

MAKING GOOD TURF
GREAT
FROM TEE TO GREEN

 **PrimoMaxx**[®] II

syngenta[®]

THE ULTIMATE FAIRWAYS PROGRAMME LESS WORK MORE PLAY

WHAT IS Primo Maxx II?

Primo Maxx II is a completely new formulation designed to meet the ever increasing regulatory hurdles and secure the long term future of this key management tool for turf managers.

Primo Maxx II delivers the same high performance as the original formulation. Syngenta investment in turf R&D ensures the proven advantages of the MAXX formulation continues to remain available. This new formulation enables Primo Maxx II to deliver identical performance with a slightly lower active content. Users should continue to apply the rates they have always used and can be confident of achieving the same great results while applying less active ingredient.

HOW DOES IT WORK?

Biochemically, Primo Maxx II works by temporarily blocking the production of gibberellic acid within the plant leaf, which effectively limits cell elongation and vertical growth. The result is to shorten the distance between the shoot nodes, leading to more compact growth.

Whilst the vertical growth is slowed, energy in the plant is diverted to boost both root and lateral growth - creating stronger, healthier and denser turf which plays more consistently and, importantly to reduce costs and management, requires up to 35% less mowing.



Primo Maxx II course conditioning from tee to green creates consistently better playing conditions demanded by today's golfer.

PRIMO MAXX II FROM TEE TO GREEN

Use of Primo Maxx II across the course has gained the widespread approval of clubs, players and greenkeepers, with key overall benefits seen as:

TEES

- IMPROVED WEAR AND STRESS TOLERANCE
- REDUCED MOWING REQUIREMENT
- DENSER AND HIGHER QUALITY TURF
- FASTER ESTABLISHMENT WITH OVERSEEDING
- IMPROVED SHADE TOLERANCE

ROUGHS

- REDUCED MOWING REQUIREMENT
- REDUCED FUEL, MAINTENANCE AND LABOUR COSTS

FAIRWAYS

- REDUCED MOWING REQUIREMENT
- REDUCED FUEL, MAINTENANCE AND LABOUR COSTS
- GREATER FLEXIBILITY IN CUTTING REGIMES
- IMPROVED SWARD DENSITY AND BALL LIE
- GREATER RESISTANCE TO DIVOTING
- LONGER RETENTION OF MOWING PATTERNS

GREENS

- SMOOTHER, TRUER PUTTING SURFACE
- GREATER DENSITY AND TURF QUALITY
- SUPERIOR ROOTING AND DROUGHT STRESS
- MORE CONSISTENT ROLL THROUGHOUT THE DAY
- FASTER MOWING
- GREATER OVER WINTER DISEASE TOLERANCE
- GREATER SHADE TOLERANCE

strokesaver
GOLF'S No1 COURSE GUIDE

 **Primo Maxx II**

syngenta

**GOLF COURSE QUALITY
IS THE NO 1 FACTOR IN
ATTRACTING GOLFERS
TO A CLUB**

**PRIMO MAXX II
ENHANCES TURF
HEALTH AND
PLAYING SURFACE
CONSISTENCY**

**PRIMO MAXX II
DELIVERS IMPROVED
PLAYABILITY BY
INCREASING TURF
DENSITY**

**MORE ROUNDS
= INCREASED
CLUB REVENUE**

THE BUSINESS OF BETTER TURF

**GOLFERS ALWAYS WANT TO PLAY WHERE
THE CONDITIONS ARE BEST.**

Enhancing the playing experience is crucial to attract and retain payers at golf courses, to assure the financial sustainability of the club.

With golf clubs under intense economic pressure and the increasing tendency for 'nomadic' golfers to move between clubs and courses, it's more important than ever to deliver a high quality playing experience. Attracting membership, visitors and 'pay and play' golfers is critical to the economic success of any golf course. Course quality is key in attracting new players and encouraging existing players to more more often.

IMPROVE QUALITY AND REDUCE MOWING

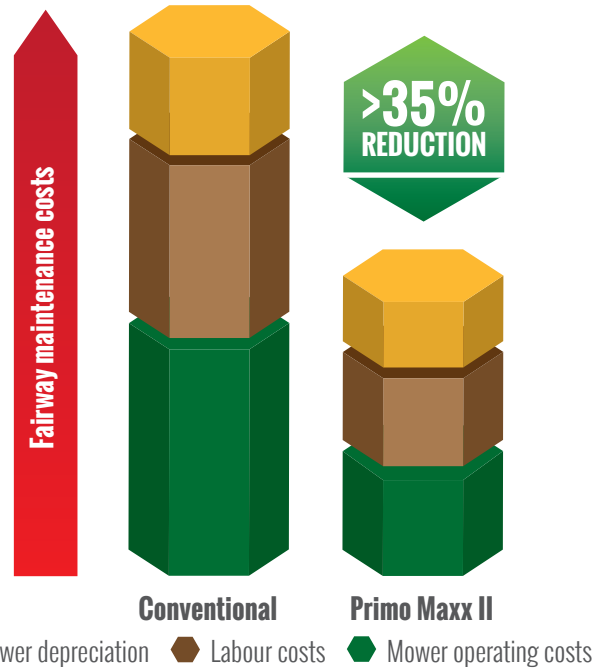
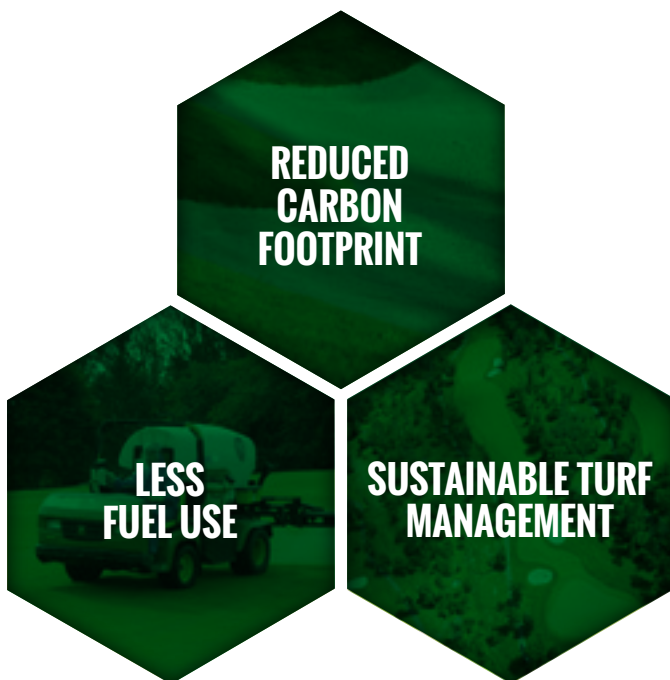
Primo Maxx II will slow grass growth within approximately one week of initial application - enabling significant reductions in time and costs of mowing and management.

FAIRWAYS AND ROUGH

On fairways and in play rough, mowing frequency may be reduced by up to 35% with a full Primo Maxx II programme.

- ▶ Less time spent mowing - releasing labour for more productive purposes
- ▶ Lower fuel costs
- ▶ Reduced wear and tear on machinery
 - Lower maintenance and repair bills
 - Longer machinery working life reduces capital expenditure
- ▶ Greater flexibility with mowing schedules
- ▶ Cleaner visual finish - with less clumps in wet conditions, better stripes and fewer seed heads

The number one factor players want from a fairway is the ball sitting proud. Primo Maxx II creates denser more even sward cover for enhanced ball presentation and play.



FINE TURF SURFACES

Consistency and trueness of putting surfaces is the most important factor for golfers. Primo Maxx II has been shown to create greens that are smoother and stay more consistent.

Fine turf surfaces can continue to be mown as normal, but with the benefit of faster mowing with up to 35% fewer clippings to box off. Alternatively, mowing frequency may be reduced, in conjunction with rolling. Furthermore, with slower leaf growth, playing surface speed and quality will remain more consistent throughout the day.

Experience with Primo Maxx II use on fine turf indicates that cutting height may be slightly raised with no loss in ball speed - typically leading to:

- ▶ Reduced stress on plants
- ▶ Lower disease susceptibility
- ▶ Less risk of scalping during mowing
- ▶ Enhanced root mass
- ▶ More consistent green speed throughout the day

ENHANCE TURF PLANT HEALTH

Primo Maxx II promotes healthy plants that are better able to resist the effects of stress and disease, to produce season-long better playing conditions.

- ▶ Better drought resistance
- ▶ Improved wear tolerance
- ▶ Quicker recovery from stress
- ▶ Less stress = healthier turf

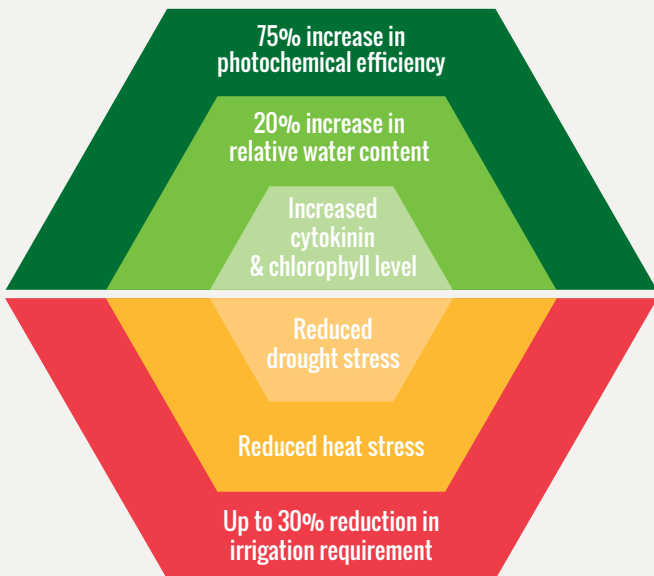
Applying a Primo Maxx II programme ahead of periods of stress (pre-stress conditioning) makes plants better able to cope with adverse conditions - including drought, water-logging, heavy wear and disease pressure. Not only will turf stay looking good for longer, but also recover faster after stress conditions have eased.

ENHANCED SHADE TOLERANCE

The effect of shade is to create weakened turf plants that are more susceptible to stress, including wear and disease.

Primo Maxx II can help plants compensate for a 75% reduction in light levels, which could transform turf performance in shaded areas. The Primo Maxx II blocks the creation of gibberellic acid, which limits elongated growth and breaks the cycle of carbohydrate removal; giving the plants the chance to recover and build up strength.

PRIMO MAXX II DELIVERS:



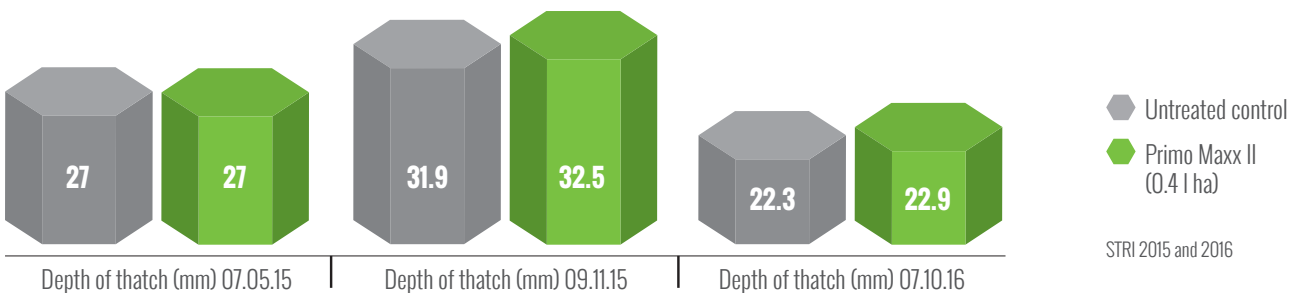
Research has shown that Primo Maxx II applications increase the level of bioactive cytokinins within the plant - improving tolerance to heat and drought induced stress. The presence of cytokinins in the plant has been shown to improve turf quality by delaying the degradation of chlorophyll caused by high temperatures and to alleviate leaf browning.

In trials under drought conditions, Primo Maxx II enhanced the photochemical efficiency of turf by over 75%, compared to untreated turf. The relative water content of the grass leaves remained a healthy 20% higher than untreated 28 days after treatment.

Primo Maxx II is an important part of Integrated Turf Management programmes, creating turf conditions less conducive to disease, including:

- ▶ Reduced soft grass growth most susceptible to Microdochium (Fusarium) infection
- ▶ Raised cutting height reduces stress on the plant and associated risk of Anthracnose, without affecting turf quality and ball speed

STRI trials show Primo Maxx II does not impact on organic matter



STRI 2015 and 2016

APPLICATION AND TIMING

The Primo Maxx II programme can be started at any stage when turf is actively growing, but should ideally start at the onset of consistent spring growth. The programme should continue whilst turf is actively growing.

Primo Maxx II programmes are best started when you get a period of sustained turf growth. That typically occurs when soil temperatures at five to 10 cm depth reach double digits for at least five days.

You can monitor soil temperatures with a simple digital probe or visit the GreenCast website which includes predicted representative soil temperatures for your area.

As a good practical indication, you can record boxed off clippings each day, to quickly assess when consistent growth has started. Recording clipping yield is also an invaluable guide to growth rates throughout the season, which can help to tailor application rates and timing most effectively.

If higher rates of Primo Maxx II are intended to be used in the programme, it is recommended to make the first treatment at a half-rate, and increase to the full rate for subsequent applications.

GRASS SPECIES

Primo Maxx II application rates should be tailored to grass species sward composition. Higher rates may be required on aggressively growing Ryegrass fairways, compared to fine turf fine Bent, Fescue and Poa greens.

RECOMMENDED RATES

	Rates (l/ha)	Spray interval
Greens	0.2-0.4	14-28 days
Fairways	0.8-1.2	4-6 weeks
Roughs and Semi-rough	1.2-1.6	4-6 weeks

Typically you achieve more consistent growth and optimise results with lower rates, applied more frequently. For example fortnightly applications on greens, typically at 0.2 l/ha.

On tees and fairways a monthly application at a higher rate may be more suitable and practicable with the spraying routine. There is a direct relationship between Primo Maxx II application rate and regulatory effect. If turf is growing strongly, it may be more applicable to increase the application rate accordingly, then during periods of slower growth it can be reduced.

NUTRIENT INPUT AND TANK MIXING

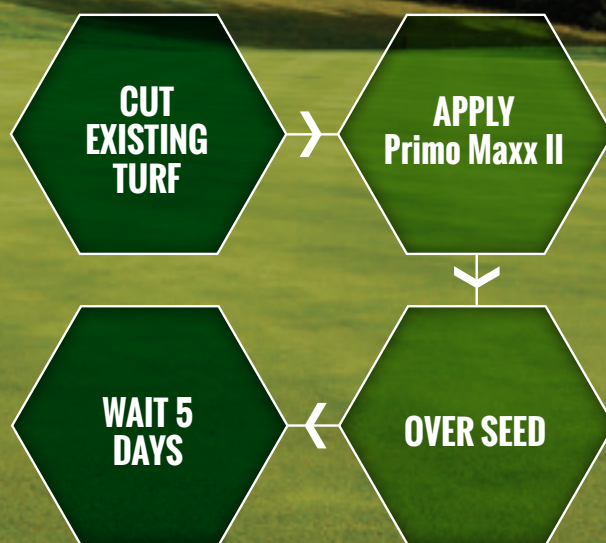
Maintaining adequate nutrition in the root zone for healthy turf growth is essential to get the best results in turf quality enhancements from Primo Maxx II. In most situations, a tank mix with an appropriate good quality liquid fertiliser is recommended with each application. Aim to deliver a minimum of 2.5 kg/ha readily available nitrogen with each application.

OVER SEEDING AND RESEEDING

Regulating growth of the existing sward during over seeding will reduce the competition and allow the rapid establishment of newly germinated seedlings.

UK trials have shown for optimum results Primo Maxx II should be applied to the existing turf five days prior to over seeding. Time applications on turf that is already in a Primo Maxx II programme to coincide with over seeding. Primo Maxx II has no detrimental effects on seed germination.

Full Primo Maxx II programmes can recommence when new seedlings reach the two true leaf stage, to encourage rooting and dense growth.





Primo Maxx II
MAKING GOOD TURF
GREAT

✓
**CONSISTENTLY SUPERIOR
QUALITY PLAYING
SURFACES**

✓
**REDUCED MOWING,
ESPECIALLY ON
FAIRWAYS AND IN ROUGH**

✓
**MORE AVAILABLE LABOUR
FOR OTHER COURSE
MAINTENANCE ACTIVITIES**

✓
**GREATER ROOTING,
DROUGHT TOLERANCE
AND SHADE TOLERANCE**

✓
**REDUCED MACHINERY
MAINTENANCE
AND FUEL COSTS**

TYPICAL FAIRWAY AND TEE PROGRAMME

Apply at 4-6 week intervals. Commence applications when the turf is actively growing.

	Application 1	Application 2	Subsequent applications
Primo Maxx II	0.4-0.8 l/ha	0.8-1.2 l/ha	0.8-1.2 l/ha
Minimum nitrogen input per application	2.5 kg/ha N	2.5 kg/ha N	2.5 kg/ha N
Application volume	250-400 l/ha	250-400 l/ha	250-400 l/ha

For fairway/semi-rough and greens programmes, consider amending granular fertilizer rates to take account of additional foliar applied nutrient. Apply through to October to build carbohydrate reserves and improved over-winter disease tolerance. A maximum rate of 2.4 l/ha can be used on rye-grass fairway or tees and 1.6 l/ha on compositions of Poa, bent grass and Fescue fairways and tees.

TYPICAL GREENS PROGRAMME

Apply at 14-28 day intervals as appropriate. Commence applications when the turf is actively growing.

	Application 1	Application 2	Subsequent applications
Primo Maxx II	0.2 l/ha	0.2-0.4 l/ha	0.2-0.4 l/ha
Minimum nitrogen input per application	2.5 kg/ha N	2.5 kg/ha N	2.5 kg/ha N
Application volume	250-400 l/ha	250-400 l/ha	250-400 l/ha

ROUGH AND SEMI ROUGH PROGRAMME

Apply at 4-6 week intervals as appropriate. To aid management of peaks of rough growth.

	Application 1	Application 2	Subsequent applications
Primo Maxx II	0.6-0.8 l/ha	1.2-1.6 l/ha	1.2-1.6 l/ha
Minimum nitrogen input per application	2.5 kg/ha N	2.5 kg/ha N	2.5 kg/ha N
Application volume	250-400 l/ha	250-400 l/ha	250-400 l/ha

A maximum rate of 3.2 l/ha can be used in rye-grass roughs and 2.4 l/ha on compositions of meadow grass, Fescue and bent grass roughs.

Note: The above are provided as typical Primo Maxx II programmes but rates and timings should be adapted to local conditions as appropriate. Research trials and recommendations in this brochure include results of work using Primo Maxx and Primo Maxx II.

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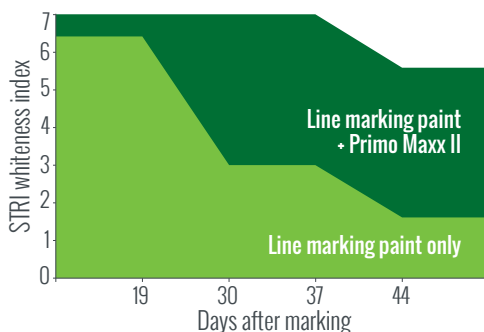


PRIMO MAXX® II LINE MARKING ADVICE

Independent trials at STRI have shown line marking in tank mix combination with Primo Maxx II (lower logo) can reduce frequency of marking by up to 50% compared to paint alone (top logo) and retains a strong healthy playing surface.

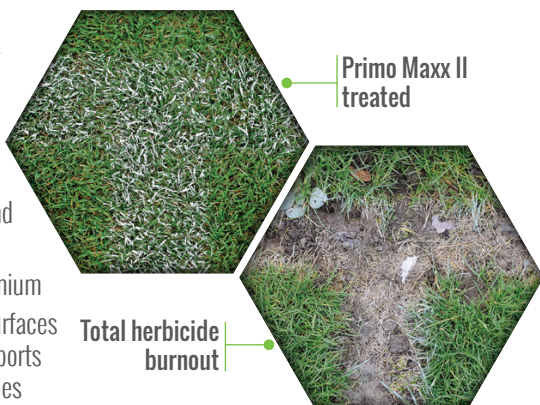
PROVEN LINE RETENTION

STRI trials have shown line marking visibility remains for up to twice as long with the inclusion of Primo Maxx II in line marking paint (above). Primo Maxx II has been tested and approved with a full range of line marking paints.



PRIMO BENEFITS OVER BURNT OUT LINES

- Healthy turf cover is retained
- No bare earth for weeds to get in
- No requirement for over seeding and the end of the season
- Lower cost than glufosinate ammonium
- At the end of the season playing surfaces can be simply converted to other sports without unsightly/confusing old lines



IN BRIEF

Mixing Primo Maxx II with line marking paint helps preserve line quality and visibility for up to 50% longer

Primo Maxx II suppresses turf growth for up to six weeks

Tested and approved with full range of commercial paints and line marking equipment

No damage to turf or need to re-seed

Low cost, low rate of use

Significantly reduce line marking paint costs

LINE MARKING APPLICATION RATE

Apply Primo Maxx II at a rate of 2 ml per litre of line marking paint solution.



Primo Maxx II can be pre-mixed with line marking paint for wheel-to-wheel applicators. With direct injection spray line-marking applicators, mix Primo Maxx II in the clean water-tank.

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