Propeat fertiliser trials

Queensland and New South Wales

January 2024

AUSTRALIAN Agribusiness

Trial program

- *Queensland – Hybrid Couch golf green*
- *New South Wales – Creeping Bent golf green*
- *New South Wales – Kikuyu fairway*

Trial aims

- Evaluate speed of green up.
- Compare the 200kg/ha and 300kg/ha rates across Propeat 17-0-3 and 7-1-11.
- Evaluate longevity up to 56 days.
- Compare and contrast existing organic based fertiliser lines to Propeat performance.
- Compare and contrast Propeat fertilisers against inorganic combination fertiliser lines.
- Compare and contrast Propeat fertiliser performance on hybrid couch golf green, creeping bent golf green, and fairway Kikuyu.

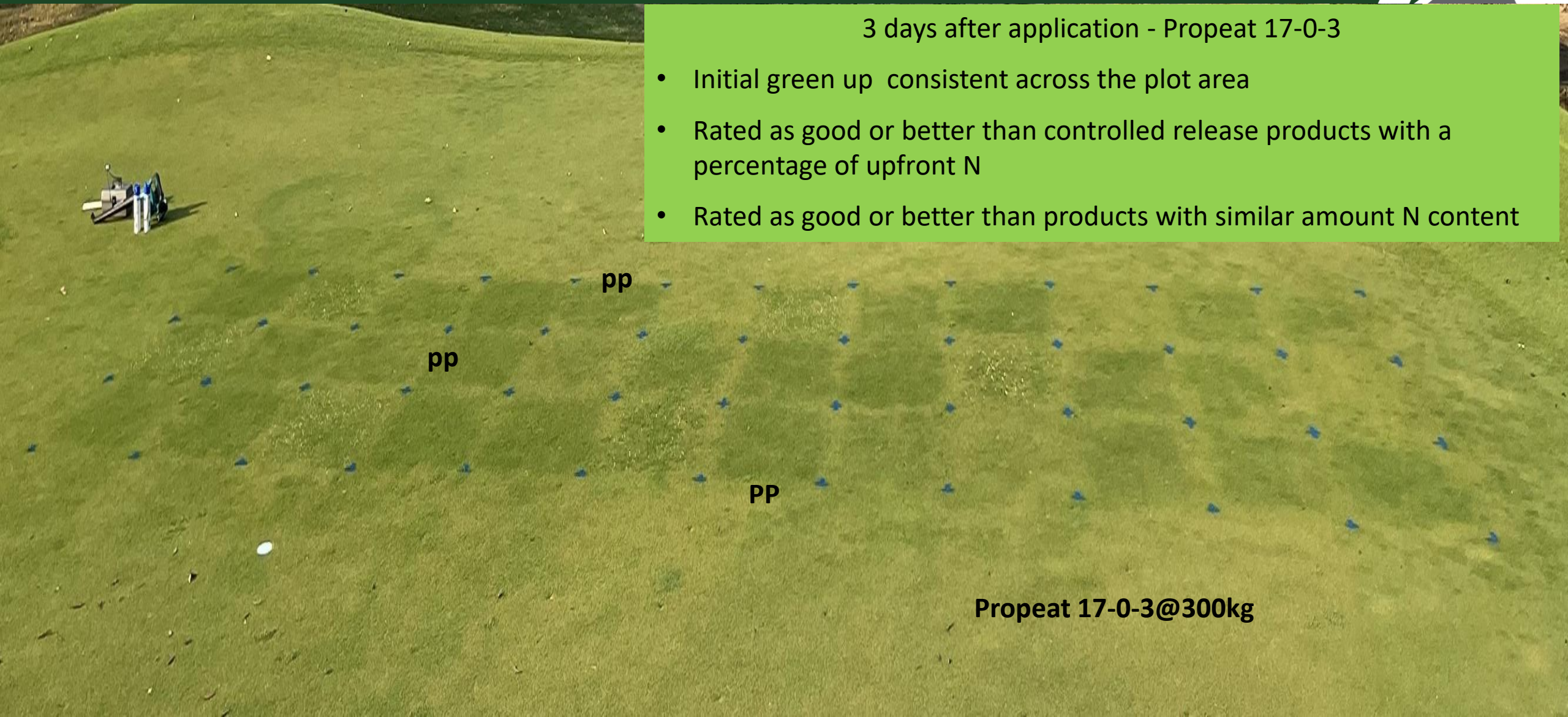
Trial takeaways

- 3 sites in total trialled on
  - Sydney Bent Golf Green
  - Sydney Fairway
  - Brisbane Hybrid Couch Golf Green
- Two Propeat formulations at both low and high label rates.
- Propeat 17-0-3 as good or better compared to all other assessed products.
- Sydney bent golf green trial discontinued, strong early data showed early green-up response.
- Sydney fairway, good early data, subject to drought and high temperatures in later evaluation dates followed by heavy rainfall.
- Brisbane hybrid couch data, trial subject to high rainfall past 56 days (273mm).

Queensland - Hybrid Couch golf green

Propeat 17-0-3 (300kg/ha)

- Performed consistently in the top two rankings for NDVI, turf colour and turf quality for 56 days after application
- Rapid green up peaking between 7 – 14 days after application
- Turf colour and NDVI lowered slightly from 21 days through to 56 days but rated as excellent turf quality
- Consistently rated higher for NDVI, turf colour and turf quality than controlled release fertilisers to 56 days after application
- Homogenous granule excellent for even distribution on application



3 days after application - Propeat 17-0-3

- Initial green up consistent across the plot area
- Rated as good or better than controlled release products with a percentage of upfront N
- Rated as good or better than products with similar amount N content

7 Days after application

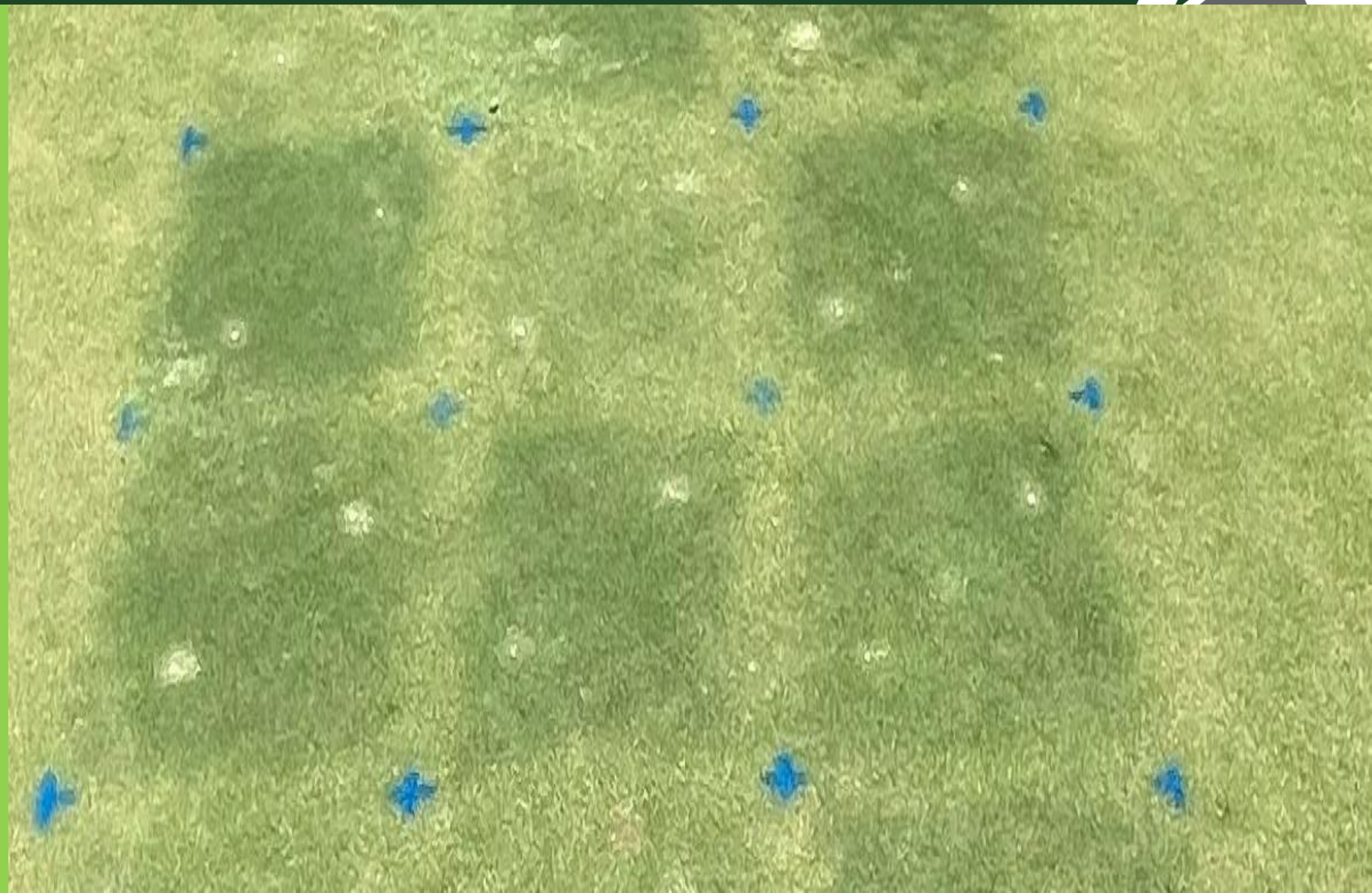
Top row L - R

Propeat 17-0-3@300kg
Propeat 7-1-11@200kg
Noculate Complete 17-1-14@400kg

Bottom row L - R

Noculate Complete 17-1-14@400kg
Propeat 17-0-3@300kg
Acitvate N 18-1-4@400kg

- **Propeat 17-0-3 as good or better in green up at 7 days after application**
- **100kgs/ha less of product than comparative organic products**
- **Highest in NDVI, Colour ratings**
- **Homogenous granule - excellent consistency of colour**



14 Days after application

Top row L - R

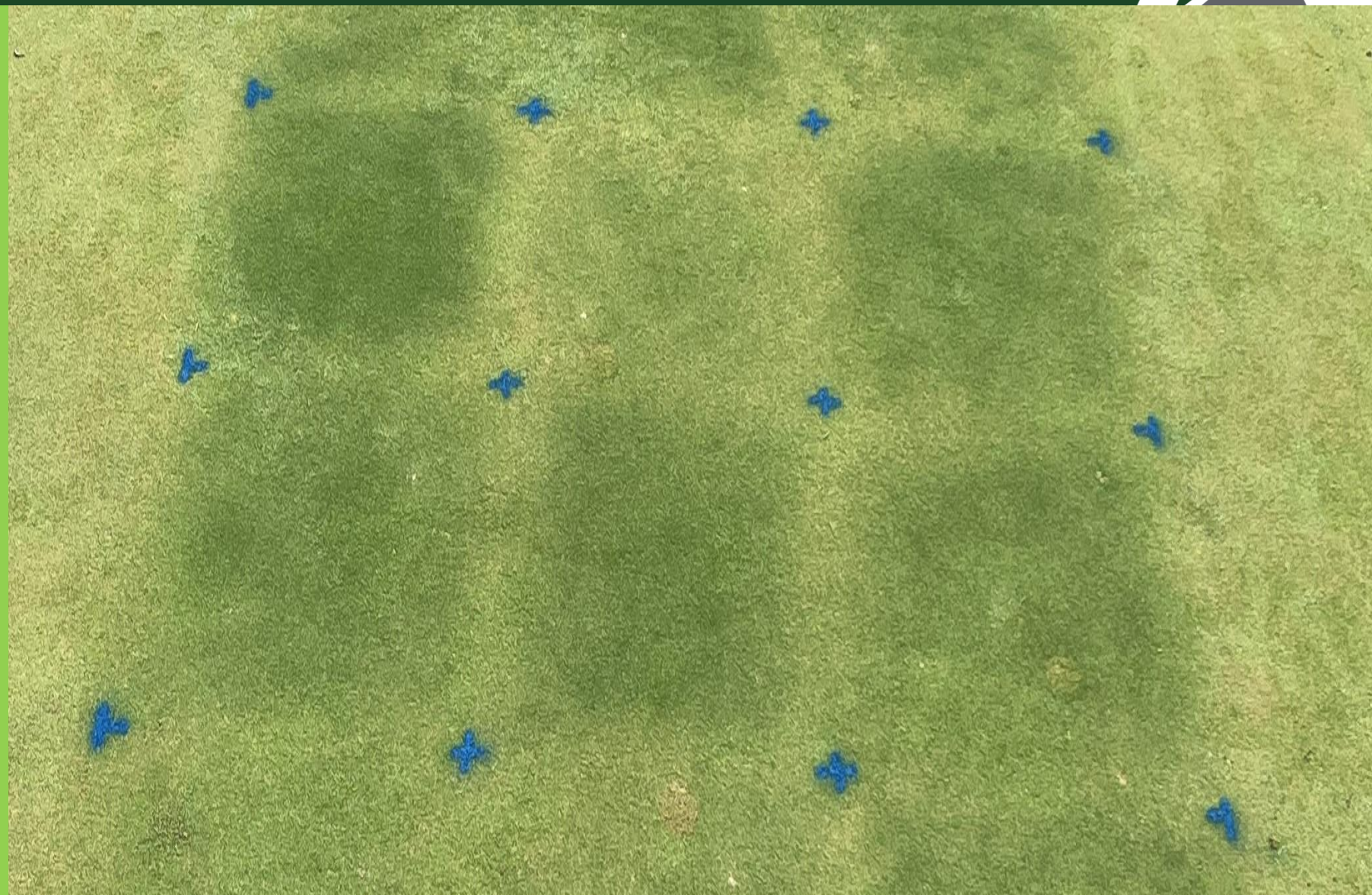
Propeat 17-0-3@300kg
Propeat 7-1-11@200kg
Noculate Complete 17-1-14@400kg

Bottom row L - R

Noculate Complete 17-1-14@400kg
Propeat 17-0-3@300kg
Acitvate N 18-1-4@400kg

Propeat 17-0-3

- **Continued to green up further producing excellent turf quality**
- **Continued highest rating in NDVI, Colour**
- **Excellent dark green consistency**



21 Days after application

Top row L - R

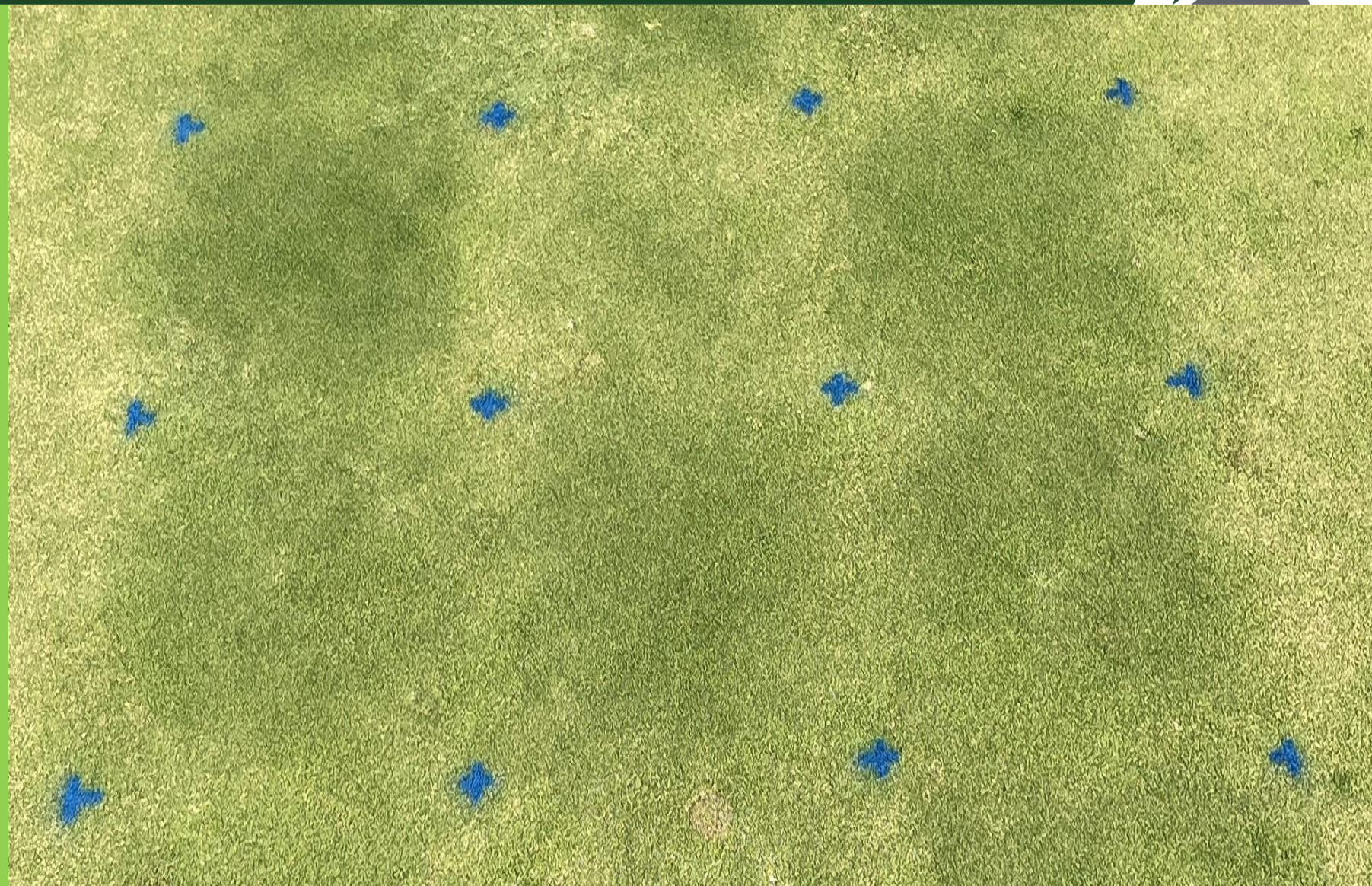
Propeat 17-0-3@300kg
Propeat 7-1-11@200kg
Noculate Complete 17-1-14@400kg

Bottom row L - R

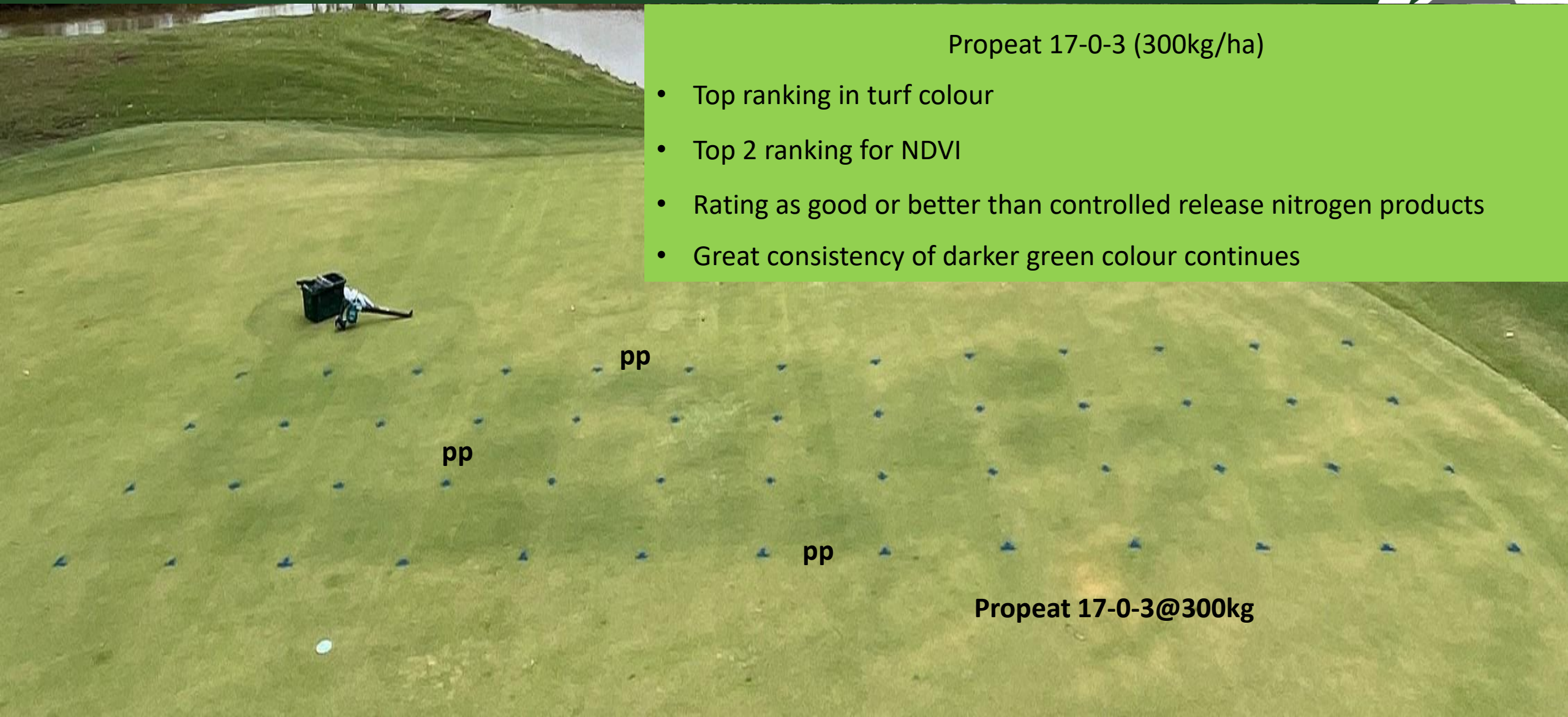
Noculate Complete 17-1-14@400kg
Propeat 17-0-3@300kg
Acitvate N 18-1-4@400kg

Propeat 17-0-3

- **Continued to rate highest NDVI readings**
- **Colour rating drops slightly to 2nd but 100kgs less per ha in application rate**
- **Great consistency of colour remaining**



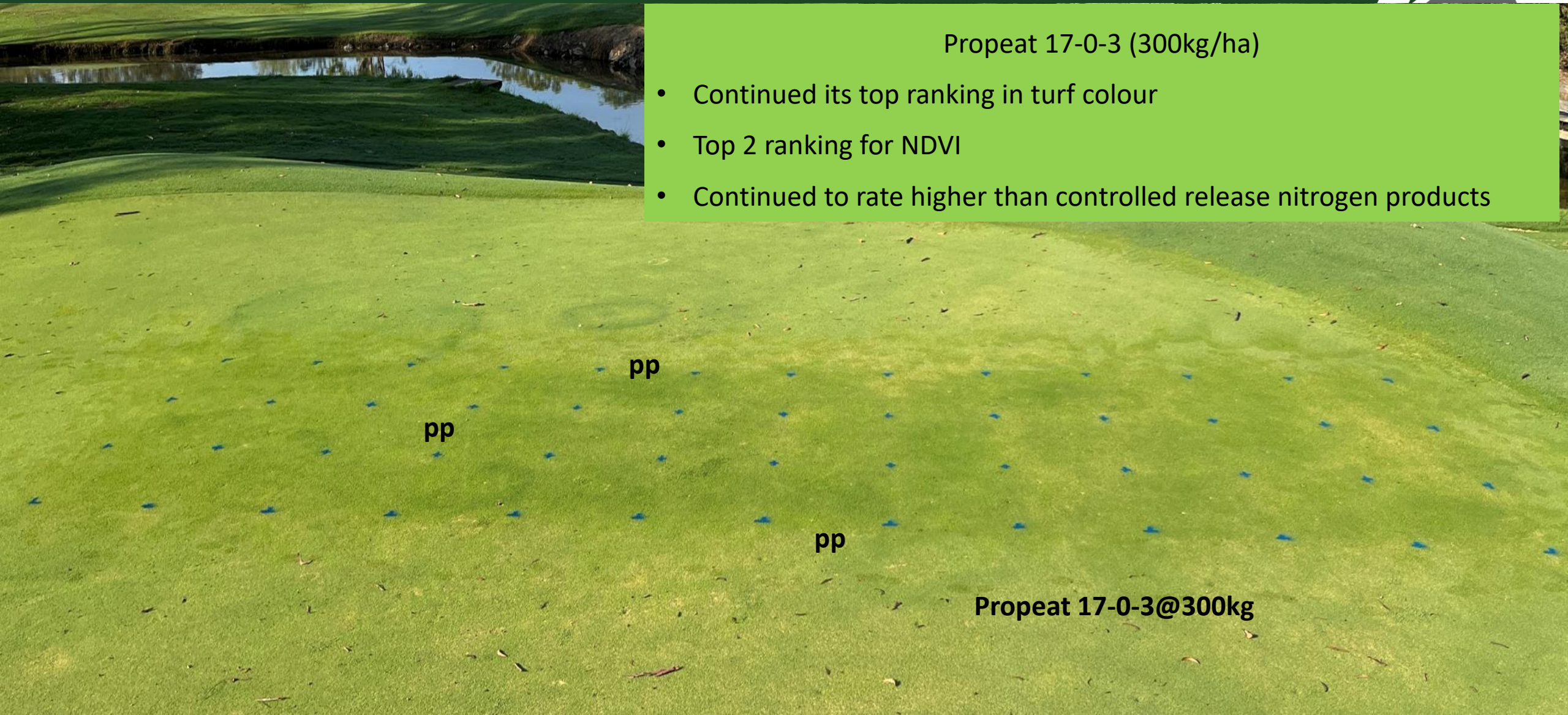
28 Days after application



Propeat 17-0-3 (300kg/ha)

- Top ranking in turf colour
- Top 2 ranking for NDVI
- Rating as good or better than controlled release nitrogen products
- Great consistency of darker green colour continues

42 days after application



Propeat 17-0-3 (300kg/ha)

- Continued its top ranking in turf colour
- Top 2 ranking for NDVI
- Continued to rate higher than controlled release nitrogen products

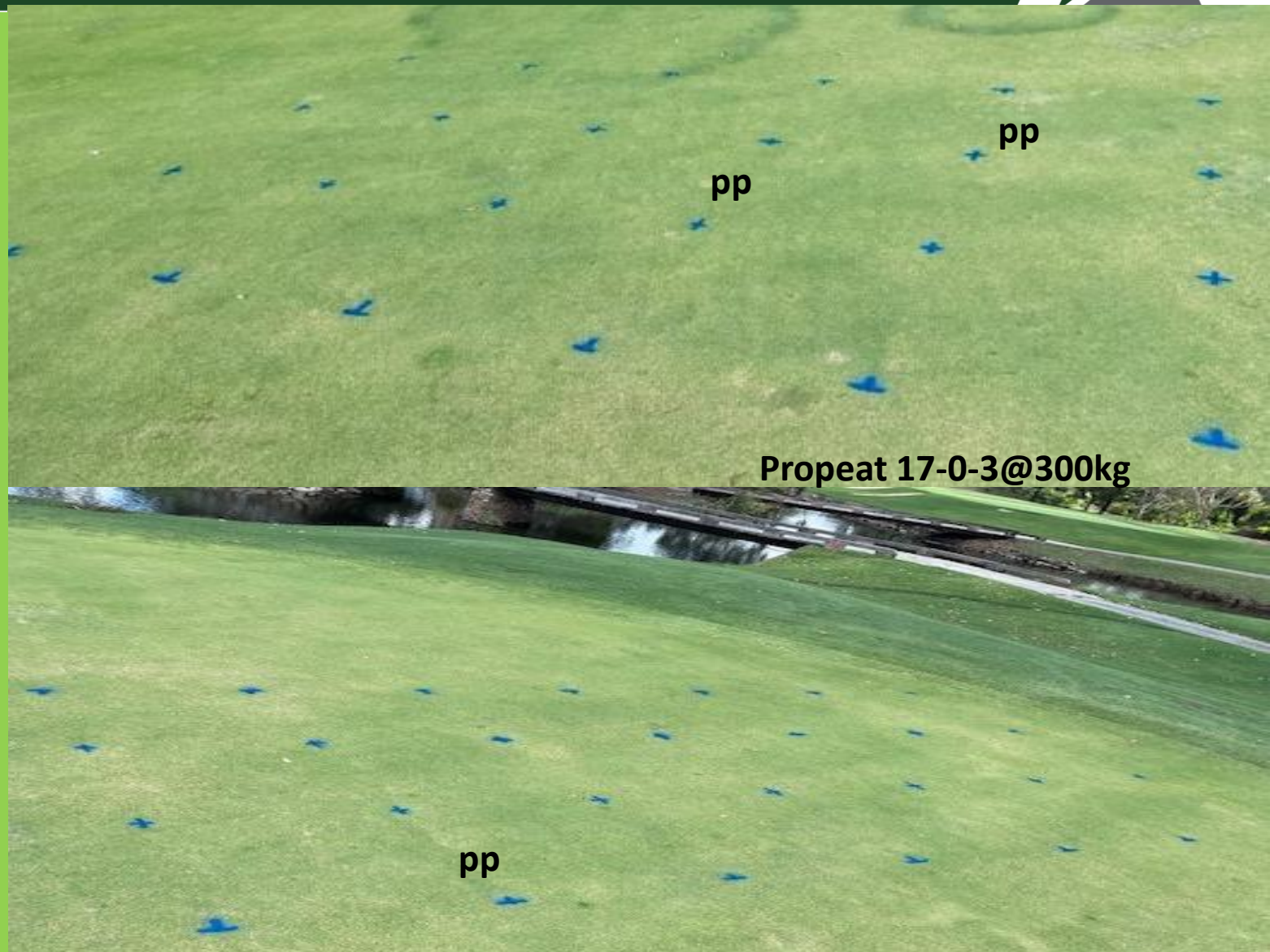
56 Days after application

Propeat 17-0-3 (300kg/ha)

- Consistently ranked highly for NDVI, turf colour and turf quality showing ongoing consistency of performance for 56 days.
- Continued to rate higher than controlled release nitrogen products

Propeat 7-1-11 (300kg/ha)

- performed consistently in turf quality across trial.
- Colour, although not as dark, was consistent across plot area
- Rated well against comparative NPK products



New South Wales – creeping bent golf green

Propeat 17-0-3 300kg/ha

NOTE: This trial was halted at 28 days due to surface interference.

- Propeat 17-0-3 at 300kg/ha showed from 7-21 days to have the highest turf quality visual ratings.
- Propeat 17-0-3 at 300kg/ha rate showed highest colour visual ratings at 7-days along with Noculate Complete 17-1-14 at 400kg/ha, and Propeat 7-1-11 at 300kg/ha all produced the following application.
- Propeat 17-0-3 at 300kg/ha rate showed from 7-14 days after application the highest turf quality rating. This was matched at 21-days with Terralift Activate N 18-1-4 at 400kg/ha rate.

Creeping bent golf green 7 days after application

- Propeat 17-0-3 300kg/ha produced the best turf quality and colour ratings
- Propeat 17-0-3 300kg/ha produced the most visually consistent green colour across plots

Propeat 17-0-3 300kg
Propeat 17-0-3 200kg

Propeat 7-1-11 300kg
Propeat 7-1-11 200kg

Creeping bent golf green 21 days after application

- Propeat 17-0-3 300kg/ha along with 7-1-11 300kg/ha rated highest in turf quality visual assessments
- No separation visually could be made across all treatments at 21-days. Interference at site was discussed and trial finalised.

Propeat 17-0-3 300kg
Propeat 17-0-3 200kg

Propeat 7-1-11 300kg
Propeat 7-1-11 200kg

New South Wales – Kikuyu fairway

- Propeat at 300kg/ha across the 17-0-1 and 7-1-11 skus at 7-days showed superior green-up alongside Noculate Complete, Black Label High Performance, and TX-10.
- From 28-days, elevated daytime temperatures (>30°c) across a 14-day period caused deterioration across the trial site with areas drought impacted and negatively reducing quality ratings.
- From 28-56 days of trial all treatments reduced in quality and colour ratings due to drying conditions.
- Fluctuating wet and dry conditions caused drops in NDVI and visual ratings throughout the trial. As rainfall improved 56 to 77 days, recovery returned and improved colour and quality, however no further fertiliser green-up was detected.

Kikuyu fairway 3 days after application

- At 3 days from application, no separation was detected across all treatments through NDVI, turf quality, and colour ratings.

Propeat 17-0-3 300kg

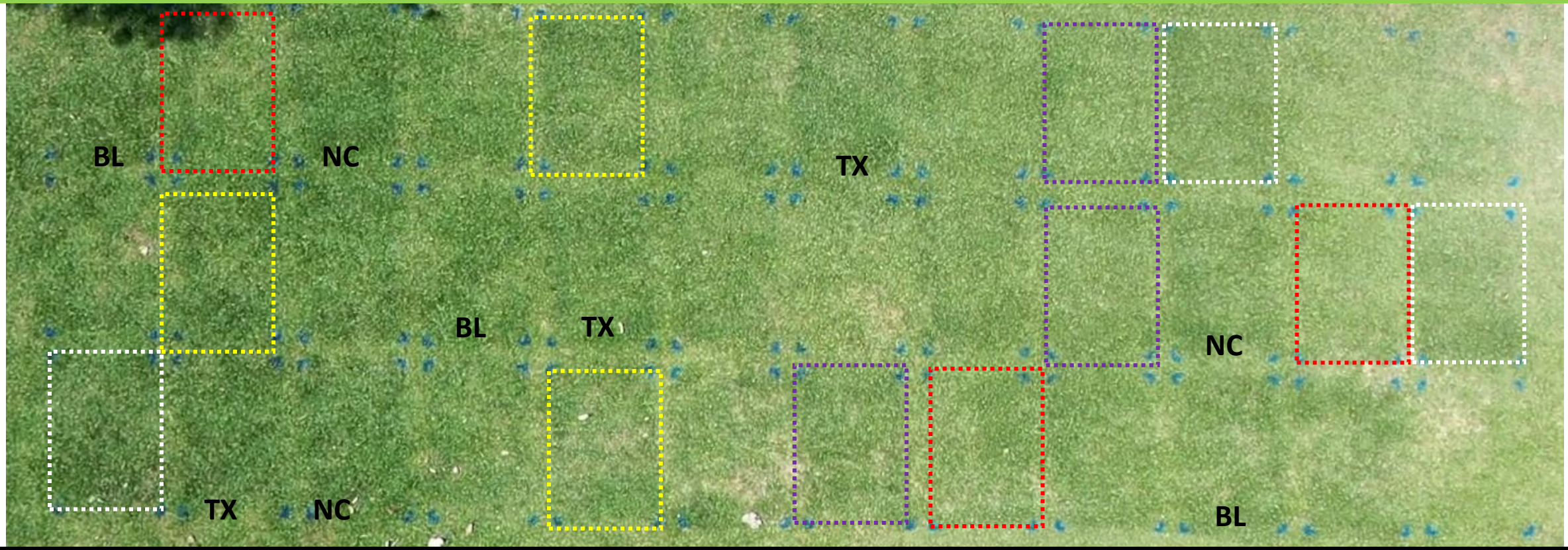
Propeat 17-0-3 200kg

Propeat 7-1-11 300kg

Propeat 7-1-11 200kg

Kikuyu fairway 7 days after application

- 7-days after application NDVI was enhanced across Propeat 17-0-1 300kg/ha, matched by Noculate complete 17-1-4 400kg/ha (NC), TX-10 5-2-8 400kg/ha (TX), and Black Label High Performance 150kg/ha (BL)

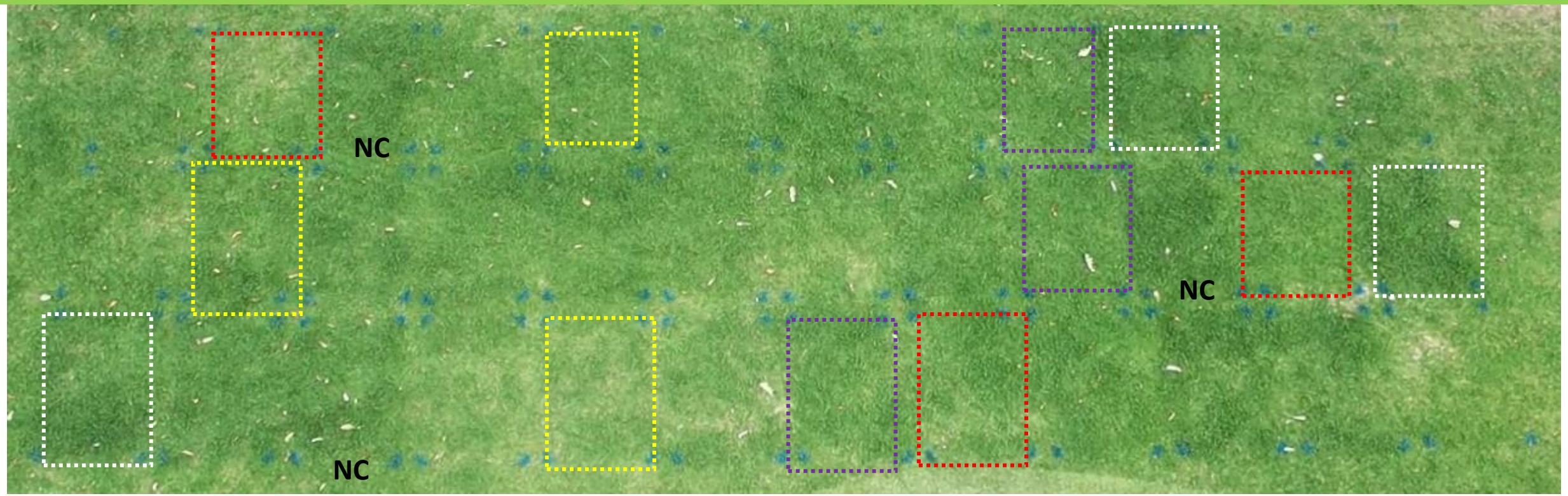


Propeat 17-0-3 300kg
Propeat 17-0-3 200kg

Propeat 7-1-11 300kg
Propeat 7-1-11 200kg

Kikuyu fairway 21 days after application

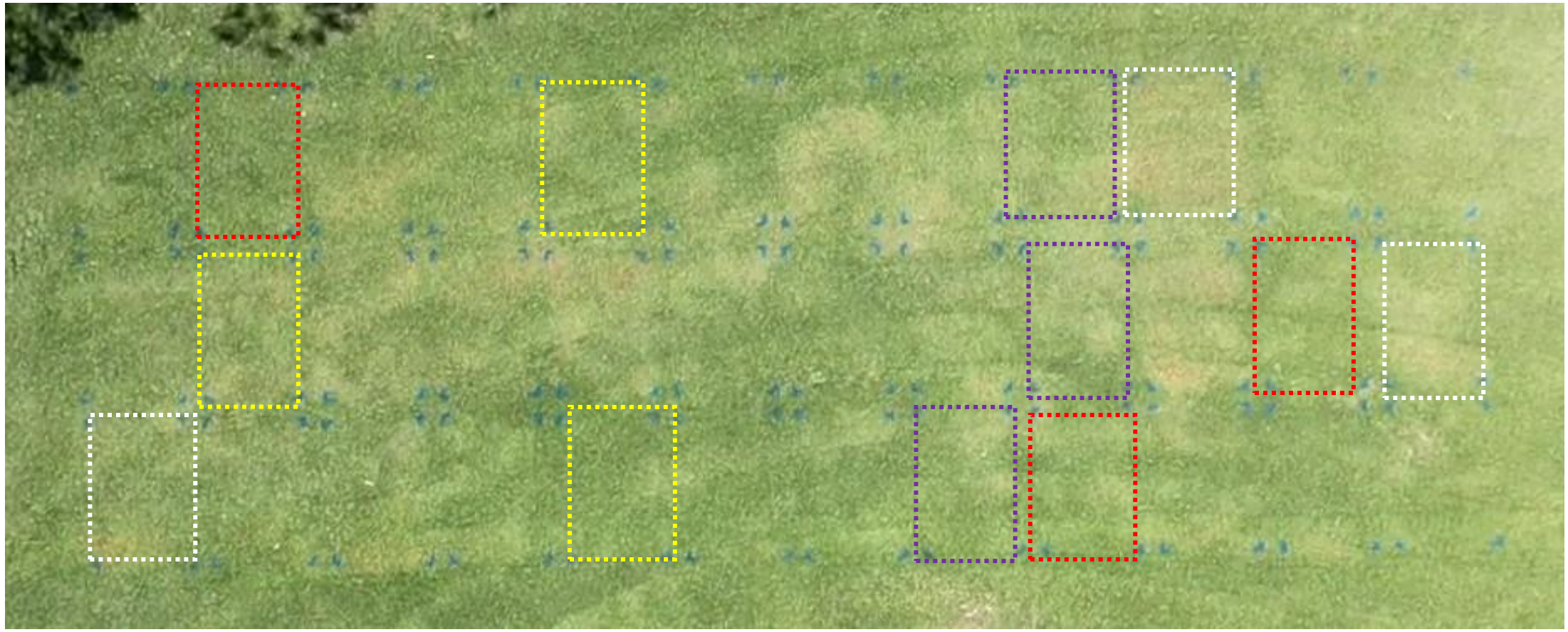
- 21-days after application visual colour ratings for Noculate complete 17-1-4 400kg/ha (NC) were highest on average but not statistically different to all Propeat fertilisers. Drought impacts were beginning to show.



Propeat 17-0-3 300kg
Propeat 17-0-3 200kg

Propeat 7-1-11 300kg
Propeat 7-1-11 200kg

Kikuyu fairway 28 days after application



Propeat 17-0-3 300kg

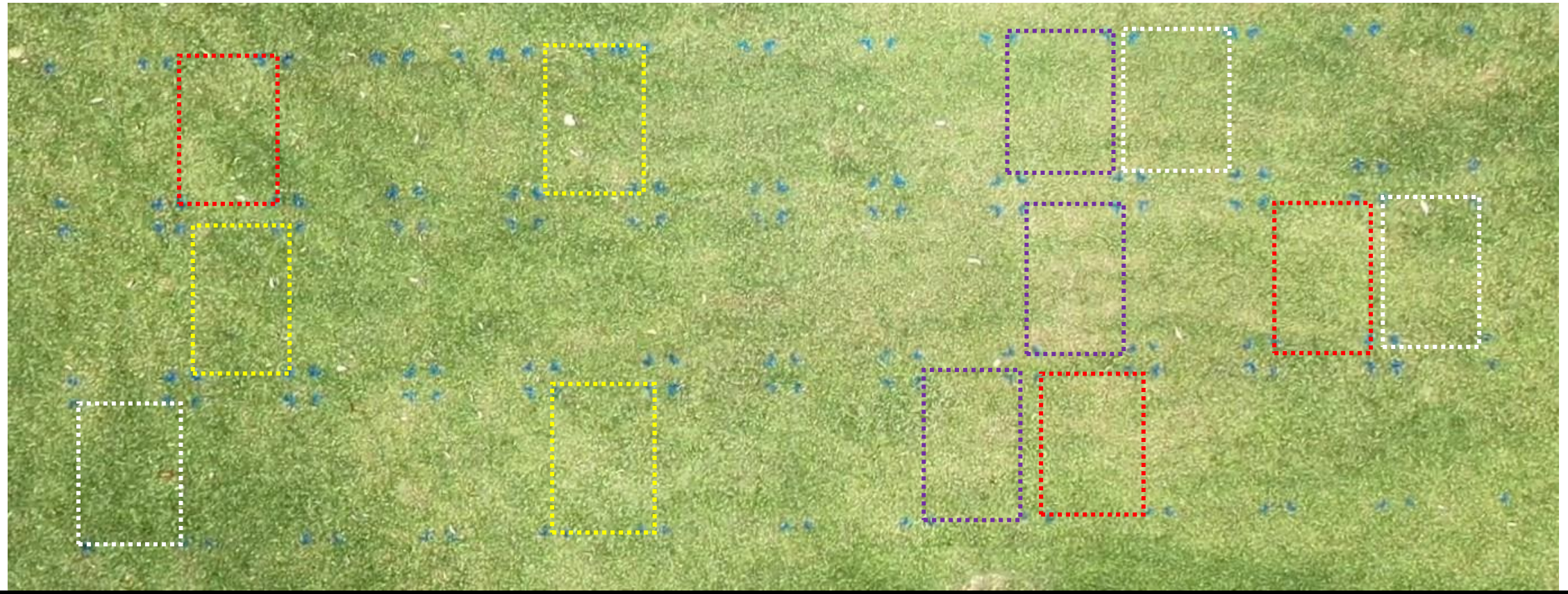
Propeat 17-0-3 200kg

Propeat 7-1-11 300kg

Propeat 7-1-11 200kg

Drought impacted as Sydney rose in temperature December

Kikuyu fairway 56 days after application



Propeat 17-0-3 300kg

Propeat 17-0-3 200kg

Propeat 7-1-11 300kg

Propeat 7-1-11 200kg

No signs of green recovery from any treatment

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Propeat trial end of slides

With thanks to

Dr Mark Walker and Liam Harper