1	0	0	48
17-Oct-17	d1	6.4	6	4	2	0	1	80
17-Oct-17	d1	6.4	6	4	3	1	0	79
17-Oct-17	d1	6.4	6	4	4	2	0	150
17-Oct-17	d1	6.4	6	4	5	0	0	24
17-Oct-17	d1	6.5	6	5	1	0	0	10
17-Oct-17	d1	6.5	6	5	2	0	0	4
17-Oct-17	d1	6.5	6	5	3	0	1	5
17-Oct-17	d1	6.5	6	5	4	0	1	4
17-Oct-17	d1	6.5	6	5	5	0	0	12
17-Oct-17	d1	6.6	6	6	1	0	0	43
17-Oct-17	d1	6.6	6	6	2	5	2	44
17-Oct-17	d1	6.6	6	6	3	4	0	130
17-Oct-17	d1	6.6	6	6	4	0	0	68
17-Oct-17	d1	6.6	6	6	5	2	1	12
17-Oct-17	d1	7.1	7	1	1	0	43	22
17-Oct-17	d1	7.1	7	1	2	0	36	19
17-Oct-17	d1	7.1	7	1	3	1	40	27
17-Oct-17	d1	7.1	7	1	4	0	3	12
17-Oct-17	d1	7.1	7	1	5	1	5	25
17-Oct-17	d1	7.2	7	2	1	1	8	98

17-Oct-17	d1	7.2	7	2	2	0	3	10
17-Oct-17	d1	7.2	7	2	3	1	4	72
17-Oct-17	d1	7.2	7	2	4	3	7	38
17-Oct-17	d1	7.2	7	2	5	0	4	22
17-Oct-17	d1	7.3	7	3	1	1	34	30
17-Oct-17	d1	7.3	7	3	2	0	25	34
17-Oct-17	d1	7.3	7	3	3	2	29	45
17-Oct-17	d1	7.3	7	3	4	0	17	42
17-Oct-17	d1	7.3	7	3	5	0	5	53
17-Oct-17	d1	7.4	7	4	1	22	18	74
17-Oct-17	d1	7.4	7	4	2	0	24	28
17-Oct-17	d1	7.4	7	4	3	1	15	41
17-Oct-17	d1	7.4	7	4	4	0	20	53
17-Oct-17	d1	7.4	7	4	5	0	18	61
17-Oct-17	d1	7.5	7	5	1	0	15	61
17-Oct-17	d1	7.5	7	5	2	0	37	75
17-Oct-17	d1	7.5	7	5	3	1	12	32
17-Oct-17	d1	7.5	7	5	4	0	26	58
17-Oct-17	d1	7.5	7	5	5	6	44	78
17-Oct-17	d1	7.6	7	6	1	17	3	62
17-Oct-17	d1	7.6	7	6	2	1	0	34
17-Oct-17	d1	7.6	7	6	3	1	3	96
17-Oct-17	d1	7.6	7	6	4	2	5	39
17-Oct-17	d1	7.6	7	6	5	16	28	270
17-Oct-17	d1	8.1	8	1	1	0	9	27
17-Oct-17	d1	8.1	8	1	2	3	17	40
17-Oct-17	d1	8.1	8	1	3	2	22	54
17-Oct-17	d1	8.1	8	1	4	11	28	72
17-Oct-17	d1	8.1	8	1	5	5	25	66
17-Oct-17	d1	8.2	8	2	1	4	6	82
17-Oct-17	d1	8.2	8	2	2	1	2	29
17-Oct-17	d1	8.2	8	2	3	38	61	210
17-Oct-17	d1	8.2	8	2	4	0	1	81
17-Oct-17	d1	8.2	8	2	5	1	3	61
17-Oct-17	d1	8.3	8	3	1	3	46	110
17-Oct-17	d1	8.3	8	3	2	6	53	136
17-Oct-17	d1	8.3	8	3	3	1	32	75
17-Oct-17	d1	8.3	8	3	4	14	24	68
17-Oct-17	d1	8.3	8	3	5	10	23	71
17-Oct-17	d1	8.4	8	4	1	10	14	108
17-Oct-17	d1	8.4	8	4	2	1	12	30
17-Oct-17	d1	8.4	8	4	3	1	3	22
17-Oct-17	d1	8.4	8	4	4	0	7	45
17-Oct-17	d1	8.4	8	4	5	2	12	48
17-Oct-17	d1	8.5	8	5	1	5	2	12
17-Oct-17	d1	8.5	8	5	2	1	1	10

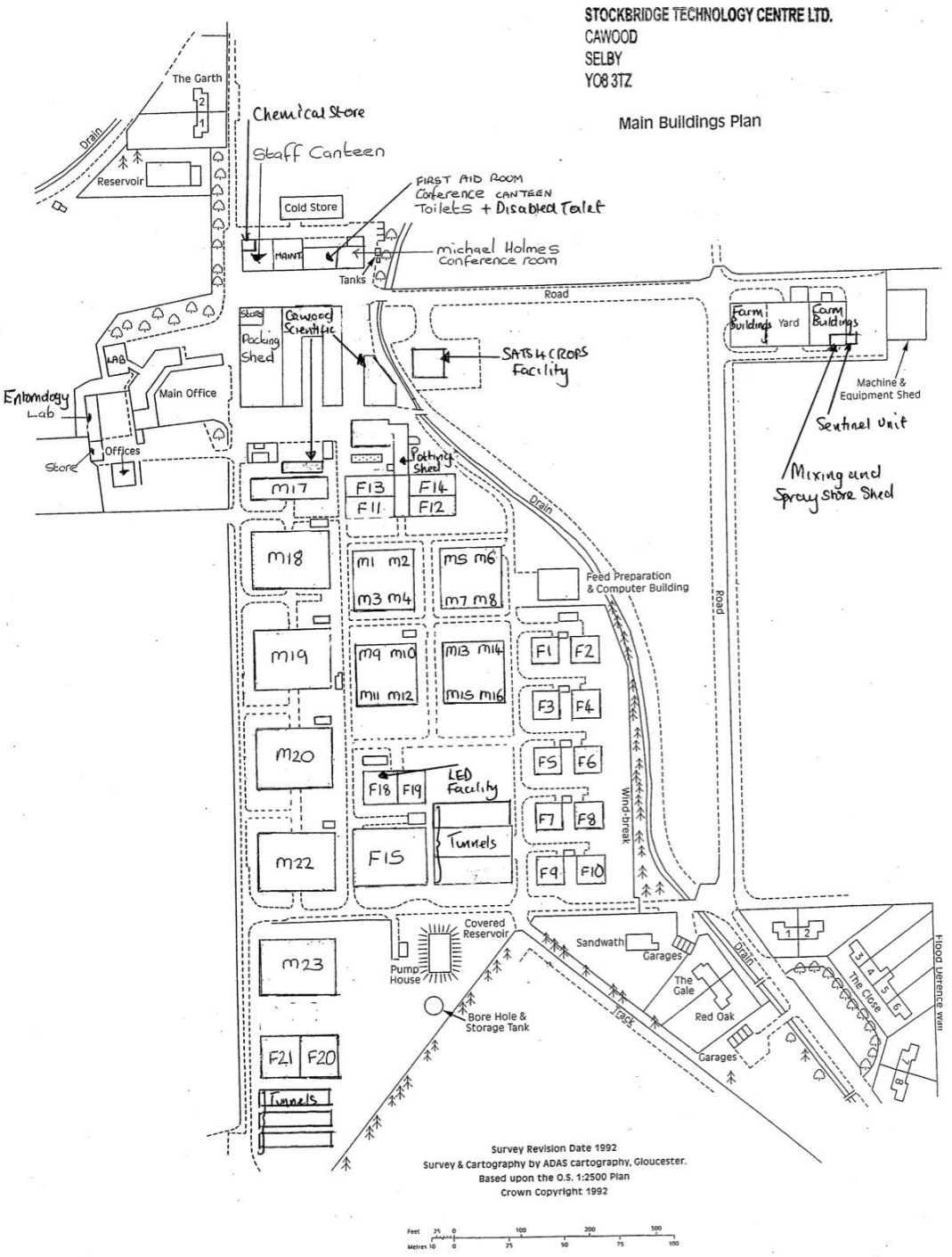
17-Oct-17	d1	8.5	8	5	3	1	7	15
17-Oct-17	d1	8.5	8	5	4	2	9	21
17-Oct-17	d1	8.5	8	5	5	1	5	16
17-Oct-17	d1	8.6	8	6	1	0	21	42
17-Oct-17	d1	8.6	8	6	2	1	28	33
17-Oct-17	d1	8.6	8	6	3	3	22	56
17-Oct-17	d1	8.6	8	6	4	0	19	65
17-Oct-17	d1	8.6	8	6	5	2	26	49

f. Trial layout and site map

Layout: Each square represents a single rockwool slab containing 3 tomato plants. Numbers = treatments. Replicate blocks are shaded differently. Grey shaded squares containing an ‘x’ = buffer plants. Rows were separated either by concrete walkways or fleece divides.

x		6	7		5	8		4	1		2	3		1	6		4	7		5	2		8	3		x
x		6	7		5	8		4	1		2	3		1	6		4	7		5	2		8	3		x
x		6	7		5	8		4	1		2	3		1	6		4	7		5	2		8	3		x
x		4	5		7	2		6	3		8	1		2	7		1	8		3	6		5	4		x
x		4	5		7	2		6	3		8	1		2	7		1	8		3	6		5	4		x
x		4	5		7	2		6	3		8	1		2	7		1	8		3	6		5	4		x
x		8	3		1	6		2	5		4	7		8	5		2	3		4	1		7	6		x
x		8	3		1	6		2	5		4	7		8	5		2	3		4	1		7	6		x
x		8	3		1	6		2	5		4	7		8	5		2	3		4	1		7	6		x

Site:


STOCKBRIDGE TECHNOLOGY CENTRE LTD.
CAWOOD
SELBY
YO8 3TZ
Main Buildings Plan
The Garth
Drain
Reservoir
Chemical Store
Staff Canteen
FIRST AID ROOM
Conference canteen
Toilets + Disabled Toilet
Cold Store
michael Holmes
conference room
MAINT.
Tanks
Road
Farm Buildings
Yard
Farm Buildings
Machine & Equipment Shed
Sentinel Unit
Mixing and Spray Store Shed
Store
Packing Shed
Cawood Scientific
SATS & CROPS Facility
LAB
Entomology Lab
Main Office
Offices
Store
Potting Shed
M17
F13
F14
F11
F12
Drain
M18
M1 M2
M3 M4
M5 M6
M7 M8
Feed Preparation & Computer Building
road
M19
M9 M10
M11 M12
M13 M14
M15 M16
F1
F2
F3
F4
M20
F5
F6
F18
F19
LED Facility
F7
F8
Wind-break
M22
F15
Tunnels
F9
F10
Covered Reservoir
Sandwath
Garages
Drain
M23
Pump House
Bore Hole & Storage Tank
The Gate
Red Oak
Track
The Close
Garages
Hood Lane
F21
F20
Tunnels
Survey Revision Date 1992
Survey & Cartography by ADAS cartography, Gloucester.
Based upon the O.S. 1:2500 Plan
Crown Copyright 1992
Feet 25 0 100 200 300
Metres 10 0 25 50 75 100

g. STC Tomato Main Feed (EC 3.3, pH5.5) Recipe

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Horticultural Consultancy Ltd

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FACTS Reg No: FE / 1846

111 Copandale Road
Beverley
East Yorkshire
HU17 7BN

Feed Recipe

STC Tomato – Main Feed 3.3 EC

Date: 16 February 2017

Tank A		750	litres
			kg
Potassium Nitrate			25
Calcium Nitrate			75
Pure Calcium Nitrate			0
Calcium Chloride			0
Potassium Chloride			20
Ammonium Nitrate		upto<	2
Iron [FeDP]	%	7	2.8
			litres
Nitric Acid			1
Iron [liquid]	%	7	0
Dilution Rate			150
Tank Size			750

Tank B		750	litres
			kg
Potassium Nitrate			0
Magnesium Sulphate			70
Mono Potassium Phosphate			24
Magnesium Nitrate			0
Potassium Chloride			50
Phosphoric Acid		litres	0
Nitric Acid		litres	0
			gram
Manganese Sulphate	%	32	400
Borax			320
Solubor			0
Copper Sulphate	%	25	100
Zinc Sulphate	%	24	400
Sodium Molybdate			15

	molar	Feed	Water	← ppm
Conductivity (25C)	↓	3329	607	← **Mains water** 0 100
Nitrate N	10.9	153	5.4	NRM 25/05/16
Ammonium N	0.8	12	0	
Phosphorus	1.6	50	0.9	
Potassium	11.8	460	3.8	
Magnesium	3.1	76	14.1	
Calcium	5.0	201	74.8	
Sulphur	3.4	107	26.6	
Sodium	1.3	29	19.5	
Chloride	23.8	333	34.5	
Iron	31.2	1.74	0.1	
Manganese	20.9	1.15	0.01	
Boron	30.8	0.33	0.02	
Copper	3.5	0.22	0	
Zinc	14.0	0.91	0.06	
Molybdenum	0.6	0.05		
Bicarbonate		104	196	

Ratios	
K:N	2.79
K:Ca	2.28
K:Mg	6.03

Potassium Chloride	312	ppm K
Calcium Chloride	0	ppm Ca

16 February 2017

Supplied strictly E & O E

1/02/17

STC - Tomato Feed
Main feed

FACTS CERTIFICATION

BASIS

VEGETABLE CONSULTANTS ASSOCIATION

Certificate of

Official Recognition of Efficacy Testing Facilities or Organisations in the United Kingdom

This certifies that

Stockbridge Technology Centre

complies with the minimum standards laid down in Regulation (EC) 1107/2009 for efficacy testing.

The above Facility/Organisation has been officially recognised as being competent to carry out efficacy trials/tests in the United Kingdom in the following categories:

Agriculture/Horticulture
Biologicals and Semiochemicals
Stored Crops

Date of issue: **19 July 2016**
Effective date: **1 April 2016**
Expiry date: **31 March 2021**

Signature *Authorised signatory*

Certification Number
ORETO 372

HSE
Chemicals Regulation Division

Department of Agriculture and Rural Development