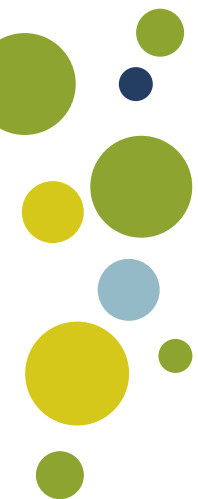




M O S M A R T
INVESTMENTS (PTY) LTD
Mosmart Africa Limited

MARINE 3, BOGEY FREE GOLF MAINTENANCE ST FRANCIS LINKS



What is Marine 3 ?



Marine 3 can be categorised as an environmentally friendly biodegradable surfactant but to do so would rob it of other properties that lift it to an unmatched status.

Marne 3 is also a wetter, de-agglomerator, emulsifier and anti static.

It has been researched and assessed in various applications over a period of 17 years by world renowned scientists, and still new benefits continue to emerge.

Its uniqueness derives from its unusual composition. Its primary ingredients are sea water, and salts and other proprietary IP.

Together they form an eco-friendly product that acts as a potent surfactant and biological stimulant.

Marine 3 has the unique ability to address four major challenges that groundskeepers and golf superintendents are continually called on to manage: 1. water usage , 2. sodium build-up in soils, 3. fertilizer costs, and 4. algae build up in water systems.

It reduces the surface tension of water which helps water infiltrate into the pore spaces in soil. These pore spaces are not readily accessible to untreated water.

This promotes a uniform spreading of the water through the soil which disrupts channelization. Soils therefore retain moisture levels for longer periods. In addition, its surface tension reducing property increases the spread of water over folio surfaces which dramatically increases absorption.



Reduces fertilizer usage

Marine 3 amplifies the efficiency of fertilizers. It achieves this through the combined effect of three of its primary properties:

It ensures better emulsion and de-aggregation of fertilizer solids into smaller particles incorporating them into tiny droplets which paves the way for simpler and more effective bio-remediation;

Its emulsifying capability holds particles in suspension for longer, thus resulting in better retention of fertilizer in the soil.

Its enhanced wetting agent properties ensure effective distribution of the fertilizer over turf grass surfaces and soil. In addition, Marine 3 itself is packed with minerals and nutrients from its sea water and plant based make-up. Adding all these benefits together results in less fertilizer usages at no expense to turf grass quality.

Stops algae infestation

Algae growth in water systems are a major challenge for groundkeepers. Algae and bio-film build-up causes ongoing blockages in the irrigation system, will damage turf grass if left unattended, causes unwanted odours, and is not aesthetically pleasing if it invades ponds and pools.

Marine 3 is a natural de-agglomeration agent. Treated water finds its way into the smallest places within the algae mass and efficiently breaks it apart halting proliferation.

Marine 3 eliminated the need for water sources with algacides and other chemically based solvents.

Not only does Marine 3 remove algae, its de-agglomeration property leaves water in ponds and pools substantially cleaner and clearer.

Marine3 is supplied in liquid form. It is safe to keep and handle.

It can be added to water storage tanks, ponds, pools, or injected direct into irrigation systems.



Reduces sodium build-up in soil

There is a natural accumulation of sodium in soil from fertilisers, pesticides, run off from shallow salt-laden waters, and the breakdown of minerals which releases salt. Build-up of sodium causes a rapid decline in soil structures and can severely reduce water absorption at root level.

The potential damage from salinity varies from mild discoloration, to wilting, and even turf grass death. Application of Marine 3 to soil has the unique effect of reducing unwanted sodium deposits, with studies confirming a potential reduction. This is an unprecedented benefit of using Marine 3.

Mosmart New Zealand have done extensive testing in the dairy industry utilizing the benefits of Marine 3. When applied to the dairy effluent ponds there is a biological proliferation of good bacteria. The water also absorbs much more nitrogen and when sprayed on the pastures and there is resultant notable increase in pasture growth.

NZ is suffering from a nitrate build up in their fresh water rivers and lakes. The government has passed legislation that farmers have to drastically reduce their nitrate inputs.

The test farm in NZ went from an average farmer to top five in NZ. He reduced nitrate usage by 80% and pushed his milk yield up by 20%. This resulted in Fonterra (worlds fourth largest dairy company) to begin trials at their Dartmouth plant and preliminary data show a 35% reduction in Sodium level in the soil along with dramatically reduced nitrate usage.





DairyBase
Platform for growth.

Physical Detail A

Ashmore Limited (Farm ID: 334142)
Dairy Season ended: 2019

Printed: 17 July 2019



Number in Benchmark Group:
Benchmark Group Selected by:
Benchmark Group Ranked by:

61
Physical analysis

Island : South Island

Spring only	Spring only	Spring only
151	186	
Milksolids (MS) Production to factory - (Seasonal year)		
Nitrogen applied for year	kg/ha	
Milksolids/ha	kg/ha	1,852
Milksolids/cow	kg/cow	497
MS/ha to 31st Dec	kg/ha	997
MS as % of liveweight		112%
10 day peak per cow	kg/day	2.15
Average Milksolids/cow/day	kg/day	1.8
Monthly production drop: Peak to 31Dec		11.7%
Days in Milk per cow		276

The graph above shows the dairy farm in NZ (Ashmore limited farms) using Marine 3 . Ashmore used 23 % less Nitrogen yet produced 33% more milk-solids/ha, this in comparison to 61 benchmark top farms on the South Island.

s by harvest (kgDM/ha) - As Reported by Pasture First Ltd

Trt	Product	Rate/ha	Harv 1 18/03/2022	Harv 2 21/04/2022	Harv 3 31/05/2022	Total to date	% of mean
1	Untreated	0	1451	1532	1774	4757	86.6
2	M1	2.0L/ha	1704	1796	2000	5499	100.2
3	M2	2.0L/ha	1689	1772	1912	5372	97.8
4	M3	6.0L/ha	1736	1845	1987	5567	101.4
5	M4	5.0L/ha	1749	1870	2106	5725	104.3
6	M5	150 mL/ha	1792	1855	2062	5708	104.0
7	Gypsum Urea	1500kg/ha 6kg/ha	1832	1907	2065	5804	105.7

The graph above depicts the ongoing trials at Fonterra's Dartmouth plant. It is amazing that 150ml /ha is competing with 1500 kg Gypsum and 6 KG urea. Comparing row 6 with row 7.



The St Francis Story

St Francis Links has become one of South Africa's best maintained golf courses.

St Francis Links was named South Africa's Best Golf Course at the 2021 World Golf Awards in Dubai.

St Francis Links occupies one of the finest links sites, built in high rolling dunes overlooking St Francis Bay and the Indian Ocean. The dunes stretch for kilometres and you could have built as many links here as there are at St Andrews.

Jack Nicklaus excelled himself as a designer with his varied challenges, short and long, wide and narrow, uphill and down, each hole complemented by exquisite greens complexes with bent grass surfaces that hold their own mysteries.

The course asks for brave shots and inventive ones. With cool season grasses it might not be a firm and fast-running links, yet it shouts links terrain of a magnificent quality from No 1 to 18.

The PGA Championship trophy has found a new home at St Francis Links through to 2023. The SA PGA is being held at St Francis in the first week of November.

The course superintendent is Charl Blaauw, he has been onsite since 2011 and has worked extensively with golf data (since 2001) one of South Africa's leading golf course and landscaping service who supply anything from design, construction through to maintenance.

Charl is now regarded as one of the top golf superintendents in SA and is held in very high regard by his peers.



Charl began using Marine 3 a year ago by introducing it into his buffer tanks before the water was sprayed on the golf course. It immediately became apparent that the filters on the course no longer had the same amount of algae build up and were much more easily maintained see comparison pics below.



Charl also noticed that the water seemed to be much more effective doing its job and got the confidence to start reducing his fertilizer consumption. This has been a gradual and steady process and he now feels comfortable to substantially reduce use his fertilizer consumption compared what he was using before the introduction of Marine 3.