TIFTUF

PROJECT CASE STUDIES

Smart Approved WaterMark

*Excluding Western Australia and Northern Territory

AusGAP CERTIFIED

Contents

PART ONE CASE STUDIES

PART TWO RESOURCES

The drought tolerant hybrid Bermuda Grass, forged by the best turf grass scientists

Australia's long dry summers and droughts can be brutal on lawns —and even more so on your water use and bill. TifTuf Bermuda Grass was developed by the world's leading turf scientist with this challenge in mind.

TifTuf Bermuda is the product of almost 25 years of research and development from one of the world's leading turf grass breeders, the University of Georgia. TifTuf has been hand selected out of almost 30,000 different Bermuda varieties, showing superior qualities in drought tolerance, shade tolerance, wear tolerance and winter colour whilst at the same time maintaining excellent turf quality.

High wear tolerance and self-repair capacity

The name says it all – TifTuf is tough! This variety has a very fine leaf blade with dense growth, making it ideal for a wide variety of applications. Its density enables it to handle high wear situations like backyards and sports fields whilst its fine blade ensures shade tolerance and a very soft leaf to walk on.

TifTuf bermuda grass has been scientifically forged to produce a great looking all-round lawn with superior qualities whilst requiring minimal inputs.

- Dense growth habit
- High wear tolerance
- Self-repairing
- Shade tolerant
- Fantastic winter colour and spring green up qualities

The science behind TifTuf

TifTuf was bred as one of 27,700 experimental bermuda grass genotypes. In 1999, ninety of the most promising genotypes were planted under a rainout shelter and evaluated through 2001 under deficit irrigation. Under this drought stress, TifTuf (tested as experimental name DT-1) maintained its quality and green colour the longest.

Prior to its release, TifTuf had been further tested in 19 drought-stress trials, 2 sports field wear tolerance trials, utilizing the Cady traffic simulator, and 4 irrigated, non-stress trials at The University of Georgia, The University of Florida, North Carolina State University, Oklahoma State University and Texas A&M University as part of the Federal Specialty Crop Research Initiative (SCRI) grant. It has now been determined that TifTuf will become the University research standard by which all drought tolerance will be determined.

10 year warranty

With every TifTuf Bermuda purchase, no matter how big or small, you will be issued with a Lawn Solutions Australia Product Warranty Certificate.

This Certificate is to ensure that you are receiving genuine TifTuf Bermuda. As a member of Lawn Solutions Australia house of brands, your purchase of TifTuf will also be covered by our nationwide warranty.

Available Australia wide

Contact your accredited Lawn Solutions Australia supplier now to find out how quickly you can enjoy a brand new TifTuf lawn. Available exclusively through the Lawn Solutions Australia network Australia wide.

Smart Approved WaterMark

*Excluding Western Australia and Northern Territory

TIFTUF

PRESS RELEASE, 22nd MAY 2020

Turfgrass First to Receive Smart Approved WaterMark

Lawn Solutions Australia is proud to announce that TifTuf Hybrid Bermuda has been formally recognised with the Smart Approved WaterMark for the following states and territories in Australia – QLD, NSW, VIC, TAS and SA (WA & NT excluded).

There is a new benchmark for drought tolerance in turfgrass in Australia.

The Smart Approved WaterMark is a water conscious certification provided to products so that consumers can identify and access the most water efficient products available on the market.

*Excluding Western Australia and Northern Territory

The Smart Approved Watermark was established by the Water Services Association of Australia (WSAA), Irrigation Australia, The Nursery and Garden Industry Association and the Australian Water Association, to provide an identifiable label for consumers so that they can make informed choices when choosing products, services and organisations that use water efficiently, reducing per capita water consumption and helping in the end goal of preserving such a precious resource.

TifTuf Hybrid Bermuda

Australia's long dry summers and droughts can be brutal on lawns —and even more so on your water use and bill. TifTuf Bermuda Grass was developed by the world's leading turf scientist with this challenge in mind.

In order to receive the Smart Approved WaterMark, there is a significant process that is undertaken and a strict set of criteria the product needs to adhere to. A technical expert panel independently assesses the applications of products and services undertaking the accreditation process. The panel of seven members, including an independent chair who represents international expertise in the field, examine all aspects of the product application and the associated evidence of water efficiency.

After many years of extensive independent testing and research, TifTuf Hybrid Bermuda is the first and only turf grass to receive this for drought tolerance in Australia or anywhere in the world.

Campbelltown Sports Stadium

TIFTUF HYBRID BERMUDA WINS MORE FANS AS THE CAMPBELLTOWN SPORTS STADIUM GETS AN UPDATE.

Rhizome growth

Greater Western Sydney (GWS) is Australia's highest population and economic growth area, shouldering the brunt of the metropolitan sprawl that is spilling out of Sydney city. One out of every eleven Australian's reside in the GWS area that expands from Windsor in the north to Campbelltown in the south, and from Parramatta in the east to Penrith and the Blue Mountains in the west.

Greater Western Sydney is home to 1.9 million people and its population is projected to reach 3 million by 2036 and absorb two thirds of the population growth in the Sydney region. Inevitably, along with this accelerated growth in population comes demand for improved services and facilities to accommodate expanding business and entertainment needs.

This demand has had an impact on Campbelltown Sports Stadium, with the venue recently securing the new A-League team for the 2021 season and scheduled to share the West Tigers NRL games from 2019. The future increase in use of the surface and pressure of having televised games triggered the decision to have the surface of Campbelltown sports stadium replaced.

The project began in October 2018 with tender submissions from several businesses who viewed the opportunity to complete the resurfacing. The project was won by The Green Horticultural Group and the initial decision was made to run with Legend Couch as the replacement surface. Through November and December 2018 though, issues with supply of the ordered grass meant that the council had to look for alternatives.

Campbelltown Council and the Green Horticultural Group (GHG), in consultation with Lawn Solutions Australia, AusGAP and MusTurf the Lawn & Turf company, made the decision to go ahead with the project but replaced the intended Legend Couch with TifTuf Hybrid Bermuda. The stadium was resurfaced in December 2018 with TifTuf, the latest and most advanced sports turf available in Australia, supplied and installed by Patrick Muscat and the team at MusTurf.

Campbelltown Sports Stadium is the first major sporting surface in NSW to use this new turf and Campbelltown Council, GHG and grounds curator Michael Sutton are excited to be part of this experience, with the turf showing great promise.

The Green Horticultural Group began the process in November 2018 with three applications of glyphosate applied to the stadium surface to ensure that the existing grass was completely eradicated. A Field Top Maker and tippers where then brought to site to commence turf and sand removal at approximately 70mm into the sand/ thatch layer. 900 tonnes of sand was then spread to a depth of 70mm across the entire surface and laser levelling was undertaken to establish the final levels and to consolidate the surface.

The irrigation system was checked and recommissioned and final laser levelling to the surface was completed in December 2018. The TifTuf Hybrid Bermuda was cut, washed and hand laid over five days, then lightly rolled onto the surface of the growing medium. Only six days after the installation was completed the whole surface was mown, highlighting the amazing establishment speed of TifTuf.

In early January 2019, the entire surface was scarified to level and reduce thatch, before being fertilised and top dressed using approximately 160 tonnes of sand. Curator Michael Sutton of GHG was very impressed whilst recording growth and establishment of the new surface:

- Root establishment of 40 – 70mm five days after last roll being laid.
- Cutting the entire profile commenced a day later (six days after completion).
- A minor surface renovation was undertaken four weeks after completion, which included scarification, fertilisation and top dressing.
- Root depth ranging from 100-150mm - five weeks after completion.

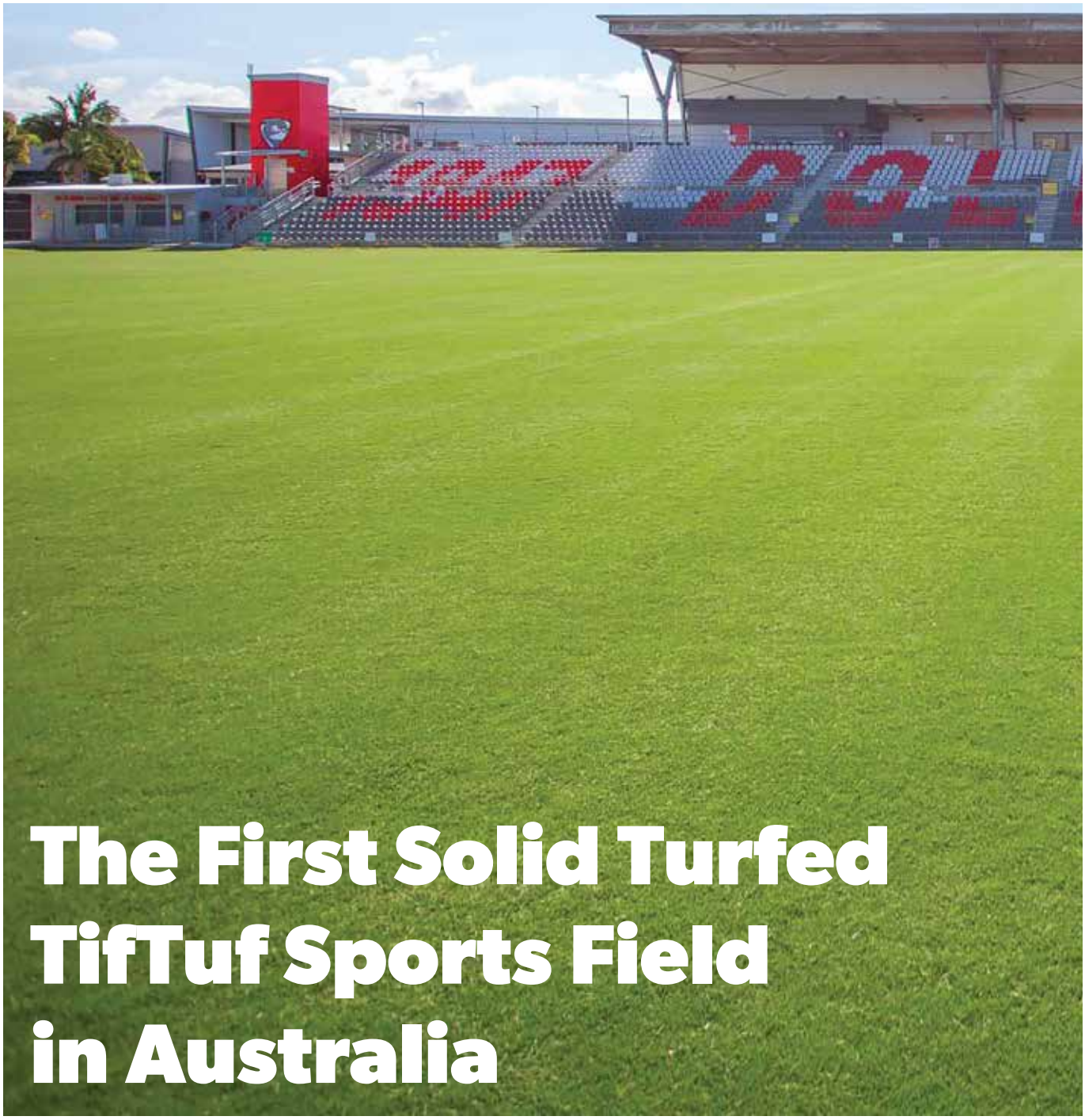
Michael Sutton oversaw the whole project, ensuring the stadium surface was in pristine condition ready for its first major test held in February earlier this year, the A-League fixture between Wellington Phoenix and Sydney FC.

TifTuf is already enjoying success in several fields in Queensland and northern New South Wales due to its reduced requirements for irrigation and nutrients, and unmatched wear resistance and recovery time. Victorian sports venues are also beginning to install TifTuf Bermuda, due in part to its exceptional winter colour retention, and also the amazing performance it shows in high pressure situations. A versatile and aesthetically pleasing turf, TifTuf is already proving to be the Australian sports turf of the future.

Turf laying begins

Top dressing one month after laying turf

Rhizome growth



The First Solid Turfed TifTuf Sports Field in Australia

The Dolphins required a full oval reconstruction and Lawn Solutions Australia member Twin View Turf (TVT) were initially contacted by ground manager Paynter Dixon to quote on the project. Twin View Turf had completed renovation works at the Redcliffe Leagues Club many times in the past and the club had requested them as a preferred supplier.

This was a full oval reconstruction by Twin View Turf and was handed back to the club last week after its maintenance period.

Why was TifTuf chosen?

The ground was originally specified as Wintergreen Couch as the club wanted the same turf type as the Sunshine Coast Stadium. But after Twin View Turf had showed them a sample of TifTuf and given them information about the significant advantages it had over Wintergreen, they started to reconsider. Malcom Caddies Ground Manager for Suncorp Stadium was also very interested in swapping over to TifTuf from Legend Couch at the time and this ultimately encouraged the Dolphins that TifTuf was the best option for them also.

Twin View Turf were awarded the job on the 5th October and works commenced in mid-November to install the very first TifTuf sports field in Australia.

Trent Hobson was project manager for the field construction and provided the following information on the works completed:

Preparation

- 2 total kill applications (Glyphosate Sprays) were completed in November to kill off all weeds and existing turf grasses that were on the field
- Then the top 50mm of thatch and soil was removed to help prevent grow back of existing turf grasses
- Next step was to rotary hoe the surface to a fine tilth and the existing soil was laser graded
- TVT then installed a drainage system than ran across the field at 3.5m spacing fence to fence

The Redcliffe Dolphins are a 2nd Tier Rugby League team in the Queensland Cup competition

• Turf Irrigation Services installed a new irrigation system to the field after TVT's drainage installation

• The field was levelled ready for the installation of TifTuf

Tif Tuf Installation

The washed TifTuf installation commenced the week of the 27th November, however it was disrupted by large rain events and wasn't completed until the 6th of December.

Maintenance in preparation for handover

• Application of Pre-emergent herbicide plus starter fertiliser

• Approximately 7mm of topdressing, completed twice

• Follow up fertiliser application

• Mowing program with a cylinder mower

• Monitoring and adjustment of the irrigation system prior to handover

The Results

The independent consultant, Paynter Dixon representative and the club were all extremely happy with the overall job and were very happy that they decided to go with TifTuf.

The new surface will be given a thorough workout starting today and tomorrow when the 2018 Rugby League Commonwealth Championships are held at the ground.

Project Manager Trent Hobson is particularly excited saying he "Can't wait to see this field in play after all the work that went into it. I think the dolphins and anyone else that plays here will be pumped with the quality of the field." TifTuf has a very fine leaf blade with dense growth, making it ideal for a wide variety of applications. Its density enables it to handle high wear situations like backyards and sports fields whilst its fine blade ensures shade tolerance and a very soft leaf to walk on.

Tuf times for Primary Schools

A NEW LOW MAINTENANCE PLAY SPACE FOR KIDS AT ST COLUMBKILLE'S CATHOLIC PRIMARY SCHOOL.

Principal Bradley Colquhoun and kids at St Columbkille's Catholic Primary School

Countless studies have shown that well maintained lawn and green space areas have a positive benefit on public health outcomes. Turfgrasses play a critical role in the general health and welfare of our nation and as a result of increasing urbanisation, they are becoming more and more important for human health. Lawns, parks and open playgrounds provide areas of cool, clean and calm that are critical to improved health; they are oases that are somewhat freer of the stresses of daily life in an urban environment

School playgrounds and sports fields are also a crucial part of a healthy and balanced education process and add to the overall appeal and practicality of a school. Many schools in built up environments find it hard to retain areas of open green space for their students because of development pressures and the cost of maintaining and servicing these areas.

One such school is St Columbkille's primary school, situated 60km south of Sydney and just 5km north of the city of Wollongong, the school is a short walk from the shopping district of Corrimal, a popular suburb of the coastal city of Wollongong. The school is in a highly developed area so the available space for grounds is very limited.

St Columbkille's has one "paddock" of around 1400m^2 that is used heavily by the students for sports classes, recess and lunch as well as before and after school care. The amount of little feet on this relatively small patch of grass is extreme to say the least. Current principal and sports fanatic Mr Bradley Colquhoun has made it a priority to maintain this area in a usable state so the children at the school can play and learn in a safe and natural environment. "After several years of a sub-standard grass playground space, we have finally found a product that is deserving of our students" Said Mr Colquhoun.

In late 2017, Mr Colquhoun contacted Lawn Solutions Australia to get advice on a revamp of this area to get it up to a standard that would be safe and enjoyable for the kids at the school to use. With the excess traffic and lack of a dedicated maintenance staff member, relying on volunteers for mowing and upkeep, the field had degraded over time and was becoming a hazard with grazed knees a common issue for the children. "We really needed a playground space that was safe, accessible and aesthetically pleasing for our students

be able to use and take great pride in" Mr Colquhoun commented.

The school needed an attractive but hardy, low maintenance option for the paddock that would be able to handle the amount of foot traffic that it receives each day and not need constant attention to remain healthy and green. TifTuf Hybrid Bermuda grass was chosen because it answered the needs of the school and had been proven to sustain high traffic areas as well as being very drought tolerant.

In December 2017, the school went ahead with the project, removing the existing turf and weeds, recommissioning the underground sprinkler system and Active Turf installing 1350m^2 of premium TifTuf to cover the paddock and nearly a year later, the move has proven to be a winner. The children returned to the 2018 school year to find a brilliant green field where there once was a worn and patchy cover and have been able to use the field without issue ever since.

"The renovation of our primary grassed area using the TifTuf Hybrid Bermuda grass in consultation with Lawn Solutions Australia has provided our St Columbkille's school, Corrimal and the wider community with a beautiful area and they just love playing on it" Mr Colquhoun iterated.

The winter following the installation was a particularly cold and dry season, but the grass remained intact with no fertiliser and very minimal irrigation. Mr Colquhoun continued "This playground space is consistently used throughout the week for numerous activities. Throughout the autumn and winter months the cover of grass was exceptional and held up well throughout this period. From a WHS perspective and overall functionality, the grass provided the students with a safe and reliable surface that was used several times per day, 5 days a week through Term 2 and 3."

In the term 3 holidays, Mr Colquhoun organised a renovation of the paddock, aerating, fertilising and topdressing the space to get it back to its original glory and the results were very pleasing. The inclusion of TifTuf, a grass bred especially for circumstances just like this, has made a small piece of real estate green, safe and user friendly again which has and will do a lot for the mental and physical health of the students at St Columbkilles for years to come.

The Boat Works

Australia's Greatest Boatyard

The Boat Works

Standing tall and proud at Tony Longhurst's The Boat Works at Coomera, is the Gold Coast's largest ship lift at 300 tonnes named 'Rhino' and while 'Rhino' is the crown jewel in this remarkable new facility, it's not the only impressive new element.

Dubbed 'Australia's Greatest Boatyard' and for good reason, The Boat Works, 50,000m^2 Superyacht Refit Yard has recently opened after a remarkably quick build time of only nine months.

This new development is strongly focused on conservation with well-placed green zones throughout the yard to add a pleasant softening effect to the industrial activity. Tony Longhurst is very much a greenie at heart, so creating and implementing sustainable bio gardens was an essential part of the development for him.

The Boat Works have a great long-standing relationship and mutual understanding with Matt Yarker and the team at Scape It QLD, and they were responsible for all landscaping aspects of the project.

"Scape It have a terrific can-do attitude; they get the job done reliably and source the needs of the client" Marketing Manager Charmaine Webb said.

When walking through the completed development the islands of green are an instant standout. The lush oasis catches the eye showcasing the outstanding new turf variety, TifTuf Hybrid Bermuda. The main entrance and surrounding tropical gardens

Rhino the ship lift


TifTuf being laid

all feature TifTuf. This variety was selected for The Boat Works due to its excellent colour and water wise benefits. Mr Longhurst is extremely happy with the result and can't wait to use TifTuf around his next big project, a hotel that he is building on site to accommodate his clients.

Ms Webb said their guest and tenants are all taken aback by the TifTuf. "They all gravitate to it, take their shoes off and give themselves a foot massage – very amusing" she said.

"When walking through the completed development the islands of green are an instant standout."

"These green areas will be the spot to sit for our Superyacht crew after a hard day's work in the yard on their boat. We will look to team the crew up with a bucket of Coronas and prawns while taking in the sunsets over the unique shipyard facility" she continued.

TifTuf is providing the environmentally responsible solution for projects that are after the most sustainable green solutions available.

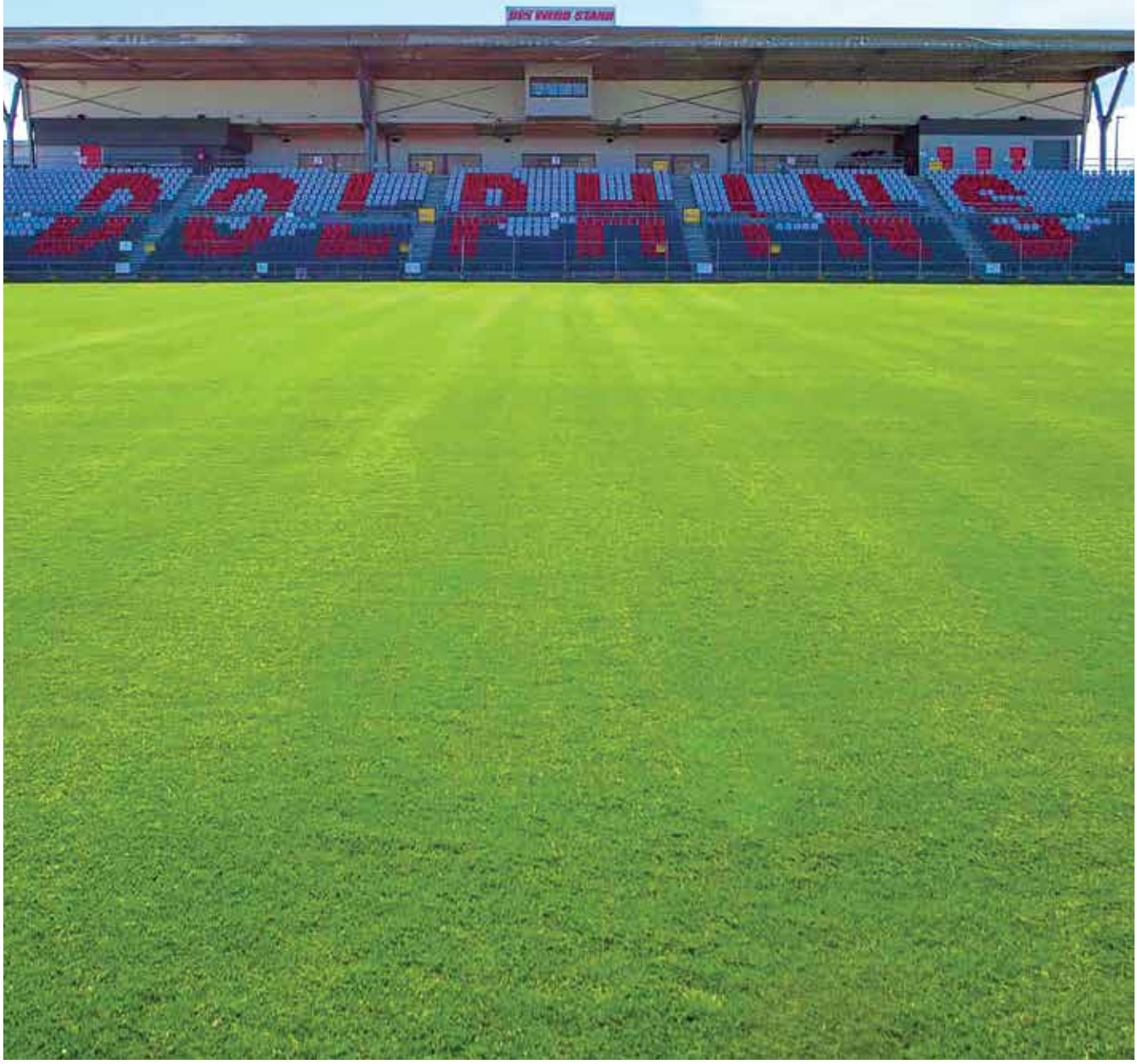
TifTuf – Taking Australian Sport to the Next Level

BRED TOUGH FOR THE TOUGHEST OF CONDITIONS, TIFTUF IS CHANGING THE GAME.

The Australian sporting landscape is broad and as a nation we are competitive internationally in many sports. We succeed in competitive, combative team sports and many of these take place on grass playing surfaces. Think soccer, rugby league, rugby union and Aussie rules – all sports that have high expectations and requirements for grass playing surfaces due to the wear and tear they will incur during play.

Sports technology is continually evolving. There are advancements in training techniques and recovery, equipment improvements and better knowledge of what it takes to achieve elite performance. One factor that our athletes don't have control over is the playing surface. This very important factor plays a significant part in providing the ideal platform for optimal performance and it's not as simple as just having good grass anymore. If our athletes want to perform at their best on the international stage, they need to be performing on the best playing surfaces available not just here in Australia, but anywhere. Lawn Solutions Australia has made it their mission to research and source the best new sports turf varieties available anywhere in the world, in order to provide our athletes with the foundation for success.

TifTuf Hybrid Bermuda is a product of this research. TifTuf provides sports ground curators with a new turf variety that exceeds all other varieties currently existing within the sports field industry. TifTuf requires



"I would rate TifTuf above all the varieties I have worked with."

-Jeff Gambin, Somerset College

significantly less inputs (fertiliser and water) and has a dense sward that enables it to handle high wear situations, whilst remaining soft and visually superior to other turf varieties.

Prior to its release in Australia, TifTuf had been tested in:

- 19 drought-stress trials
- 2 sports field wear tolerance trials, utilizing the Cady traffic simulator
- 4 irrigated, non-stress trials

These tests were conducted at The University of Georgia, The University of Florida, North Carolina State University, Oklahoma State University and Texas A&M University as part of the Federal Specialty Crop Research Initiative (SCRI) grant.

TifTuf has been introduced into the Australian market through an exclusive arrangement with Lawn Solutions Australia. In just a short amount of time, it has sparked significant interest and been chosen as the new turf variety for many new sports grounds and sports field upgrades right across Australia.

Jeff Gambin is a greenkeeper at Somerset College in Queensland. He was a golf course superintendent for 30 years, a property manager and an on-site training officer for 10 years. During his time working on golf courses he had the experience of converting a 'hinze' variety of grass on fairways at Coolangatta/Tweed Heads Golf Course, managing couch variety Santa Ana at Gold Coast Burleigh Golf Course along with C2. He also worked with a couple of courses that used Winter Green couch. Mr Gambin recently had TifTuf installed at the college and said, "I would rate TifTuf above all the varieties I have worked with." Turf producer Twin View Turf supplied TifTuf for the college and Mr Gambin complimented them on supplying and laying a beautiful, weed free turf.

"After just experiencing our first winter, which had a couple of frosts, I was pleasantly surprised to see no patches of different colour or leaf texture over our two Rugby Fields", he said Winter colour retention was also very good with just a couple of foliar applications of nitrogen/iron being required when we had a couple of Uni Games soccer matches."

"I was also pleasantly surprised how well the TifTuf handled the amount of wear from our school's Rugby training sessions and games."

This is just one example of many that demonstrates the results that can be achieved by installing a superior turf variety such as TifTuf.

Water-less grass

NEW RESEARCH IS CONFIRMING THAT TIFTUF TRULY LIVES UP TO ITS NAME

Turf trials by Melbourne Polytechnic

Turf research in recent times has focused on finding new varieties of grass that have superior characteristics beneficial to the changing environment. At the top of this list of characteristics is the need for turf varieties that use less water, with a greater drought tolerance.

TifTuf is a Hybrid- Bermuda (couch) grass that has been bred to stand up to drought conditions, save water and has become the new benchmark when it comes to measuring the drought tolerance of turf.

Melbourne Polytechnic recently undertook a trial of four different couch grasses and measured how they responded to drought like conditions. The couch grasses included in this trial were Legend, Santa Ana, TifTuf and Wintergreen. The three mechanisms for drought tolerance studies are drought tolerance, drought avoidance and drought escape.

At the conclusion of the drought cycles, one replicate of each cultivar was removed from the pot to observe root and rhizome production.

It was noted that Santa Ana and Wintergreen appeared devoid of rhizomes, Legend had some short but visible rhizomes and TifTuf had a noticeably higher level of rhizome production.

Conclusion:

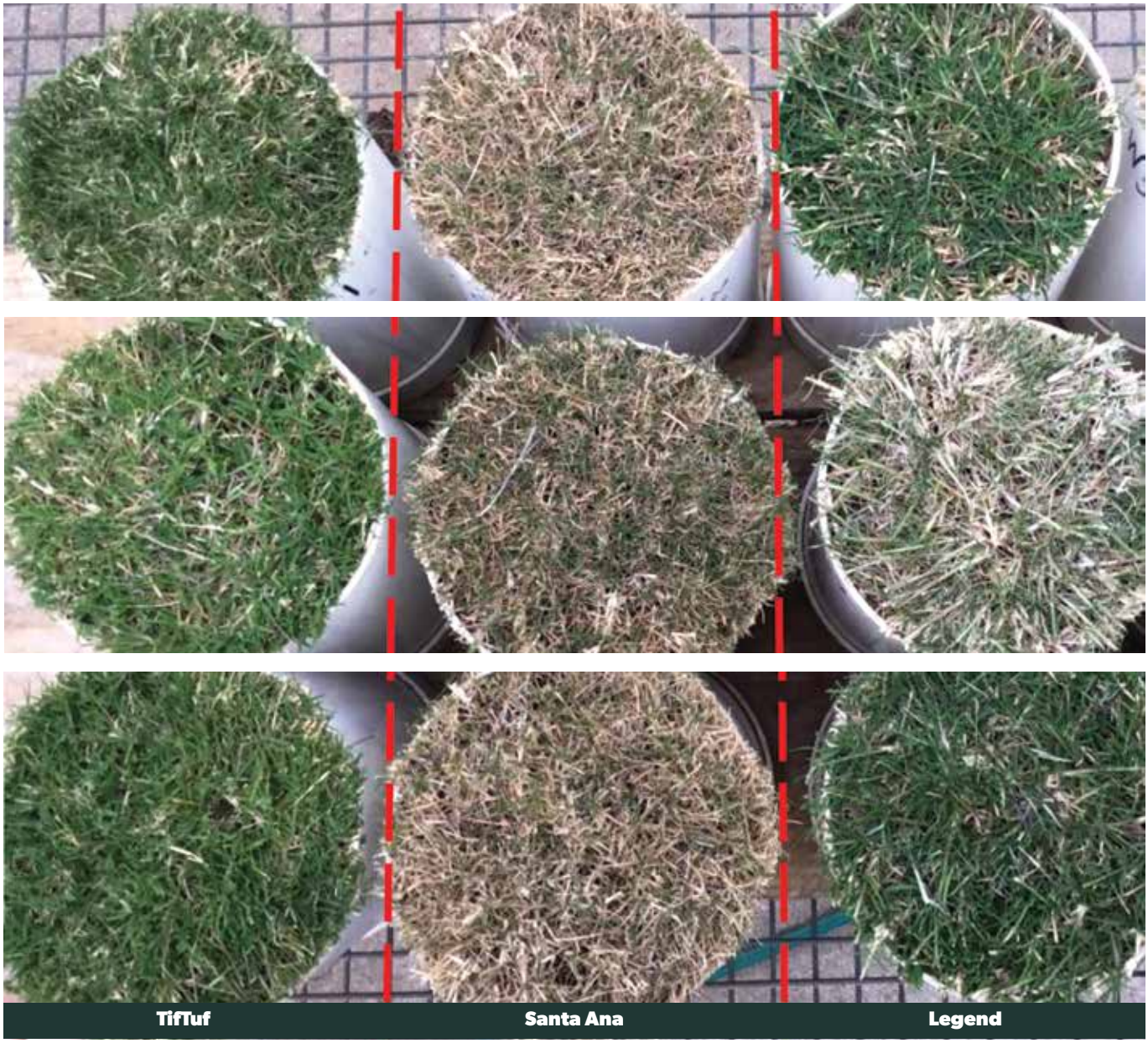
• After prolonged drought, TifTuf retained green colour longer than the other grasses.

• TifTuf produced more rhizomes than the other cultivars, which might contribute to better drought tolerance.

"In my lysimeter trials TifTuf retained green colour longer than the other three varieties in a dry-down situation, and I'm betting that's because of these strong rhizomes.

-Dr Philip Ford, Melbourne Polytechnic

TifTuf tolerates drought because it uses less water due to physiological adjustments during times of drought. TifTuf can survive on as little as 12mm of irrigation per week and maintains green colour in serious



drought conditions where as other common couch grasses will fail.

In the above image, TifTuf, Santa Ana and Legend towards the end of a prolonged drought in trials (8 weeks without rain or irrigation). Note the variability between replicates of Santa Ana and Legend; yet all three TifTuf pots stayed uniformly green. Wintergreen had perished weeks earlier.

There was a visible difference in colour retention in prolonged drought. This points to TifTuf better exploiting a drought tolerance mechanism that the others don't have.TifTuf also had a noticeably higher level of rhizome production. The image to the left is a close up of the rhizome growth, another sign of a highly drought tolerant grass.

For a lawn that requires less water and can stand up to drought conditions, you can't go past TifTuf.

Turf Certification

WHAT IS IT AND WHY IS IT IMPORTANT?

The International Turfgrass Genetic Assurance Program (ITGAP), was developed to ensure the years of research and development into a new turf variety wouldn't be lost to contamination or cross pollination.

ITGAP provides licences for turf producers to grow and sell these certified grasses and monitors their production systems and supply of planting material. This ensures the traits for selection are not lost. In Australia, the ITGAP Program is implemented through AusGAP, which is the only registered agent for ITGAP outside of the United States in the world, run by Program Manager Nick Dorney.

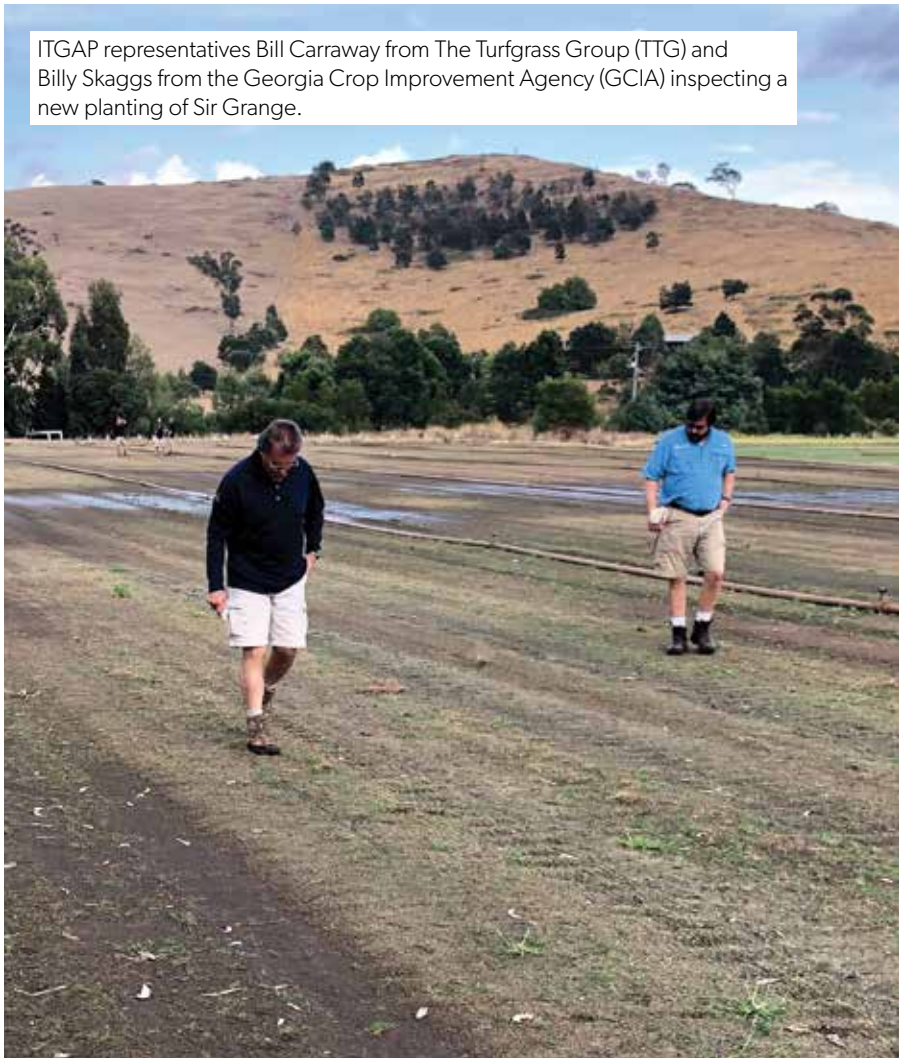
What is the distinction between specifying and installing certified turf, versus uncertified turf? And what is certification, anyway?

Terry Hollifield is the Executive Director of the Georgia Crop Improvement Association, the certifying agency that inspects sod farms and certifies turf in the US state of Georgia. Georgia Crop Improvement is one of 44 such agencies in the United States.

"If a landscaper, or an architect, knows that they have a situation that needs a certain variety with particular characteristics like shade tolerance or winter tolerance in the transition zone, so there's no winter kill, or if they are looking for a grass that's low maintenance, the only assurance they have of getting that variety is through certification," Hollifield says. "State and federal laws don't apply to vegetative turfgrasses, the only standard is to require certification."

The process of certification begins with the turf developer or breeder.

"It doesn't matter if it's a university variety or a private variety, the inventor of a new variety must complete an application for approval of the variety to be certified. The application includes information such as breeding history, (Selected or bred? produced through asexual reproduction? naturally occurring? or irradiated?) then



ITGAP representatives Bill Carraway from The Turfgrass Group (TTG) and Billy Skaggs from the Georgia Crop Improvement Agency (GCIA) inspecting a new planting of Sir Grange.

they complete a section that talks about leaf colour, leaf shape, stolon colour, length of internodes, all those characteristics that determine a variety," Hollifield says.

Claims such as cold tolerance, shade tolerance, or drought resistance must also be substantiated.

"If you make a claim about the variety, this claim must be substantiated with reputable data. Say a breeder claims the grass has a light green stolon, that doesn't mean anything, it must be referenced on the Munzel colour chart, or another known colour chart used for identification. It's got to be good science. Any claim that is made, whether it's a claim that I use as I make a field inspection, or a performance claim, (such as cold tolerance or drought tolerance), data must be provided." he says.

Once a variety is approved for inclusion in the certification program, it will be licensed to turf producers who plant it on land that has been sterilised and known to be free of pests, weeds and foreign turf varieties. As the crop of turf grows in, it is subject to a minimum of four inspections per year by the growers and two by an ITGAP representative. Specially trained third-party inspectors who are not employed by the turf farms themselves walk every inch of a turf farm looking for weeds and off-type grasses. If weeds or off-type grasses are found in a field, that field may be quarantined, meaning no turf can be harvested from that field until the weed or off-type is removed and the field has been re-inspected for varietal purity.

"Sometimes I feel like I've walked from Darwin to Adelaide and back five times in my career looking for that needle in a haystack," says Nick Dorney.

Dorney, who has been responsible for the implementation and running of the AusGAP program in Australia, inspects every licensed AusGAP farm for weeds and off-type grasses. "With some varieties, you're looking for a needle in a haystack, that clump of grass that may be no bigger than a thimble."

"Specification and the requirement for certified turf is becoming more common. If you're not growing certified varieties of grass, I don't think you can stay in business"

-Terry Hollifield, Executive Director of the Georgia Crop Improvement Association

If anything other than the certified variety is found in the field, no turf may be harvested until the field is cleared of the infestation, re-inspected and re-certified.

"We require turfgrass certification on every variety that we release or take into the marketplace. It's one of our fundamental imperatives. Genetic purity is part of our mission statement," Dorney says. Those varieties include: Sir Grange Zoysia, L1F Zoysia, TifTuf Hybrid Bermudagrass and DNA certified Sir Walter Buffalo.

"Certified turf from a Licensed and Certified turf producer establishes the integrity and genetic purity of the product. You know you are receiving the product you are paying for and that it comes with an AusGAP Certificate establishing the provenance of the grass," Dorney says.

Hollifield agrees. "I'll give you an example that validates that statement. If you go back to the 1980s, there were as many as 10 or 12 different kinds of Tifway (USA standard couch) being sold, that's 10 or 12 imposters being sold as Tifway. In about 1990 or 1991, I performed a survey in Georgia and collected samples from big box stores and nurseries. About 50% were in fact not Tifway. The only way to make sure you purchase Tifway, or any other specific grass, is to buy certified," Hollifield says.

Dorney iterates, "We are trying to assure the end consumer they are receiving the specific variety that they have requested. If an athletic field wants TifTuf, we want them to know they are receiving TifTuf. If a golf course with a lot of shade purchase Sir Grange, we want them to know that they are getting Sir Grange."

Hollifield and Dorney agree that growing certified turf is the future of the turf industry. "Specification and the requirement for certified turf is becoming more common. If you're not growing certified varieties of grass, I don't think you can stay in business," Hollifield says. "For a producer to be licensed to grow the new grasses that are developed by breeders, certification is not a choice, it's a requirement. If you are a turf producer and you're not growing these new certified varieties, you're not going to stay in the industry very long."

TECHNICAL DATA SHEET

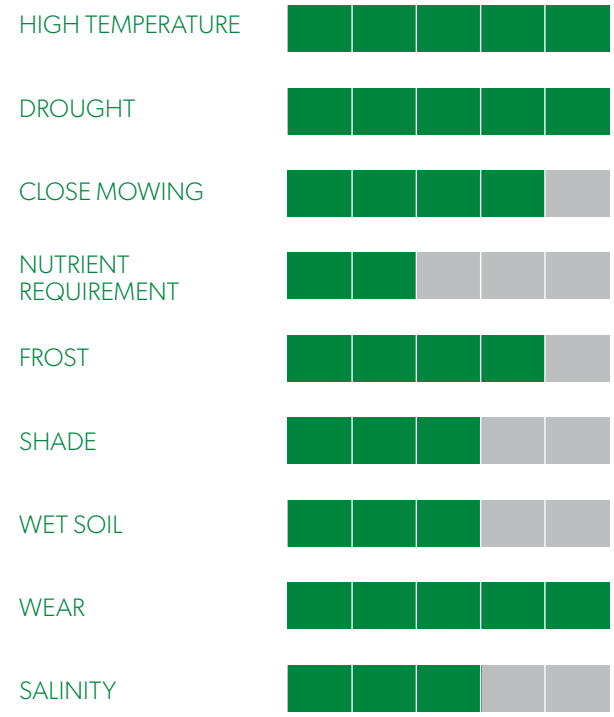
TifTuf Hybrid Bermuda

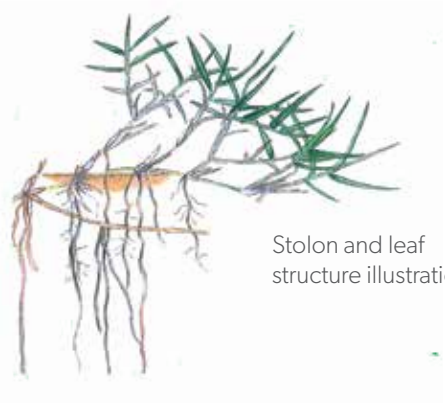
TIFTUF

SPECIFICATIONS

VARIETY	Hybrid Bermuda
BOTANICAL NAME	Cynodon transvaalensis x Cynodon dactylon
GROWTH HABIT	Perennial stoloniferous growth habit that also produces rhizomes. Dense, finely textured turf.
POSITION	Full sun to medium shade (minimum 4-5 hours direct sunlight per day).
SOIL TYPE	Suitable for all types but free draining soils recommended.
LEAF TYPE	Fine / Average width 2.5mm /Average length 30mm / Mid dark green
OPTIMAL pH RANGE	5.5 - 7
MOWING HEIGHT	8mm – 36mm
SEED PRODUCTION	Produces a seasonal seed head with 2-4 raceme.
LOCATION	Supply available Australia-wide.
USES	Perfect for domestic, commercial and high wear sports applications and areas of moderate shade. Variety is low maintenance and requires minimal nutrient and irrigation application once established. Very drought tolerant and quick to repair from wear.
PLANT PROTECTION	Ensure supplier is a licensed Lawn Solutions Australia member and product has been certified by AusGAP. Product should be accompanied with a 10-year Product Warranty Certificate and Certificate of Authenticity. PBR protection pending.
MAINTENANCE	Medium.

TOLERANCE *(From very low to very high)*





Stolon and leaf structure illustration.

$2 coin on wide shot of grassed area.

Close-up of live stolon.

TifTuf Hybrid Bermuda Specification Sheet

1.1 RESPONSIBILITIES

General

Requirement: Provide natural grass surface with AusGAP certified TifTuf Hybrid Bermuda as documented.

1.2 SUBMISSIONS

Execution Details

Program: Submit a work program in the form of a Gannt chart, for the natural grass surfaces landscape works.

Maintenance program: - Fertilise as per schedule. Mow to required height as needed. Contact your supplier for a tailored maintenance program for site if needed.

Material storage on site: Store the grass in a cool place, preferably in shade to prevent overheating and lay as soon as possible.

Products and Materials

Supplier's data: Submit supplier's data including the following:

- Material source of supply.
- Evidence of experience in supply of the required material.
- Production capacity for material of the required type and quantity.
- Lead times for delivery of material to the site.
- Evidence of AusGAP certification.

1.3 INSPECTION

Notice

Inspection: Give notice so that inspection may be made of the following:

- Clearing completed.
- Setting out completed.
- Grassing bed prepared before turfing.
- Turfing completed.

1.4 LAWN SOLUTIONS AUSTRALIA TURF

General

Description: TifTuf Hybrid Bermuda cultivated turf of even thickness, free from weeds and other foreign matter.

Supplier: Lawn Solutions Australia certified turf supplier.
Turf certification program: AusGAP – the Australian turf certification system.

General

Description: Proprietary fertilisers, delivered to the site in sealed bags or buckets marked to show manufacturer or vendor, weight, fertiliser type, N:P:K ratio, recommended uses and application rates.

Fertiliser Schedule

Property	A	B	C
Location			
N:P:K Ratio	4:1:2		
Application Rate	1-2kg/100m^2		
Application Schedule	September and February		

1.5 PREPARATION

Existing Grass Removal

Herbicide: Spray existing grass with a non-residual glyphosate herbicide in any registered formulae, at the recommended maximum rate. Re-apply herbicide at the recommended maximum rate once initial application has dried and within 3 hours of initial application.

Manual removal: A minimum of 2 weeks after application of herbicide remove existing grass layer.

Weed Eradication

Herbicide: Eradicate existing weeds using environmentally acceptable methods, including a non-residual glyphosate herbicide in any registered formulae, at the recommended maximum rate.

Manual weeding: Remove weed growth throughout grassed areas.

Vegetative Spoil

Disposal: Remove vegetative spoil from site once dead. Do not burn.

Soil Preparation

Subsoil: Remove any debris and level and shape the dry soil surface.

Soil improvement: Add soil improvements as needed eg, add gypsum to clay soils at recommended rates to increase the porosity of soil before adding top soil.

Site topsoil or imported topsoil: A minimum of 100mm of quality top soil is recommended before turfing. Recommended ratio of 80% sand to 20% organics. Allow maximum 30 mm set-down to hard surfaces for turf and stolons.

Starter Fertiliser

During the peak growing season, starter fertiliser is not recommended. If transplanted in cooler months, spread starter fertiliser evenly over the cultivated bed at recommended rates a maximum 24 hours before laying grass. Mix the fertiliser thoroughly into the topsoil before placing the turf or stolons.

1.6 LAWN SOLUTIONS AUSTRALIA TURFING

Supply

Elapsed time: Deliver the turf within 24 hours of cutting and lay within 8 hours of delivery. Prevent turf from drying out between cutting and laying and store in shade where possible. If not laid within 8 hours of delivery, roll turf out on a flat surface with the grass up, and water as required to maintain a good condition.

Application

General

Method: Lay the turf as follows:

- Stretcher bond pattern with the joints staggered and close butted.
- Parallel with the long sides of level areas, and with contours on slopes.
- Finish flush, after tamping, with adjacent finished surfaces of ground, paving edging or grass areas.

Tamping: Lightly tamp to an even surface immediately after laying or roll with a light roller on completion.

Stabilising on steep slopes: Peg the turf to prevent downslope movement. Remove the pegs when the turf is established or use bio-degradable pegs.

Watering

General: Water immediately after laying until the topsoil is moistened to its full depth. Maintain moisture to full depth by watering daily for the first 2 weeks as a minimum.

Establishment

General: Maintain irrigation to turfed areas until there is a dense continuous sward of healthy grass over the whole turfed area, evenly green and of a consistent height.

Failed turf: Lift failed turf and replace with new turf from the same certified supplier.

Levels: If levels have deviated from the design levels after placing and watering, lift turf and regrade topsoil to achieve design levels.

Fertiliser: Apply lawn fertiliser as per the fertiliser schedule and at other times as required to maintain healthy grass cover. Water immediately after applying fertiliser to prevent leaf burn.

Mowing: Mow to maintain the grass height within the required range as specified in the TifTuf Technical Data Sheet. Do not remove more than one third of the grass height at any one time. Ensure TifTuf is mown within a week after installation.

Top dressing: If once established the grass surface needs to be levelled, or if joint lines remain, mow the established turf and remove cuttings. Lightly top dress to a depth of 10 mm. Rub the dressing into the joints and correct any unevenness in the turf surface. Leave at least third of the grass height showing through topsoil. Water thoroughly.

1.7 LAWN SOLUTIONS AUSTRALIA TURFING

With turf being a naturally farmed product, there is a variety of factors which can alter the minimum thickness, turf roll size and mowing height for each variety and application. For further information consult Lawn Solutions Australia or nearest certified producer.

Turfing Schedule

Property	**A**	**B**	**C**
Location			
Variety			
Minimum Thickness			
Turf Roll Size (mm)			
Mowing Height (mm)			

Stolons Schedule

Property	**A**	**B**	**C**
Location			
Species or Variety			
Stimulant			
Mowing Height (mm)			