



British Sugar topdressing trial updates

23 December 2022

objective:

- To assess the benefit of using TOPSOIL's Sports&Turf for use as topdressing on grassroots level football pitches.
- To compare the effect of different topdressing materials at different rates.

field site:

- One trial set up on a natural soil football pitch (native sandy soil) at STRI's research station in Bingley, West Yorkshire (UK).
- The pitch comprised an un-drained soil with a perennial ryegrass sward with annual meadow-grass invasion and maybe with some weeds creeping in to replicate a grassroots level pitch.

timing:

- The pitch received wear simulation from March to May in 2022 to replicate spring football pitch damage.
- First topdressing applied on 17 May 2022 on treatments [2] to [13]; second topdressing treatments applied on 01 June 2022 on treatments [4], [8], and [12].
- Wear simulation will start in August 2022.



treatment list



Trt.	Product	Rate per pitch (tonnes/year)	Rate (kg/m ²)	Plot size (m ²)	Rate per plot (kg)	Total material for each treatment (kg)	Total material (kg)
1	Untreated	-	-	2.0	-	-	
2	Sand	50	7.8	2.0	15.6	46.8	280.8
3	Sand	75	11.7	2.0	23.4	70.2	
4	Sand	75	5.85+5.85*	2.0	11.7+11.7	70.2	
5	Sand	100	15.6	2.0	31.2	93.6	
6	Sports&Turf	50	7.8	2.0	15.6	46.8	280.8
7	Sports&Turf	75	11.7	2.0	23.4	70.2	
8	Sports&Turf	75	5.85+5.85	2.0	11.7+11.7	70.2	
9	Sports&Turf	100	15.6	2.0	31.2	93.6	
10	Sand&Compost	50	7.8	2.0	15.6	46.8	280.8
11	Sand&Compost	75	11.7	2.0	23.4	70.2	
12	Sand&Compost	75	5.85+5.85	2.0	11.7+11.7	70.2	
13	Sand&Compost	100	15.6	2.0	31.2	93.6	

2022 key findings



- Dressing incorporation was significantly lower in plots that have 100 tonnes of any dressing applied per year. Sand & Compost at 100 tonnes per year had significantly lower incorporation than all other treatments. Sports & Turf with split application (75 tonnes in either one or two applications) has better incorporation than one big application.
- Applications of Sand and Sand & Compost at 100 tonnes covered the turf resulting in lower visual quality and sward density in comparison to other treatments.
- Sand at 37.5 + 37.5 tonnes per year and 100 tonnes per year had significantly higher surface hardness than all other treatments on one occasion. Through the playability phases in 2022, the sand treated plots generally had a higher surface hardness in comparison to other treatments.
- At the beginning of the playability phase, the untreated, Sand at 50 tonnes, Sand at 37.5 + 37.5 tonnes and Sand & Compost at 75 tonnes all had the highest traction.
- Sports & Turf at 37.5 + 37.5 tonne per year proved to be amongst the highest volumetric water content throughout. It was of the highest significance on two out of three occasions amongst treatments. On average, Sports & Turf treated plots had higher volumetric water content than Sand or Sand & Compost dressed plots.

topdressing applied on 17.05.2022



Temperature	Wind	Humidity	Surface	Cloud
16 °C	9 mph	80%	Dry	4/8



solid-tine cultivation



- Trial ground mowed at 25-mm in the morning
- Cultivation carried out by Wiedenmann Terra Spike XP6 (1.6-m) using solid-tines (300-mm length; 12-mm diameter)
- Average hole depth measured on the field: 185-mm
- Average hole distance measured on the field: 90-mm



topdressing application



- Topdressing material were weighed out in a bucket for each plot and applied by hand
- Plots, including the untreated control, were overseeded with perennial ryegrass at 30 g m⁻² (30 g per plot) during topdressing
- Topdressing material and seeds were brushed with a stiff-bristle broom to improve incorporation
- Rained (4-mm) on 17.05.18 after topdressing application; irrigation will be applied to help sand incorporation



aerial photos during treatment application



aerial photos during treatment application





aerial photos on 17 May 2022 (day of topdressing)



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

Trt.	Product	Rate per pitch (tonnes/year)	Rate (kg/m ²)
1	Untreated	-	-
2	Sand	50	7.8
3	Sand	75	11.7
4	Sand	75	5.85+5.85*
5	Sand	100	15.6
6	Sports&Turf	50	7.8
7	Sports&Turf	75	11.7
8	Sports&Turf	75	5.85+5.85
9	Sports&Turf	100	15.6
10	Sand&Compost	50	7.8
11	Sand&Compost	75	11.7
12	Sand&Compost	75	5.85+5.85
13	Sand&Compost	100	15.6

sand topdressing (treatments [2] to [5])



	Rep. 1	Rep. 2	Rep. 3
[2] Sand@ 7.8 kg/m ²			
[3] Sand@ 11.7 kg/m ²			
[4] Sand@ 5.85 kg/m ² (+5.85 kg/m ²)			
[5] Sand@ 15.6 kg/m ²			

Sports&Turf topdressing (treatments [6] to [9])



	Rep. 1	Rep. 2	Rep. 3
[6] Sports&Turf@ 7.8 kg/m ²			
[7] Sports&Turf@ 11.7 kg/m ²			
[8] Sports&Turf@ 5.85 kg/m ² (+5.85 kg/m ²)			
[9] Sports&Turf@ 15.6 kg/m ²			

sand(70%)/compost(30%) topdressing (trts. [10] to [9])



	Rep. 1	Rep. 2	Rep. 3
[10] Sand/compost@ 7.8 kg/m ²			
[11] Sand/compost@ 11.7 kg/m ²			
[12] Sand/compost@ 5.85 kg/m ² (+5.85 kg/m ²)			
[13] Sand/compost@ 15.6 kg/m ²			

19 May 2022 (2 days after topdressing)



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

30 May 2022 (2 weeks after topdressing)



01 June 2022 (day of topdressing on [4], [8], [12])



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

09 June 2022 (4 weeks after 1st topdressing)



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

24 June 2022 (6 weeks after 1st topdressing)



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

06 July 2022 (8 weeks after 1st topdressing)



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

26 July 2022 (11 weeks after 1st topdressing)



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

12 September 2022 (18 weeks after 1st topdressing)



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

12 October 2022 (22 weeks after 1st topdressing)



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

16 November 2022 (27 weeks after 1st topdressing)



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

02 December 2022 (29 weeks after 1st topdressing)



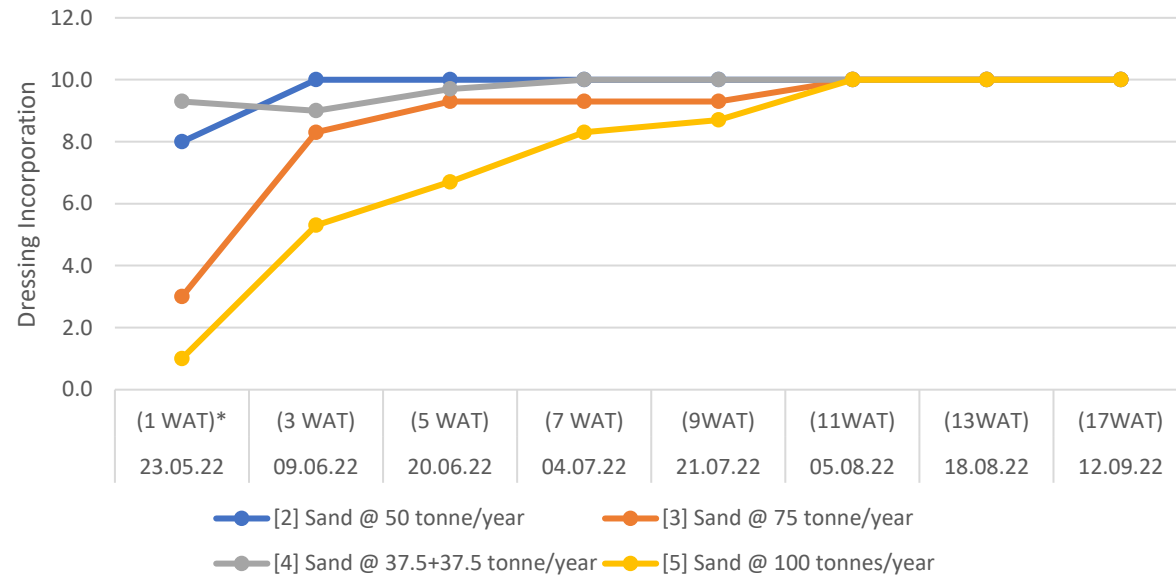
10	4	2	6	13	3	12
5	11	9	1	7	8	BLANK
1	2	3	4	5	6	7
8	9	10	11	12	13	BLANK
6	5	11	2	10	3	8
4	12	1	7	13	9	BLANK

20 December 2022 (32 weeks after 1st topdressing)

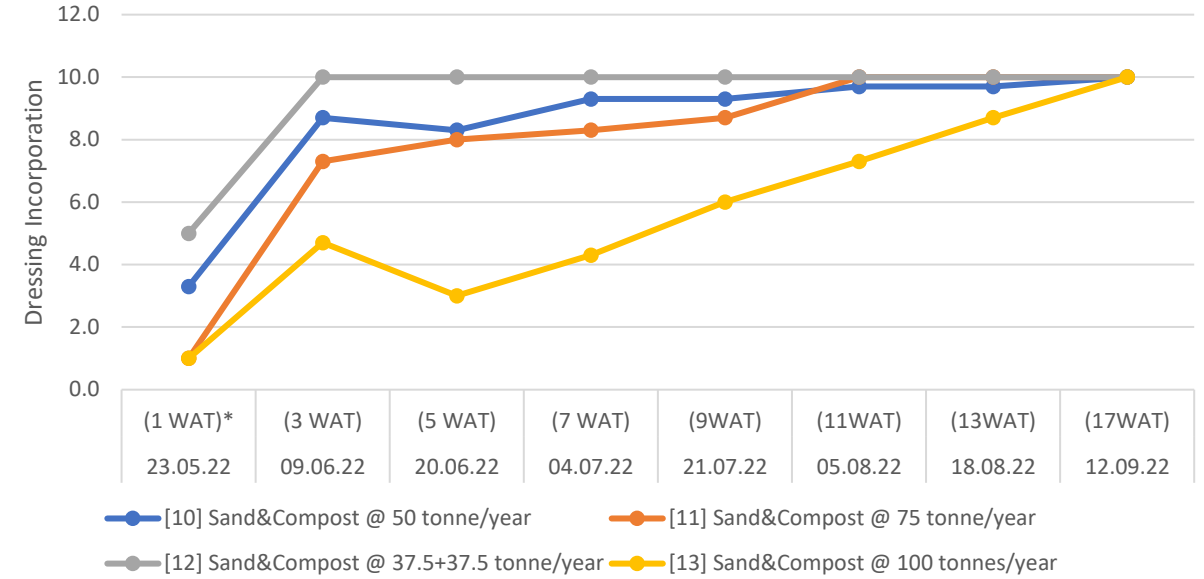


10	4	2	6	13	3	12
5	11	9	1	7	8	BLANK
1	2	3	4	5	6	7
8	9	10	11	12	13	BLANK
6	5	11	2	10	3	8
4	12	1	7	13	9	BLANK

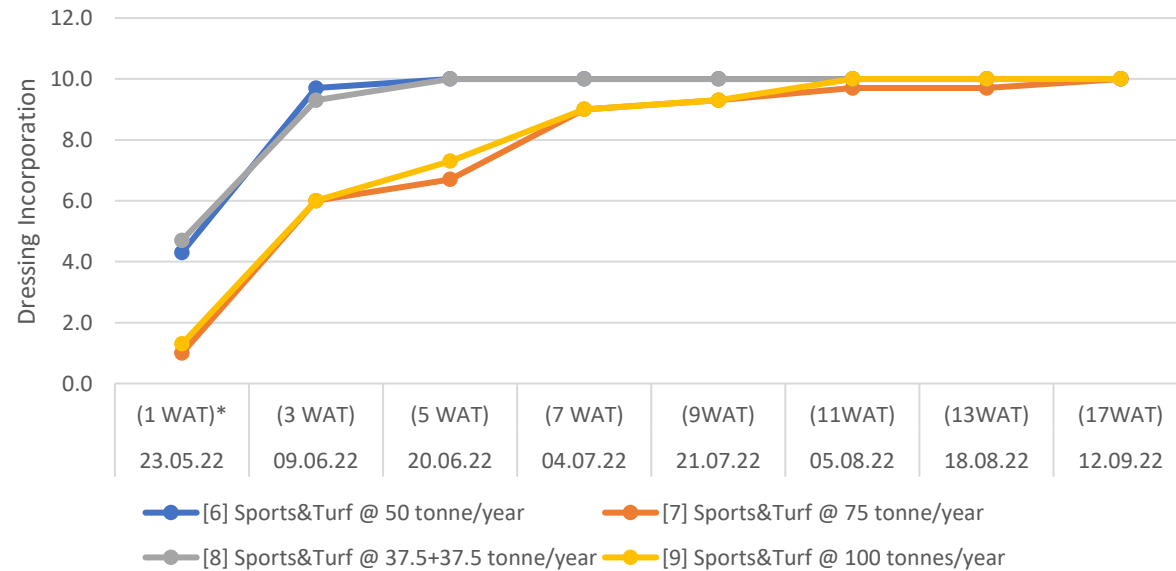
Dressing Incorporation of Sand Treatments



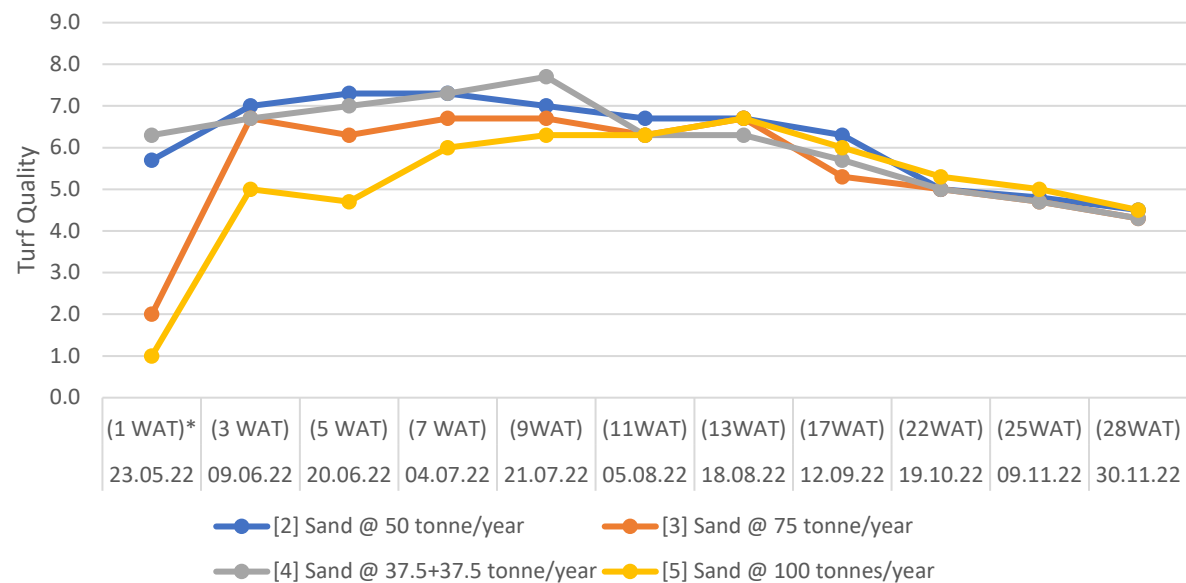
Dressing Incorporation of Sand and Compost Treatments



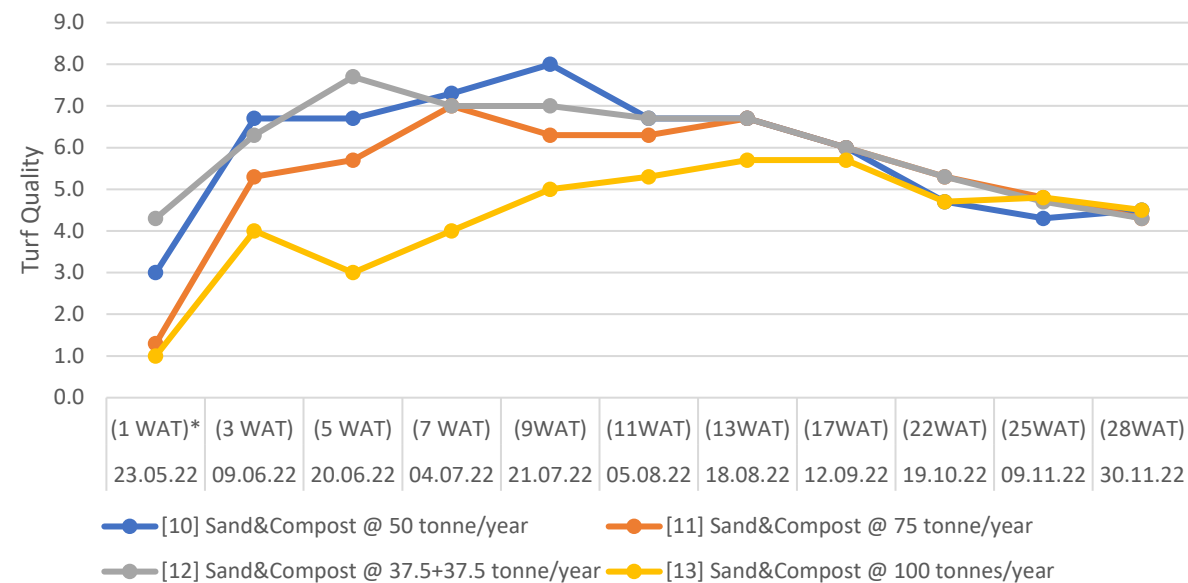
Dressing Incorporation of Sports and Turf Treatments



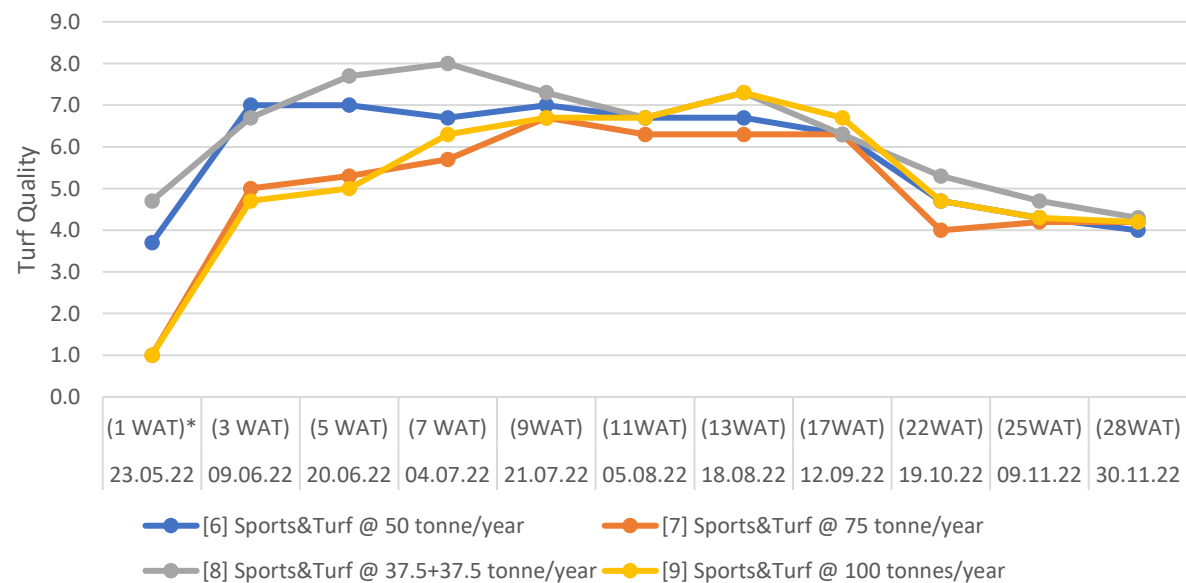
Turf Quality of Sand Treatments



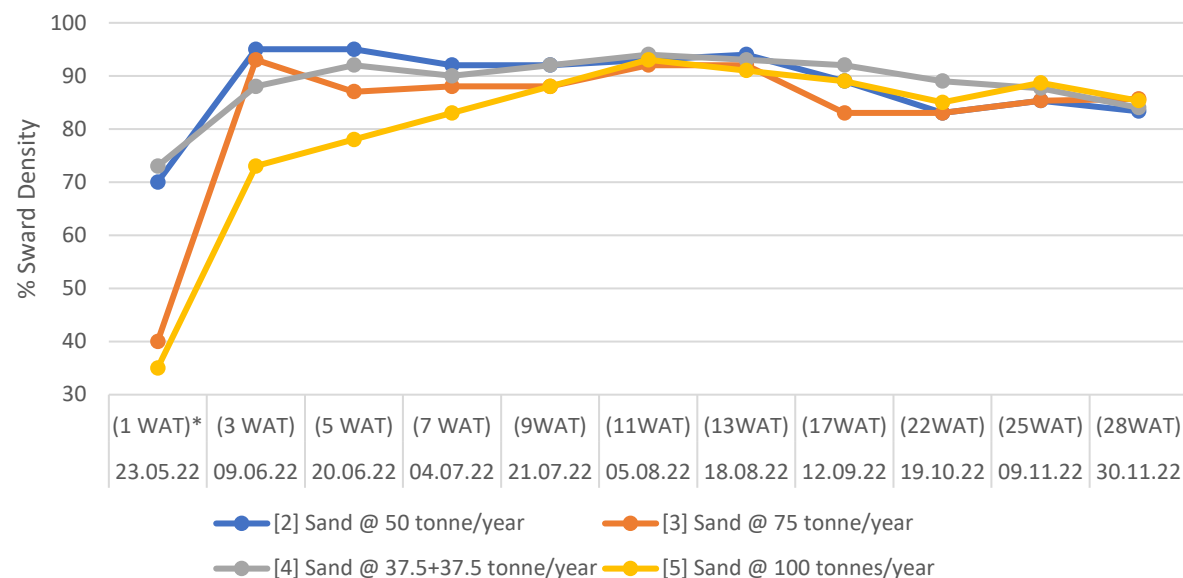
Turf Quality of Sand and Compost Treatments



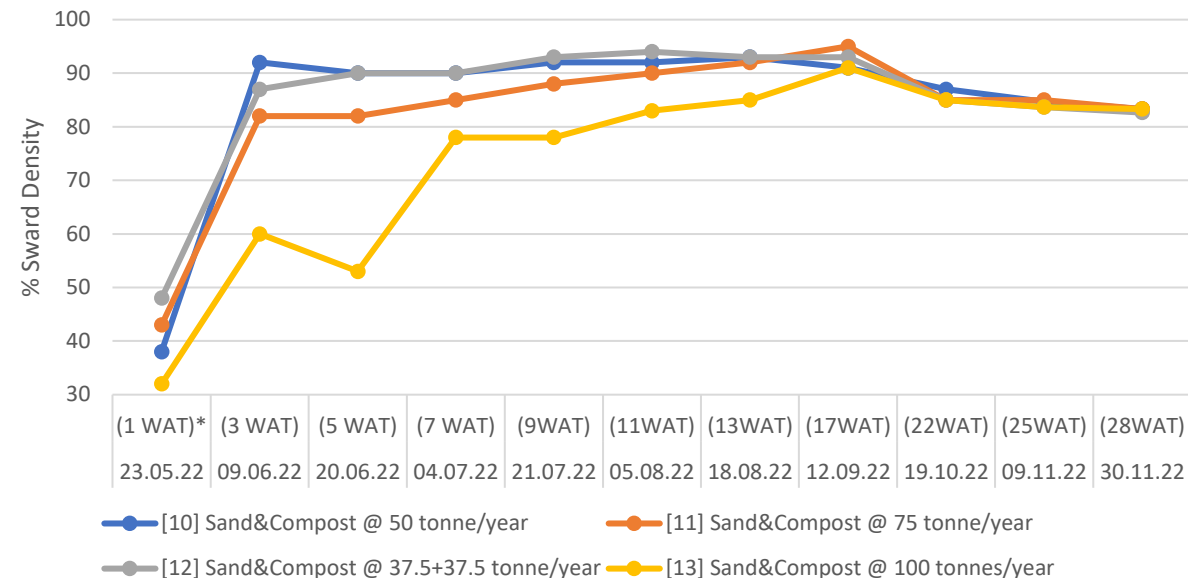
Turf Quality of Sports and Turf Plots



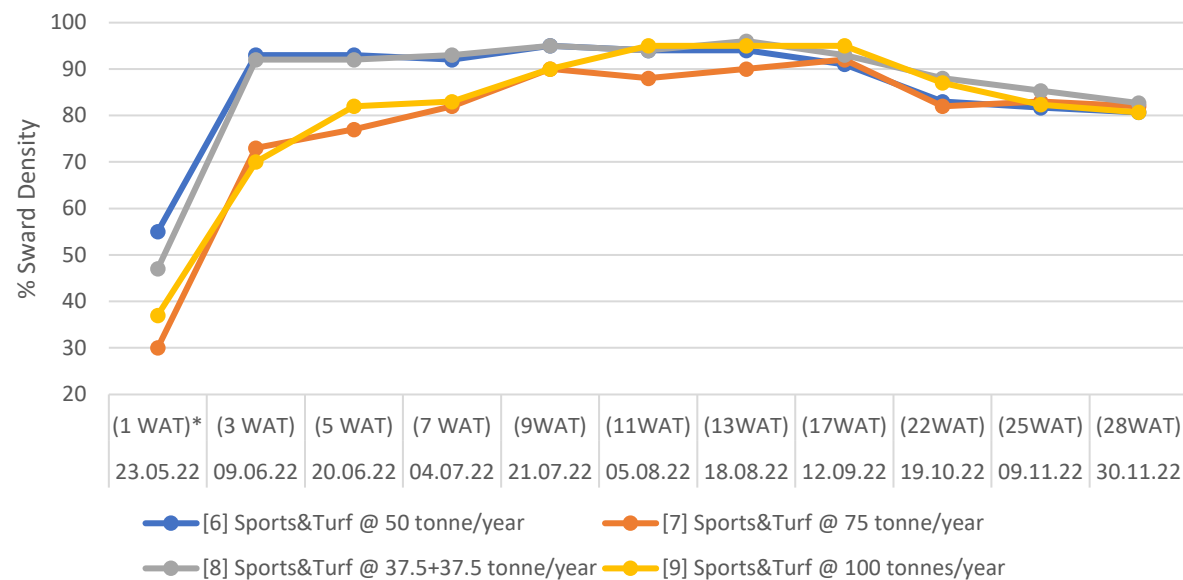
Sward Density of Sand Treatments



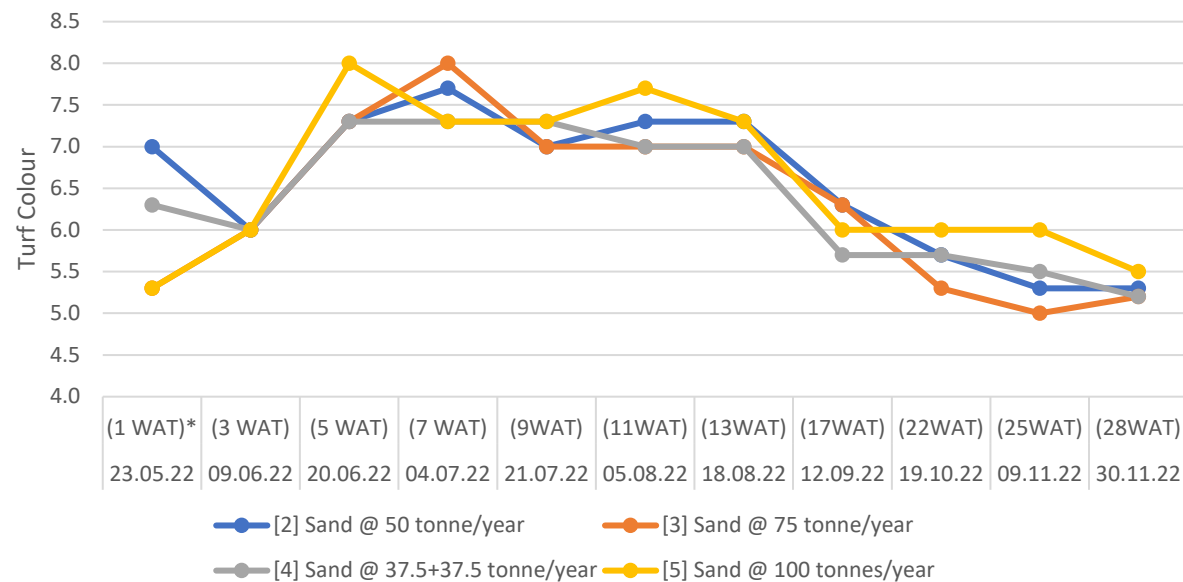
Sward Density of Sand and Compost Treatments



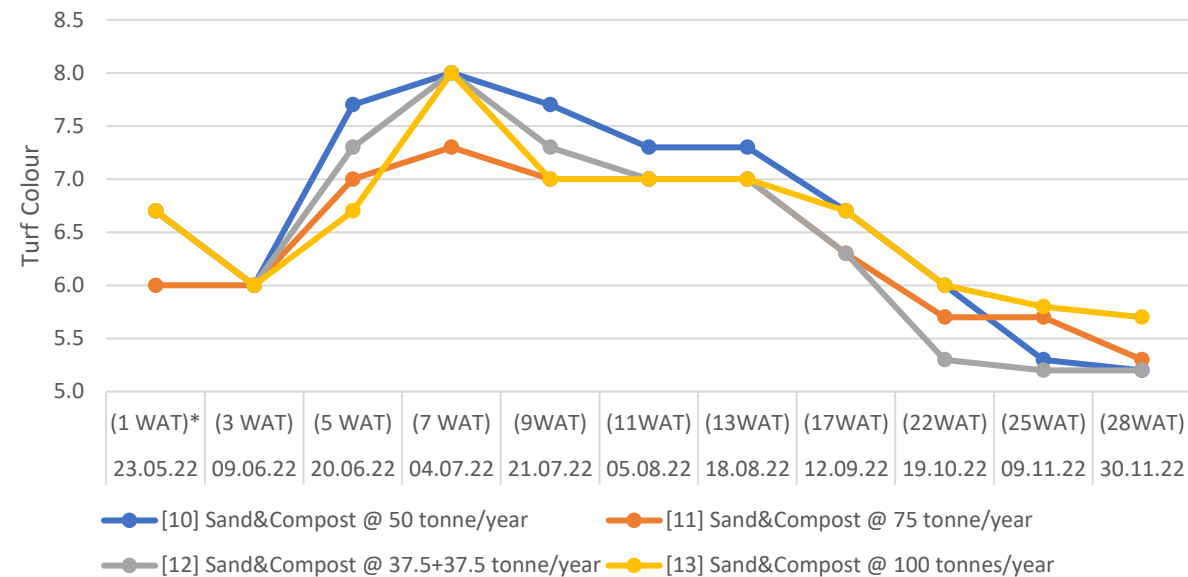
Sward Density of Sports and Turf Plots



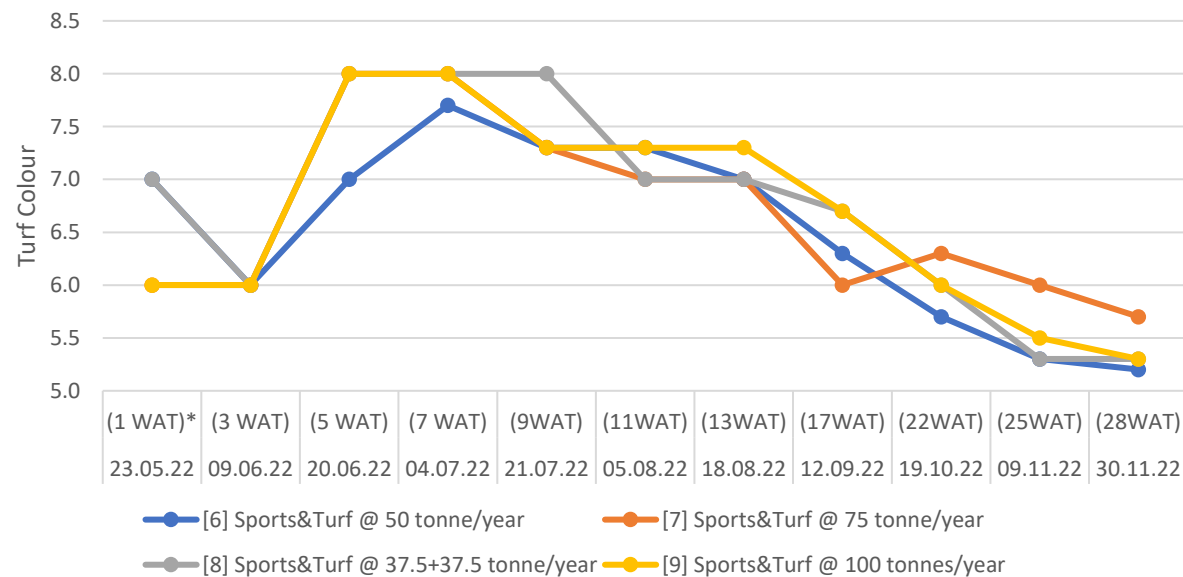
Turf Colour of Sand Top Treatments



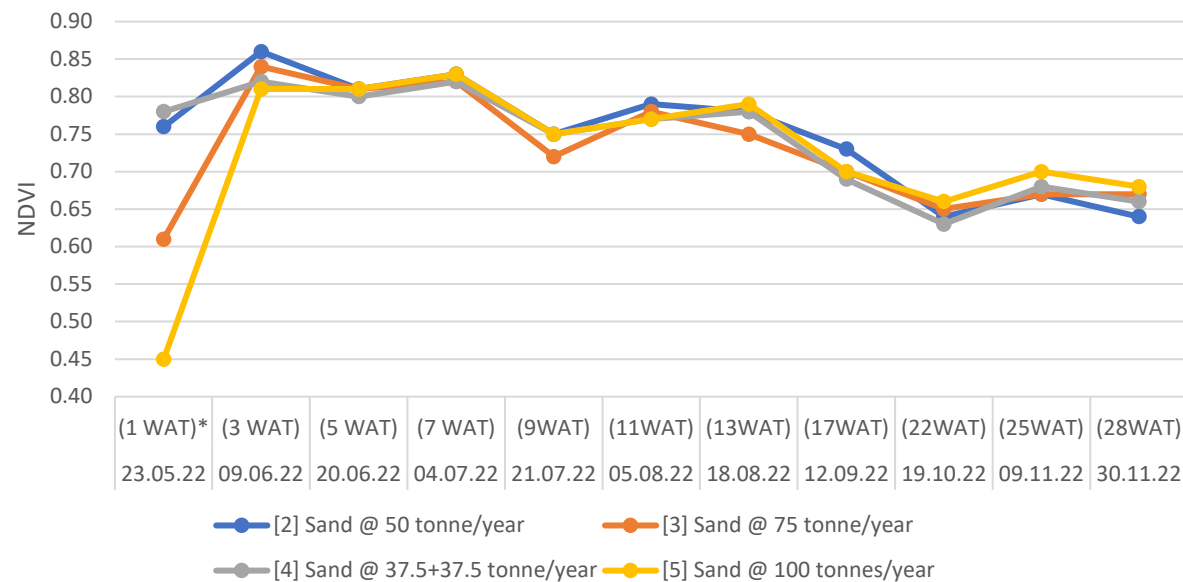
Turf Colour of Sand and Compost Treatments



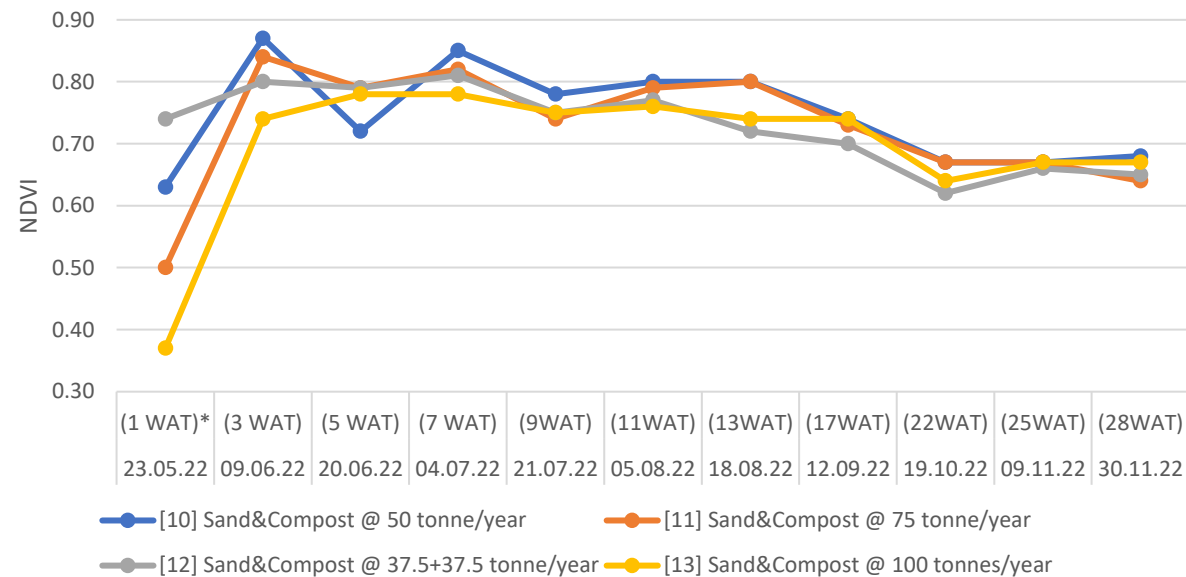
Turf Colour of Sports and Turf Plots



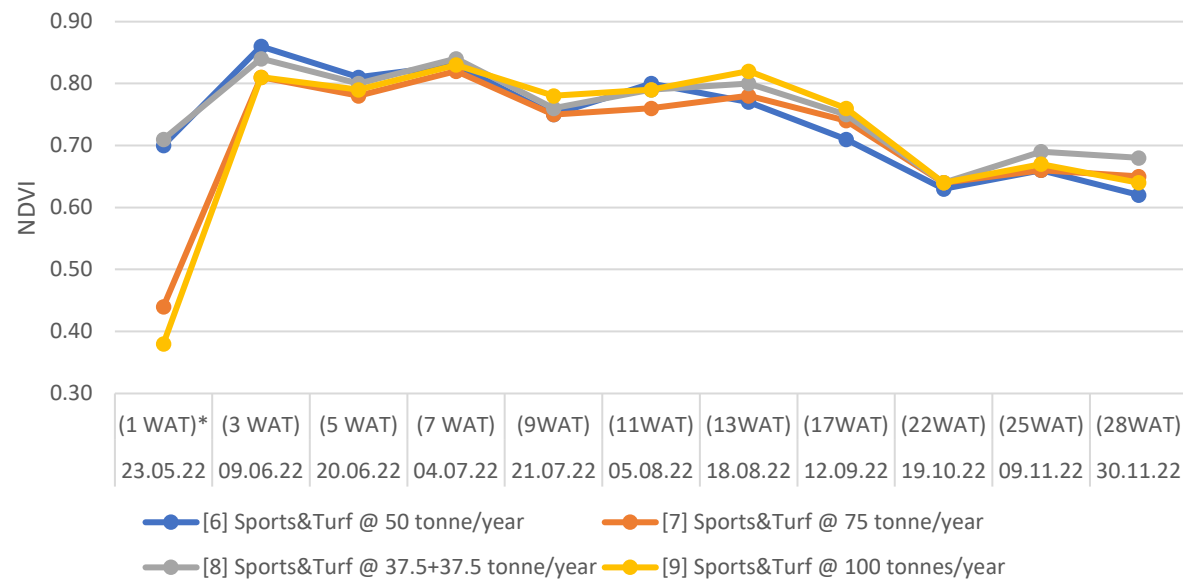
NDVI of Sand Treatments



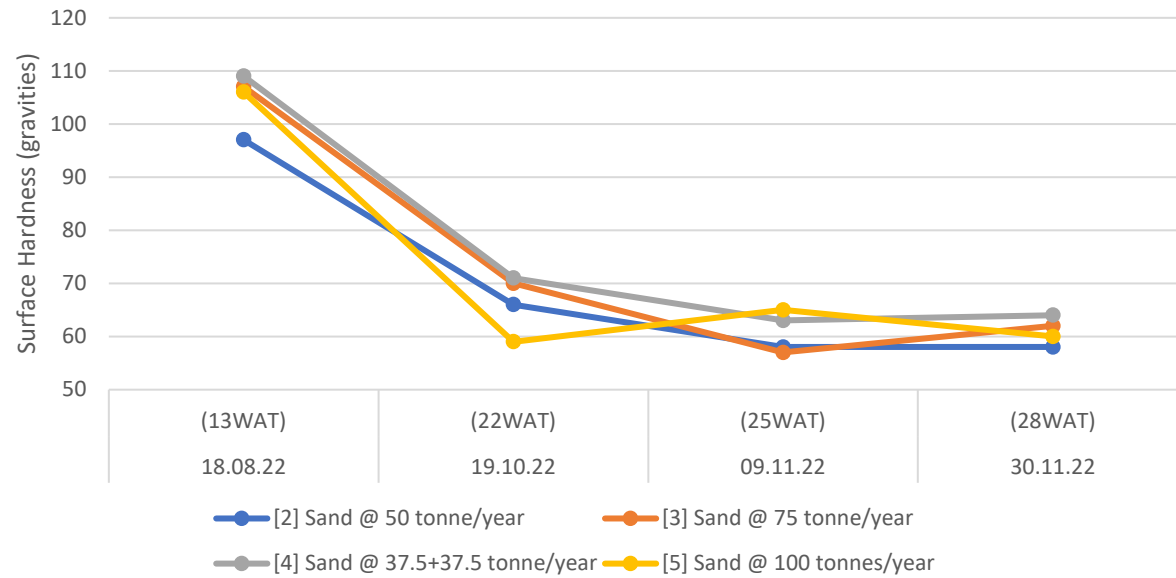
NDVI of Sand and Compost Treatments



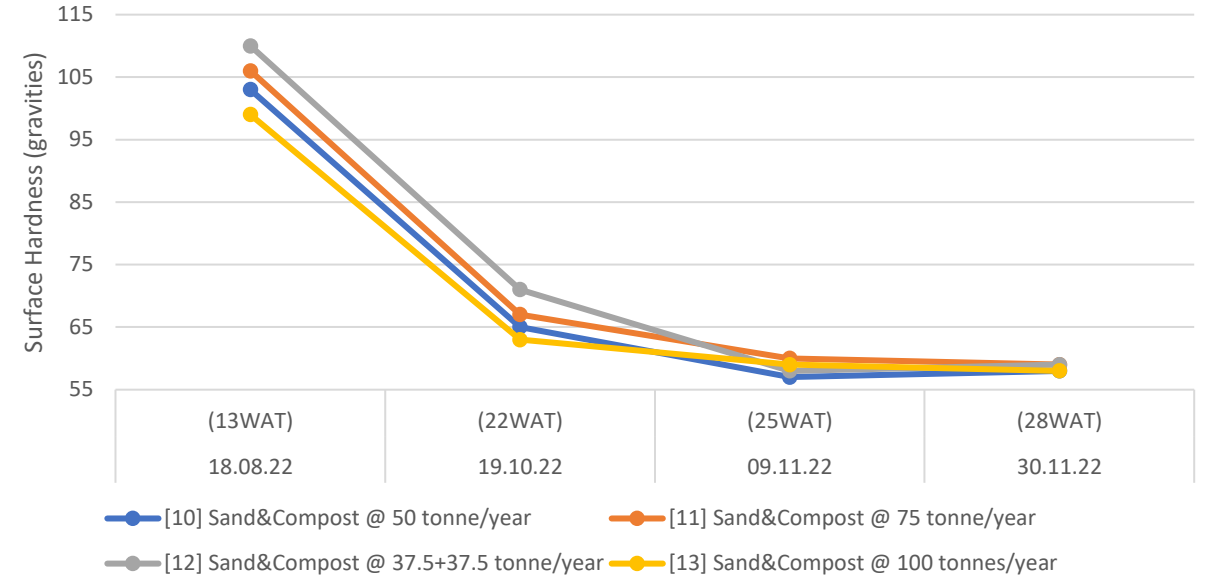
NDVI of Sports and Turf Plots



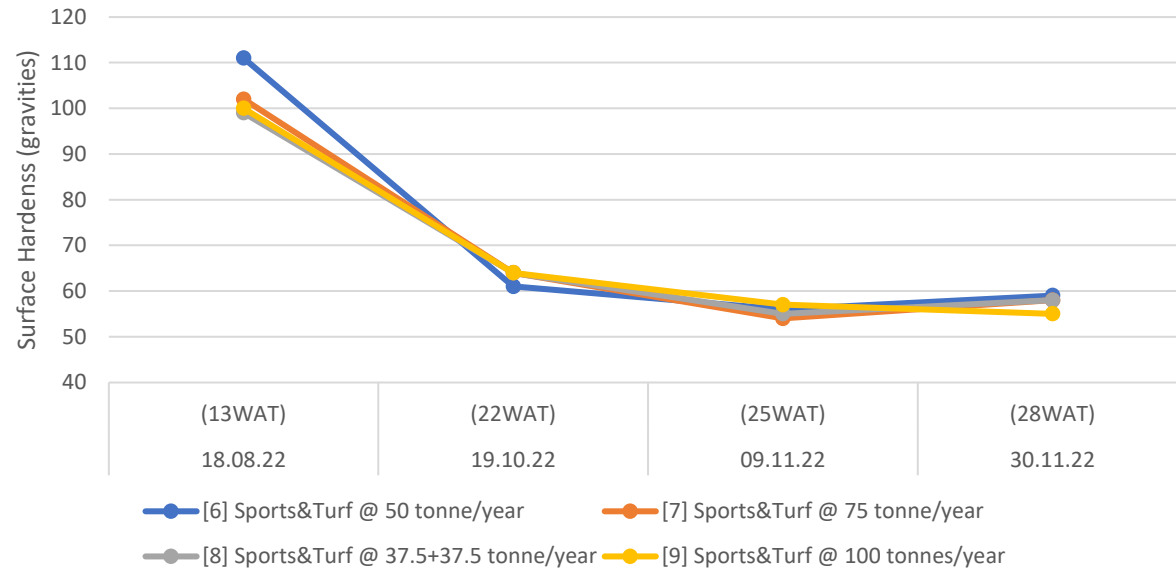
Surface Hardness of Sand Treatments



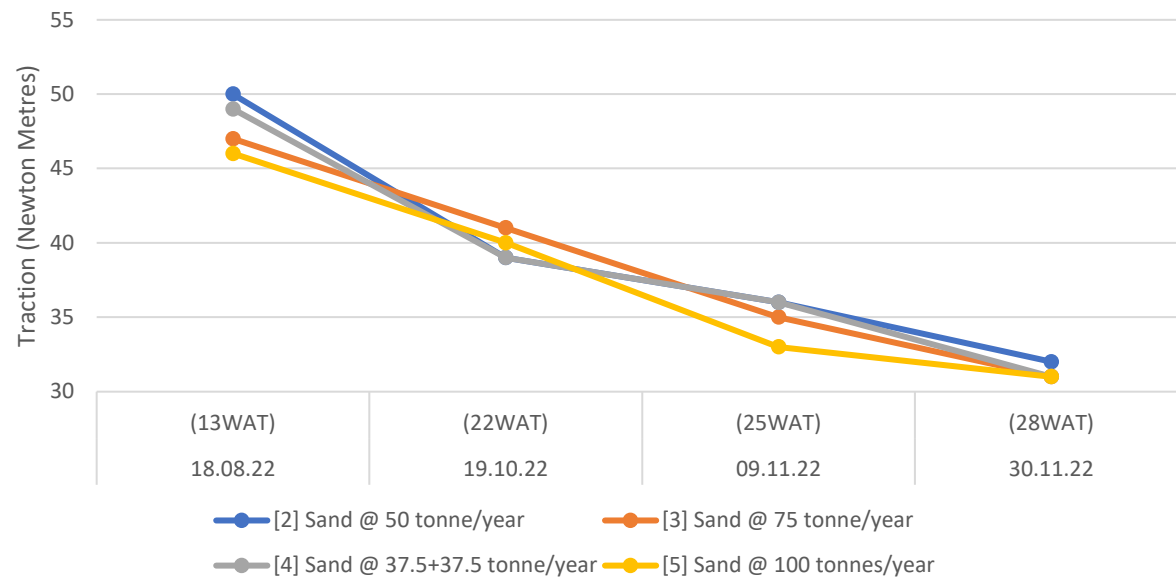
Surface Hardness of Sand and Compost Treatments



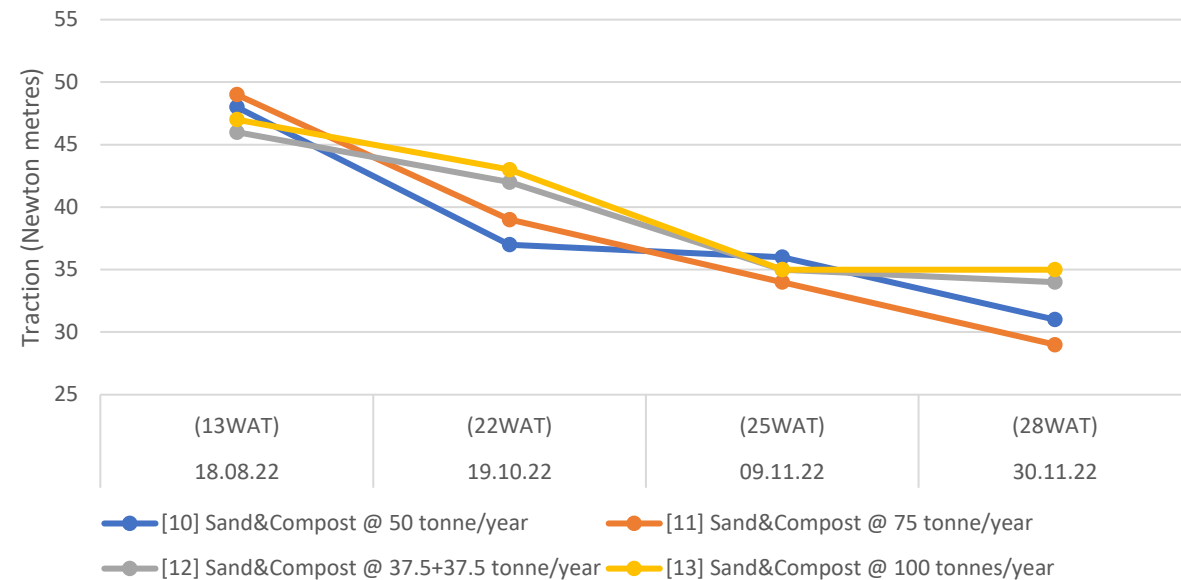
Surface Hardness of Sports and Turf Plots



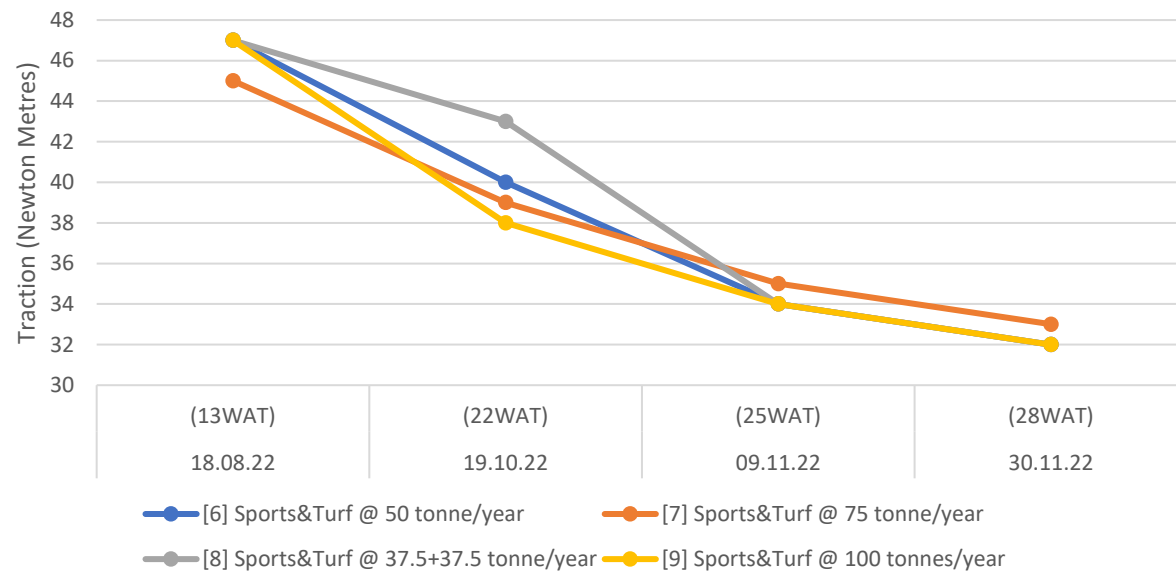
Traction of Sand Treatments



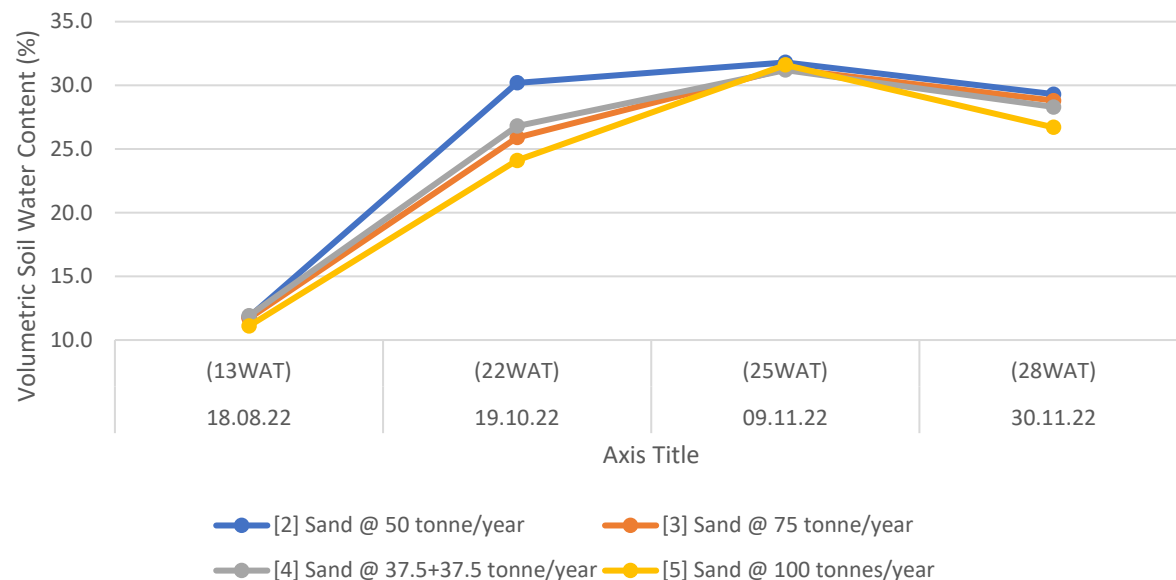
Traction of Sand and Compost Treatments



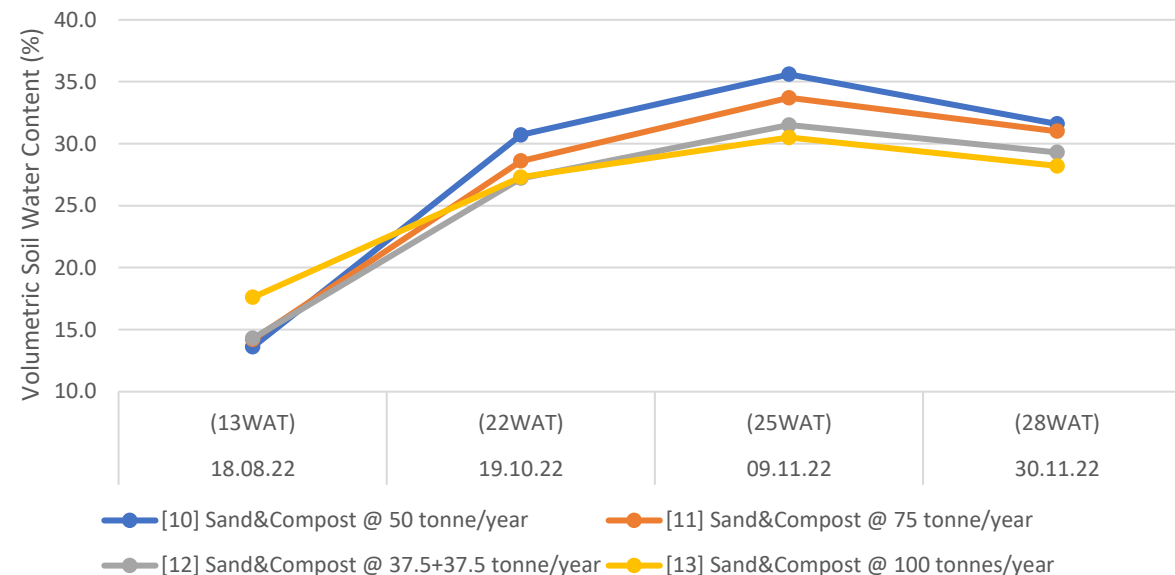
Traction of Sports and Turf Plots



Volumetric Soil Water Content of Sand Treatments



Volumetric Soil Water Content of Sand and Compost Treatments



Volumetric Soil Water Content of Sports and Turf Plots

