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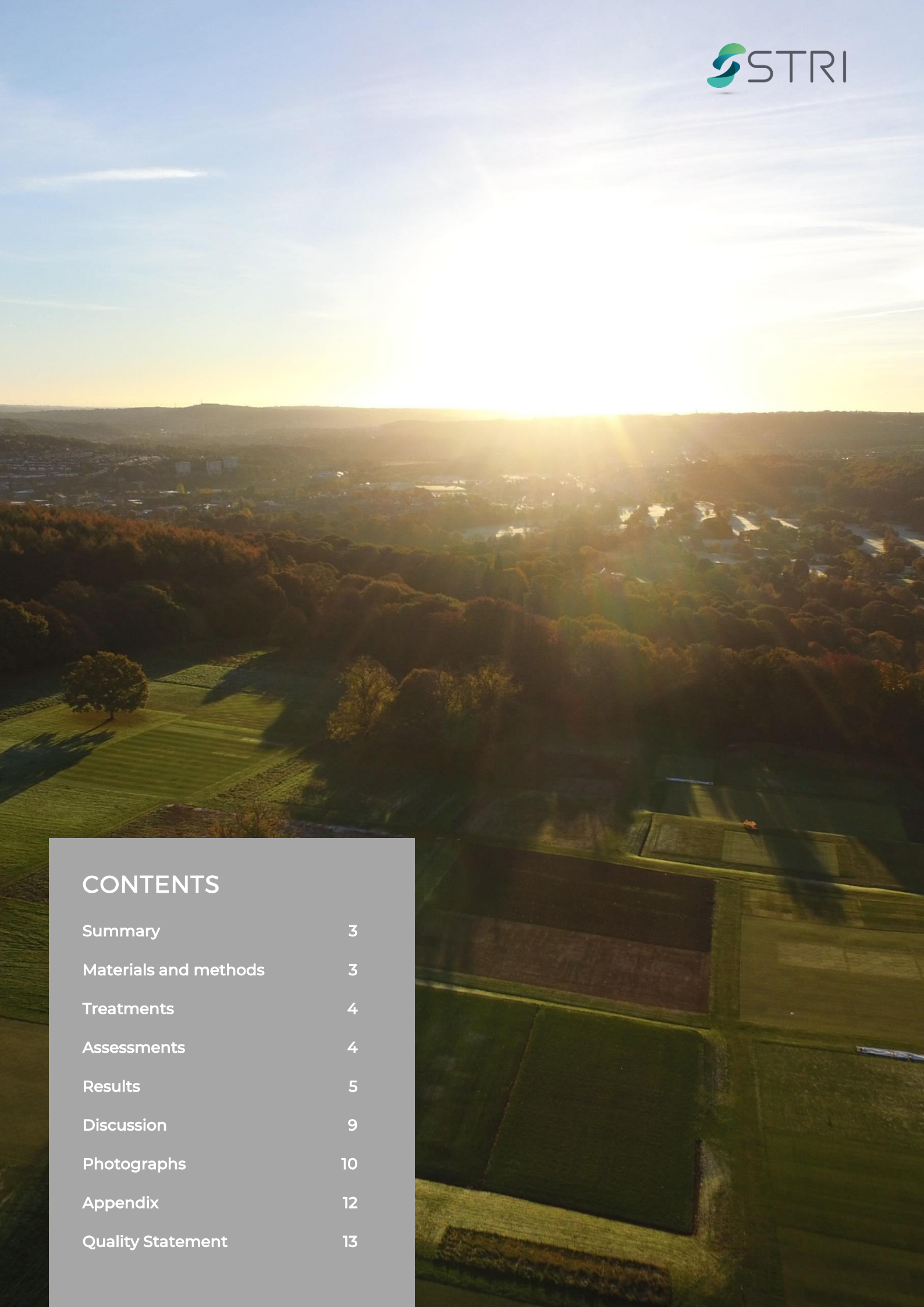
Final report

Evaluate the safety of Oxyturf Extra across common turf species and cultivars

January 2024

STRI Research



CONTENTS

SUMMARY

The objective of the trial was to determine the crop safety of Oxyturf extra at various dose rates and water rates on different species and cultivars of common turfgrasses.

Oxyturf extra did not cause phytotoxicity during this trial period and would be considered safe for use on managed amenity turf under these conditions.

MATERIALS AND METHODS

Field site : One trial on selectivity strips, containing various different species and cultivars, at STRI experimental ground, Bingley (GPS reference 53.8474 and –1.8579). The trial area was maintained as a whole and mown to a height of 12mm.

Timing : The trial began in November 2023 and ran for 8 weeks.

Experimental design : The trial was laid out as a strip block design with four replications per treatment.

Species and cultivars :

Perennial ryegrass (Lolium perenne):
[1] Alison
[2] Annecy
[3] Fabian
Chewings fescue (Festuca rubra ssp. commutata):
[4] Caldris
[5] Bogart
[6] Trophy
Slender creeping red fescue (Festuca rubra ssp. litoralis):
[7] Cathy
[8] Nigella
[9] Smirna
Bent grass (Agrostis spp.):
[10] Cleek
[11] Arrowtown
[12] Manor
[13] Highland
[14] 007
[15] Tour pro
Smooth stalked meadow-grass (Poa pratensis):
[16] Yvette
[17] Evora
[18] Sombrero
[19] Tetris
[20] Yorkshire fog (Holcus lanatus)
Annual meadow-grass (Poa annua):
[21] Annual meadow-grass established from grass cores taken from an annual meadow grass/bentgrass golf green.

TREATMENTS

Table 1: Treatment list

Treatments	Application Rate (l/ha)	Water Rate (l/ha)
[1] Untreated Control		
[2] Oxyturf Extra	20	400
[3] Oxyturf Extra	40	800
[4] Oxyturf Extra	20	200
[5] Oxyturf Extra	40	400

Treatments were applied using an Oxford precision sprayer with a flat fan even spray nozzle operating at 2 bar pressure.

Treatments were applied 3 times at 7 day intervals.

ASSESSMENTS

Assessments were carried out prior to each application and 3 days after application. Assessments were carried out 3, 7, 14, 21, 28 and 46 days after final application. The following variables were assessed:

Phytotoxicity

Turf was assessed visually for signs of phytotoxicity with the following variables assessed (SOP RS0016).

***Discolouration**: assessed on a 1-6 scale (1 = no discolouration, 6 = severe discolouration)*

***Leaf Scorch**: assessed on a 1-7 scale (1 = no observable leaf scorch, 7 = sward apparently dead).*

***Live turf cover (%)**: if there was evidence that the applied product had a detrimental effect on live turf cover (i.e. obvious patches of dead and dying plants have formed) the actual percentage plot area of live turf cover was recorded.*

Photography

Drone photos were taken of the trial area on assessment dates when conditions were suitable.

RESULTS

Phytotoxicity

Discolouration

No discolouration was observed during this trial period (table 2).

Leaf Scorch

No leaf scorch was observed during this trial period (table 3).

Live turf cover

No products were observed to have a detrimental effect on live turf cover during this trial period.

Table 2: Discolouration of treated and untreated plots (1-6 scale)

Treatment	03/11/2023	06/11/2023	10/11/2023	13/11/2023	17/11/2023	20/11/2023	24/11/2023	01/12/2023	08/12/2023	15/12/2023	02/01/2024
	0DAT1	3DAT1	7DAT1	3DAT2	7DAT2	3DAT3	7DAT3	14DAT3	21DAT3	28DAT3	46DAT3
[1] Untreated Control	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
[2] Oxyturf Extra	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
[3] Oxyturf Extra	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
[4] Oxyturf Extra	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
[5] Oxyturf Extra	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P	*	*	*	*	*	*	*	*	*	*	*
LSD	*	*	*	*	*	*	*	*	*	*	*
d.f.	*	*	*	*	*	*	*	*	*	*	*
%c.v.	*	*	*	*	*	*	*	*	*	*	*

* - insufficient variation for statistical analysis

Table 3: Leaf scorch of treated and untreated plots (1-7 scale)

Treatment	03/11/2023	06/11/2023	10/11/2023	13/11/2023	17/11/2023	20/11/2023	24/11/2023	01/12/2023	08/12/2023	15/12/2023	02/01/2024
	0DAT1	3DAT1	7DAT1	3DAT2	7DAT2	3DAT3	7DAT3	14DAT3	21DAT3	28DAT3	46DAT3
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[3] Oxyturf Extra	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
[4] Oxyturf Extra	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
[5] Oxyturf Extra	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P	*	*	*	*	*	*	*	*	*	*	*
LSD	*	*	*	*	*	*	*	*	*	*	*
d.f.	*	*	*	*	*	*	*	*	*	*	*
%c.v.	*	*	*	*	*	*	*	*	*	*	*

* - insufficient variation for statistical analysis

DISCUSSION

The objective of the trial was to determine the crop safety of Oxyturf extra at various dose rates and water rates on different species and cultivars of common turfgrasses.

The grass species used in this trial cover the major cool season grasses used in managed amenity turf. These grasses are found across golf courses, sports pitches and recreational areas for various purposes. If a product does not cause phytotoxicity on these grasses, it can be considered safe for use on manged amenity turf.

Best practice for use of Oxyturf Extra would include irrigation following application. To understand if products were at risk of causing phytotoxicity no irrigation was applied following application. This allows turf mangers to understand the risk of no irrigation being applied and the effects that may be caused.

During the trial period there was high levels of precipitation. To further understand the effects of this product, conducting trials during other times of year when conditions are drier and warmer will give further assurance on product safety.

In conclusion, Oxyturf extra did not cause phytotoxicity during this trial period and would be considered safe for use on managed amenity turf under these conditions.

PHOTOGRAPHS

Photo 1: Drone photo 03/11/23 0DAT1

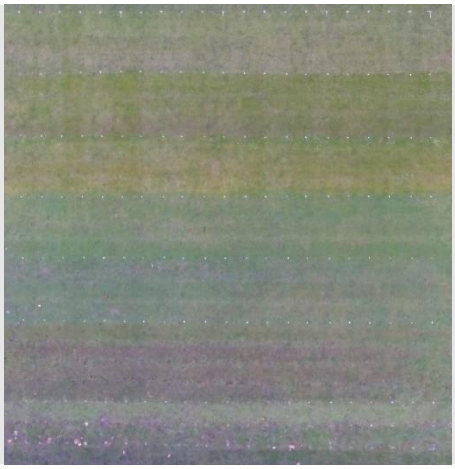

Photo 2: Drone photo 17/11/23 7DAT2

Photo 3: Drone photo 27/11/23 10DAT3

Photo 4: Drone photo 11/12/23 24DAT3

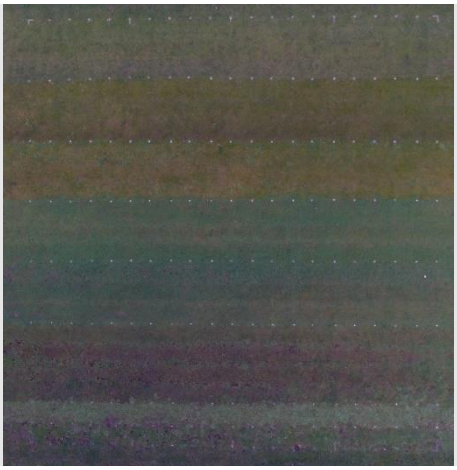

Photo 5: Drone photo 15/12/23 28DAT3

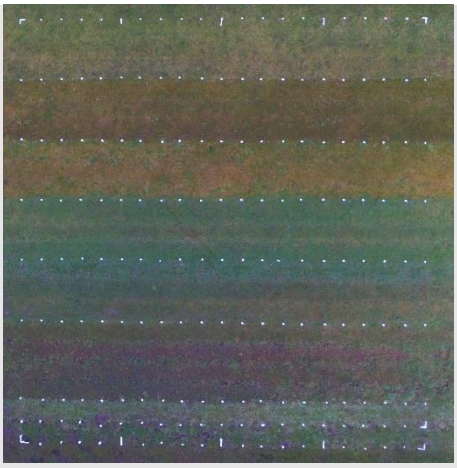

Photo 6: Drone photo 03/01/24 47DAT3

Signed:  (Study Director)

Date: 03/01/2024

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APPENDIX

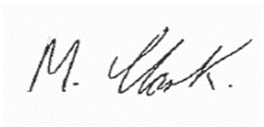
Appendix 1. Trial plan

Perennial Ryegrass	Alison																				
	Annecy																				
	Fabian																				
Chewings Fescue	Caldris																				
	Bogart																				
	Trophy																				
Slender Creeping Red Fescue	Cathy																				
	Nigella																				
	Smirna																				
Browntop Bent Grasses	Cleek																				
	Arrowtown																				
	Manor																				
Creeping Bent Grasses	Highland																				
	007																				
	tour pro																				
Smooth Stalked Meadow Grasses	Yvette																				
	Evora																				
	Sombrero																				
	Tetris																				
Yorkshire Fog																					
Poa Annua																					
Treatments		2	4	3	1	5	3	4	1	2	5	2	3	1	5	4	3	4	5	1	2
Blocks		Block 1					Block 2					Block3					Block 4				

QUALITY STATEMENT

We confirm that this report is a true representation of the original data collected and that the Standard Operating Procedures referred to in the STRI Manual of Standard Operating Procedures, and those relevant to data collection, data preparation, archiving of data and preparation of reports have been implemented in full.

Prepared by:  (03/01/2024)

Checked by:  (04/01/2024)

Final version checked and reviewed by:  (04/01/2024)

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