



**PREMIUM GREEN**  
exclusive turf

SOD QUALITY

**BOZZO**

EVOLUZIONE VERDE DAL 1848



# PREMIUM GREEN THE COMPETENT AND FAST RESPONSE FOR SOD GROWERS



Bottos is a story of excellence, of passion, of competent research and of expert selection of the highest quality in varietal purity. A branded DNA, strictly oriented to providing the best, able to offer not only a product but also a service tailored to every need of those who manufacture turf rolls.

For Bottos, preserving quality is essential. Our company technicians visit the sod growers and work with them to support them in choosing the products best suited to their production needs, evaluating the production area, the characteristics of the soil, the climatic balances and the requirements of each individual customer.



## PREMIUM GREEN

### WHAT DOES A SOD PRODUCER ASK FOR?

#### The project dedicated to the sod growers was born from the needs in the field:

- Reliable essences, quick in rooting, balanced and manageable, of high global aesthetic value and finally with any WEEDS REMOVED
- Lower management costs, reduction of emergencies in the production cycle, significant reduction of waste
- Granular fertilizers with new technologies for sustainable and productive management of nutrition throughout the cycle until harvest
- Liquid products to fortify the plants and roots and to avoid stresses
- Liquid products to correct nutritional deficiencies and substrate deficits

**Premium Green** has been created to meet the needs of sod growers with the best product selection for the production and maintenance of lawns on the global market. A range characterised by exclusive packaging with elegant colours, to emphasise the preciousness of the content and the service offered.

## PRODUCTS SELECTED FOR THE PREMIUM GREEN PROJECT:

MICROTHERM CULTIVARS "00" LOTS

CULTIVAR OF SELECTED MACROTHERMS

SEED COATING WITH INTEGRATED MYCORRHIZAL INOCULA

GRANULAR PRODUCTS WITH CONTROLLED RELEASE, WITH NOBLE ORGANIC MATTER, WITH MESO AND MICROELEMENTS

LIQUID ACTIVATING BIOSTIMULANTS

LIQUID FERTILIZERS

PSE





Dr. Federico Tuberga shows us a plant of Tall Fescue drying in the sun



Post-harvest experimental lots at the seed Research field of Oregon



Small quantities of seed for maintaining of the first quality species, during the lot selection work.



Visit to Seed Cleaning Facilities in Oregon



Seed heaps at the seed cleaning facility



NATIONAL TURFGRASS  
EVALUATION PROGRAM



ALLIANCE FOR LOW INPUT  
SUSTAINABLE TURF

## MANY CULTIVARS TO RESPOND TO A VARIETY OF NEEDS

The list of the cultivars has to meet the multiple needs of each manufacturer.

**AEG**

**Climatic area**

**Planting periods**

**Cultivation techniques**

**Terrain**

After careful research, to find the most suitable Cultivars of Kentucky Bluegrass, Tall Fescue and Perennial Ryegrass, Bottos Srl has selected the best production lots to ensure the absence of weeds, high germination and excellent germination energy. Once it has arrived in Bottos, the product is analysed by the internal research laboratories to ensure that each blend is the result of the most suitable selections for the various uses of ready lawns (use in sport, ornamental use, for extensive surface areas).

## HOW BOTTOS WORKS

### ON-SITE ANALYSIS OF THE PROFESSIONAL VARIETIES OF INTEREST

We go to the catalogue fields of seed companies in the USA to see, analyse and discuss with geneticists and their technicians to find a Cultivar for each specific need; in fact, not all Cultivars are the same. In addition, the American varietal tests alone are not sufficient and instead it is necessary to verify the adaptability to the different Italian areas with further tests and verifications.

### INTERNAL FIELD TEST

We perform an internal screening of the Cultivars that have intrigued us after the visits to the USA. We place them in cultivation through trusted customers in different climatic zones in Italy reproducing a kind of catalogue field.

### SELECTED CULTIVARS LIST

We only use Cultivars that respond best to the climate and soil conditions of our Peninsula.

### “00” LOTS

We only buy lots that have double “0”. Once the material arrives in stock, the triple control procedure is applied, that is, additional quantities of seed are taken to be analysed at independent accredited control institutes to reduce the risk of possible pollution (more controls, fewer risks). It involves taking several kg of seed randomly from every single lot present, and on each of them, 3 “mother samples” are made, which will be delivered to different external Analysis Laboratories that reverify their purity.

**Bottos uses only the lots that meet the infestation “0” Triple Control**



## FOCUS ON NEW VARIETIES

### TALL FESCUE

# MEISTER

MEISTER (Maestro in the USA) is the latest selection of Tall Fescue chosen by Bottos for the production of turf rolls and quality gardens. This is a total innovation in the seed landscape, managing to combine the quality characteristics of lawns with those related to rusticity and ease of maintenance. Its resistance to the *Rhizoctonia solani* (Brown patch) is very high, with obvious savings on all defence practices and on the use of pesticides. Its quick rooting, thanks to the balanced expansion of the epigenetic apparatus and roots, is further enhanced by the evident phenomenon of aggressive tillering with continuous and sustained production of side buds that colonise and close the spaces. The high concentration of cell juices, the large production of chlorophyll and the increased thickness of the cell walls are what gives MEISTER its particularly easy management. The chlorophyll photosynthesis is always active, even in low light conditions (summer and winter) and this allows a winter retention of the decidedly strong colour. The low amount of water in the cells creates in MEISTER the conditions to resist any kind of stress, from abiotic stress (drought, heat, cold, trampling, etc.) to biotic ones (diseases, attacks of insects, etc.). The quality is really superb, with intense colour and limited leaf texture. The management of cutting is therefore very simple and varied. It can go from 2.5-3 cm (during the vegetative growth season) up to more than 10 cm in conditions of municipal roundabouts and/or public parks. All this makes it possible to call it the variety par excellence that can be managed through traditional or robotic cutting. It is the Tall Fescue variety that currently performs better in conditions of shade and trampling. MEISTER is ideal in combination with other varieties of Tall Fescue from the Bottos range (Rebounder, Rockwell, Firewall, etc.) and with the best Kentucky Bluegrass (Award, Comet, Strenuus, etc.) for the production of turf rolls, for the planting of prestigious gardens, for the planting of playgrounds for sports use and for the rooting out of low maintenance areas.

Population range of Tall Fescues intended for the selection of the best plants in drought conditions.



### TALL FESCUE

# REBOUNDER

Aggressive tillering, Spring greenup, seedling vigour. These 3 features accurately depict the peculiarities of REBOUNDER. It is in fact a cultivar that manifests a heightened capacity to colonise the soils through the continuous and constant production of tillering buds from the collar and crown, with incessant formation of new, young and robust leaves. At the same time REBOUNDER is able to immediately resume the optimisation of all its photosynthetic functions at the first rise in temperatures, resuming an intense colour already in the very first phases of spring (always the first). The result is beautiful lawns even in conditions of returns of cold spells and/or the late development of spring conditions. Its colonisation and closing of spaces is maximum, with a clear reduction in the incidence of the presence of potential weeds. Quality, resistance to Brown patch, wear tolerance, tolerance to drought, low maintenance, increased persistence, fast recovery. These are the other innumerable qualities of REBOUNDER. The overall quality of the lawn is maximum with the presence of leaves with limited texture, but at the same time, leaves that are robust, hard and resilient. Its resistance to diseases has been further implemented and the variety has a high degree of natural endophytes. Tolerance to trampling and drought are really at the top for the *Festuca arundinacea* varieties, sign of leaves and structures able to regulate transpiration and of the increased thickness of the cell walls (mechanical barriers to shocks and stresses). The low maintenance needs (reduced number of cuts for low vertical growth and minimal nutritional requirements for high root system development) further improved the persistence of the classic 90:10 mixtures (Tall Fescue – Kentucky Bluegrass) by inserting REBOUNDER into the mixture. Its continued production of new leaves and shoots is instrumental in closing any gaps that could have been created due to mechanical causes and/or the incidence of potential fungal pathologies. For all these reasons, REBOUNDER is A-LIST certified and is currently one of the best Tall Fescue varieties on the market.

Turfgrass Quality Ratings: 1-9; 9=Ideal Turf

CULTIVAR	MEAN	CULTIVAR	MEAN	CULTIVAR	MEAN	CULTIVAR	MEAN
Turfway	7.3	Grande 3	6.9	Rain Dance	6.9	Aqueduct	5.9
<b>Rebounder</b>	<b>7.2</b>	Faith	6.8	Technique	6.2	KY-31	3.5
Foxhound	7.2	Falcon V	6.5	Saltillo	6.2	LSD @ 5%	0.5
Firewall	7.2	Meridian	6.4	Falcon IV	6.1		

Turfgrass Quality Ratings: 1-9; 9=Maximum Vigour

CULTIVAR	MEAN	CULTIVAR	MEAN	CULTIVAR	MEAN	CULTIVAR	MEAN
KY-31	7.3	Grande 3	6.5	Rain Dance	6.1	Hot Rod	5.9
Rowdy	6.8	Faith	6.3	Saltillo	6.1	Firebird 2	5.7
Temptation	6.6	Rhambler 2 SRP	6.3	Falcon V	6.0	LSD @ 5%	0.5
<b>Rebounder</b>	<b>6.5</b>	Bullseye	6.2	Maruder	5.9		

## KENTUCKY BLUEGRASS

# COMET

Is it possible to further improve the characteristics of a Kentucky Bluegrass?

COMET (SR 2284 in the USA) is the further response to this question. The researchers, through massal selection, have been able to create crossbreeds of different Kentucky Bluegrass families, uniting the peculiar characteristics of each ecotype. COMET, varietal selection by Seed Research of Oregon is a variety of Kentucky Bluegrass ascribable to the America ecotype. COMET is unique in its kind, combining characteristics of hardiness, ease of maintenance and speed of germination and lateral propagation/closure of spaces, with elements of strong tolerance to thermal stress, wear/tread, leaf diseases (Stem rust, Crown rust, Rust disease, Dollar spot, Typhula blight, Red Thread, Summer patch, Bipolaris spp., etc.) and drought. It has a bright colouration.

The seeds are of medium size with a large reserve of carbohydrates for potential germination even in difficult environments and/or in case of competition with other essences present on site (for example on the occasion of a transemination). It has an excellent quality of the grassy cotic and a very high persistence, both in case of high and low maintenance, from the climatic transition zones (continental areas of Italy) to the coastal and warm areas (Mediterranean coasts). It supports low cuts with use on sports lawns subject to intense traffic, but expresses its characteristics of excellence even at cutting heights well over 7-8 cm. The spring vegetative awakening is early, anticipating the recovery of colour and vegetative activity. Instead, its potential entry into semi-dormance during particularly cold temperatures is postponed over time, maintaining intense and lively shades. Of particular importance is its competitiveness against invasion by annual meadow grass and/or other weeds, always keeping

the grasses closed, dense, healthy and beautiful. Its growth in height is contained with limited maintenance requirements. It is ideal for use in single variety, as well as in association with Tall Fescue (Rebounder, Meister, Rockwell, Firewall) and/or with fine leaf essences (Perennial Rygrasses and Red Fescues). COMET offers protection, shelter and coverage for all turf surfaces. As already mentioned, it is very high-performance both in high-intensity conditions with low cutting heights, and in situations of reduced management inputs with low levels of fertilizer, water and agronomic practices reduced to the minimum. Anyone who sows COMET know perfectly well to choose the following characteristics: high resistance to drought, early spring vegetative recovery, endurance of high temperatures, maximum tolerance towards leaf diseases (Rust in the first place).



## PERENNIAL RYEGRASS

# BENCHMARK

Variety created by the selectors in order to obtain an intense-bright green of Perennial Ryegrass, with endophytes, strong and of the highest quality. High resistance to trampling and traffic. This characteristic makes it particularly interesting for all sporting uses. Very resistant to diseases and abiotic stresses, it is a medium-to-fine textured cultivar of particular interest for transitional geographical areas: it is perfect, in fact, in association with other Perennial Ryegrass varieties for overseeding on Bermudagrass as well as in association with Kentucky Bluegrass varieties for perennial microthermal grassing over. Very high resistance to *Piricularia* (Gray Leaf spot).



## PERENNIAL RYEGRASS

# GALLEY STAR

GALLEY STAR (SR 4650) is a very new generation variety selected for its great resistance to fungal pathologies, in particular to those of a leaf nature (Gray Leaf spot and others). Its rapid tillering and its endurance to trampling make it a fundamental element in the preparation of turf rolls when one wants to use the Perennial Ryegrass. It has a proven ability to emit lateral pseudostolons, making it able to close spaces, providing a natural containment of weeds. Being of a more prostrate variety, its potential emission of flowering stems is also very limited, thus maintaining a first-class aesthetic appearance even in the hottest months. Its resistance to drought is high both in case of direct lack of water but also in its subsequent capacity to recover the colour and all the physiological functions of the plants. This is also associated with a well-developed salinity tolerance (possible excess concentrations of fertilizers and/or use of "salty" waters). GALLEY STAR can also be used as an element to perform transemines on Bermudagrass clods already directly in the production fields.

## PERENNIAL RYEGRASS

# THRIVE

Variety created by the selectors in order to obtain an intense-bright green of Perennial Ryegrass, with endophytes, strong and of the highest quality. High resistance to trampling and traffic. This characteristic makes it particularly suitable for all sporting uses. Very resistant to diseases and abiotic stresses, it is a medium-to-fine textured cultivar that is particularly suitable for transitional geographical areas: it is perfect, in fact, in association with other Perennial Ryegrass varieties for overseeding on Bermudagrass as well as in association with Kentucky Bluegrass varieties for perennial microthermal grassing over. Very high resistance to the *Magnaporthe grisea* (Gray Leaf spot). THRIVE is found to have an endophytes level greater than 85%; the specific presence of the symbiont beneficial fungus of the *Neotyphodium* genus also produces greater mechanical resistance to the entire structure of the plant (leaves, roots and stem) resulting in tolerance to the most varied types of stress. THRIVE is enrolled and certified in A-LIST, a non-profit certifying organization that tests and selects varieties that meet quality criteria along with low-impact values and characteristics (lower number of treatments, reduced use of fertilizers, low water input, minimal management of cutting).



# KENTUCKY BLUEGRASS

**LUNAIRA** | Cultivar of the Kentucky Bluegrass Compact-America Midnight type, therefore characterised by fine leaf, slow and compact growth with dark colouring, good growth in conditions with 30% reduced light. Presents scarce winter dormancy. Fast in rooting with prostrate vegetative position that allows one to manage it with cuts even at 15 mm in height. It has very good tolerance of the summer diseases typical of the Kentucky Bluegrass, such as NRS, Dollar Spot, Anthracnose and Rust. Germinates in 8-10 days and the first cut can be made after 40 days. It withstands trampling well thanks to the high capacity of self-regeneration.

**AWARD** | Dark green Kentucky Bluegrass variety of very fine texture, tolerant to low cutting even up to 12 mm, it withstands shade with good resistance to Brown patch and Anthracnose. Tolerance to summer drought. Designed to improve the performance of lawns for sport use. It behaves better than other Kentucky Bluegrass in shaded conditions under deciduous trees. It maintains a dark green colouration even in winter and shows a prompt vegetative recovery in the spring. It does not produce many inflorescences compared to the average of the other Kentucky Bluegrass for lawns, making the lawn much denser, thicker and more uniform. It adapts particularly well in association with Perennial Ryegrass and Tall Fescue.

**RUGBY II** | Variety selected for the construction of Kentucky Bluegrass-based lawns in difficult environments characterised by hot-wet weather or in shaded areas. Ideal variety for the northern Italian areas, particularly characterised by hot-wet summers. Rugby II, in these conditions, gives the best of itself, thanks to the formation of a dense, dark green sub-strata with fine texture. Excellent performance even in shaded areas. Variety recommended for all professional and hobby uses for its proven adaptability to any situation.

**SR 2100** | SR2100 is one of the first Kentucky Bluegrass types selected to meet the needs of ready lawn manufacturers, obtained by making several crossbreedings with very vigorous Kentucky Bluegrass varieties. It is a particularly aggressive variety with medium-green colour, manifesting a strong tolerance to Anthracnose, Red Thread and Dollar spot, it reacts well to water shortages. It successfully associates with varieties of Perennial Ryegrass and Tall Fescue. Cultivar of Kentucky Bluegrass that makes it possible to have a mature turf ready for use or for sale in a short time.

**QUANTUM LEAP** | Kentucky Bluegrass Midnight type. For this reason it manifests a great quality associated with a strong resistance to pathologies such as *Microdochium nivale* and *Sclerotinia homeocarpa* (Dollar spot). Even with regard to Damping off (seedlings disease), its response is one of the best among the varieties on the market. QUANTUM LEAP has been selected for its improved response to rust on both the stem and crown. Variety with high-density of the culms, it counters the invasion of weeds through the emission of robust rhizomes that always produce new shoots that leave no empty spaces. Its vertical growth is reduced, decreasing the numbers of cuttings necessary and making its maintenance practical and economical. Even its production of felt is lower than many other Kentucky Bluegrass cultivars and this aspect makes even more understandable its great ability not to create the conditions for the development of fungal pathologies. Maximum resistance to high temperatures and good vegetative and colour recovery in spring as the temperatures rise.



**STRENUUS** | The Kentucky Bluegrass STRENUUS is synonymous with speed and it is characterised in the speed in the planting phase, starting from the very first days after being planted. It also manifests a fast recovery capacity following any tears and/or wear, and in a rapid spring green-up (vegetative recovery and very dynamic colour, already in the first days of slightly higher temperatures). The vigour and responsiveness of STRENUUS makes the Tall Fescue and/or Lolium perenne-based blends stable, with high performance already in the early stages of development, and accelerate root system formation, maturation of the sods, leaf density and coverage of the soil. STRENUUS also has a major delay in the winter semi-dormant phase, maintaining a vivid and intense colour when the first winter colds arrive.

# KENTUCKY BLUEGRASS

TYPE	DESCRIPTION	BOTTOS EXCLUSIVE VARIETY	OTHER VARIETIES
<b>COMPACT America</b>	Low, compact, of high quality. Fine leaf, high density. Moderate winter dormancy. Excellent recovery from summer stresses. High resistance to Summer Patch, resistant to Mildew. Excellent adaptability to shade.	COMET: intense colour, moderate winter dormancy, good tolerance to stresses. STRENUUS: dark colour, low and compact growth, good tolerance to fungal pathologies.	America, BlueNote, Casablanca, Katie, Royale, Apollo, BlueMax, Delight, Langara, Shiraz BlueRidge, Dynamo, Mallard, Sonoma, Arrow Bluetastic, Diva, Mercury, Unique, Barnique, Bordeaux, Empire, Moonlight, Valor, Baroness, Boutique, Glenmont, Monte Carlo, Voyager II, Bedazzled, Brilliant, Goldstar, Royce.
<b>COMPACT Midnight</b>	Low, compact growth. Dark green colouring. Late spring awakening. High tolerance to heat stress. Excellent resistance to the Summer Patch.	LUNAIRA: intense dark colour, very high density, high resistance to drought and fungal diseases, excellent recovery capacity. AWARD: high resistance to fungal pathologies, high density, very dark colour, tolerates cutting heights up to 1.5 cm. QUANTUM LEAP: dark colour, low and compact growth, excellent tolerance to fungal diseases, excellent tolerance to shade.	Absolute, Excursion, Odyssey, Awesome, Explorer, Rhythm, Bannister, Freedom III, Skye, Beyond, Front Page, Total Eclipse, Blue Stone, 4-Seasons, Tsunami, Blue Velvet, Ginney, Chicago II, Courtyard, Midnight, Midnight II, Everglade, Perfection, Liberator, Nuglade, Rugby II.
<b>COMPACT Mid-Atlantic Aggressive</b>	Deep and extensive roots and rhizomes. Medium-high density. High resistance to summer stresses. Quick spring vegetative recovery. Excellent winter performance. Quick recovery from diseases.		Appalachian, Aura, Cabernet, Livingston, Preakness, Right, Zinfandel.
<b>COMPACT</b>	Low, compact growth. High quality of the lawn. Cutting height up to 1.5 cm. Excellent resistance to Leaf Spot.		Ascot, Hallmark, Baronie, Hampton, Blacksborg II, Moonshadow, Blackstone, Wildwood, Blue Sapphire, Bravado.
<b>COMPACT P-105 Type</b>	Aggressive growth of rhizomes. High density. Very tolerant to diseases and rapid vegetative recovery.		A-34, Champlain, Jefferson, P-105, Touchdown, Washington.

TYPE	DESCRIPTION	AN EXCLUSIVE EXCLUSIVELY VARIETY	OTHER VARIETIES
<b>SHARMROCK</b>	Low, compact growth. Excellent resistance to Leaf Spot. Strong rhizomatous development/ self-regeneration.	SR2100: germplasm with characteristics of precocity and colonisation (Shamrock selection) combined with aggressive and self-regenerating behaviours (America Aggressive selection). Ideal for the formation of new meadows and/or for regeneration/transmination operations.	Brooklawn, Mongoose, Champagne, Moonshine, Champlain, Parkland, Durham, Shamrock, Gaelic olt, Lakeshore, Wildhorse.
<b>JULIA</b>	Excellent aesthetic appearance. High density. Excellent resistance to summer stresses. High resistance to diseases.		Bariris, Baritone, Caliber, Ikone, Julia.
<b>TEXAS X Kentucky Hybrids</b>	Hybrid between Kentucky Bluegrass arachnifera and Kentucky Bluegrass. Tolerance to heat. Extensive rhizomes. Tolerant to drought with excellent vegetative recovery.		Armadillo, Reveille, Dura Blue, Solar Green Fahrenheit 90, Thermal Blue, Fire and Ice, Thermal Blue Blaze, Longhorn.
<b>BVMG</b>	Good straight, resistant stem. Low growth.	BLUESTAR: resistance to leaf diseases. Reduced vertical growth and low production of felt.	Abbey, BlueStar, Envicta, Misty, Baron, Corsair, Fortuna, Raven, Baronette, Crest, Gnome, Rush, Bartitia, Denim, Goldrush, Victa, BlueChip, Dragon, BVMG Merit, Nu Blue Plus, Blue Chip Plus.
<b>LIMOUSINE</b>	High density. Fine weave. Light green colouring. Tolerance to heat.		Freedom II, Julius, Limousine.
<b>SYDSPORT</b>	Excellent quality of the turf. Low growth. Medium leaf width.		Chateau, Coventry, Fairfax, Lily, Serene, Sydsport.
<b>EURASIAN Midwest (Common)</b>	Midwest ecotype.		Alene, Ginger, Rhonde, Arc, Greenly, Voyager, Argyle, Huntsville, Wellington, Blue Angel, Jewell, Cache, Moonstruck, Eagleton, Piedmont.



## TALL FESCUE

**INFERNO** | Inferno is the confirmation of the precise Bottos proposal obtained from the advanced genetic choices made up to now, thanks to continuous improvements developed over the decades making it possible to obtain turf essences that are increasingly responsive to users' needs. Inferno is at the forefront of the varietal selection and of the performance of the various turfs. It improves all aspects of the most modern Tall Fescue varieties such as: environmental adaptability in different areas, dark green winter and summer colouring, increasingly fine leaf, possibility of achieving excellent results with any level of maintenance. Finally, this new variety has particular resistance to Gray Snow Mold and diseases that propagate in the summer, such as *Rhizoctonia solani*.

**FIREWALL** | FIREWALL (PS6-WEI) is a Turf-Type Tall Fescue; it works, as the name suggests, by creating a barrier that keeps out the Brown Patch (*Rhizoctonia solani*) and degradation due to intense wear. It also shows an excellent tolerance to shade conditions. Together with these FIREWALL characteristics, it is one of the best Tall Fescues also from a qualitative point of view, ensuring top performance in every type of environment, both continental (Padano area) and Mediterranean. It tolerates cutting heights of up to 15-18 mm during periods of intense vegetative activity, which makes it one of the most versatile varieties on the market. Other specific elements of FIREWALL are its high resistance to drought, thanks to the dense and fasciculated root system, and the continuous production of lateral tillering offshoots (aggressive tillering) that allows the natural control of weeds.

**BRIGANTINE** | Semi-dwarf cultivar of Tall Fescue with fine leaf and dark green colouring of good density and uniformity. Quick in rooting. Good propensity to emit rhizomes even in relation to its growth environment, sowing dosage and environmental stress. Excellent tolerance to Brown Patch and Rust. It has good growth with excellent performance even in shaded areas. Recommended in warm environments with reduced water availability, it has prompt vegetative recovery at the exit of the winter period. The cultivar has natural endophytes that improve its resistance to attacks of insect larvae in the soil and increase its resistance to summer drought. This cultivar is used for the production of ready lawns and germinates after about 7-15 days. The first cut can take place after 25 days.

**AGGRESSOR** | The Tall Fescue Aggressor has strong density with closing of the spaces and, already at an early stage, presents high competition with the other essences potentially present in the lawns. Its fine leaves, together with the high number of culms/dm<sup>2</sup>, gives it an attractive and refined aesthetic appearance. The colour is intense with strong development of photosynthetic capabilities and consequent accumulation of reserves of carbohydrates to "attack" environmental stresses. Its resistance to trampling is definitely marked, easily withstanding intense loads of use as well as repeated passages of vehicles, even during cultivation. Excellent resistance to leaf diseases, and particularly to Red Thread.

**ROCKWELL** | The Tall Fescue ROCKWELL has been selected to grow and persist in defined transition areas (e.g.: the entire Italian area, from the Alps to the islands to the hottest areas) in extreme conditions. These prerogatives are also valid in any other geographical area that limits the summer performance and/or the persistence of the lawn (warm, arid and dry climates). ROCKWELL is a variety defined as "high tillering" that therefore presents a very high capacity and enhancement of the phenomenon of tillering, forming very dense tufts that close the lawn and leave no room for weeds. The numerous side buds that start from the collar therefore allow the constant presence of young, healthy and strong elements. Its germination speed is also highly developed, making this variety ideal in the association with Kentucky Bluegrass for the formation of sods. ROCKWELL exhibits a high level of quality associated with a marked robustness in conditions of drought. This is why it is A-LIST certified. Its root system, deep and bunched, gives ROCKWELL a surprising ability to endure all periods of stress that, coupled with its continuous production of lateral culms for tillering, allows the constant presence of lawns that are closed, dense, intense and, above all, healthy, economical and with low environmental impact.



## PERENNIAL RYEGRASS

**BERLIOZ 1** | Bottos has also focused its efforts on research and the selection of materials to be used in the light leaf blends sector. In the field of Perennial Ryegrasses one of the selections fell on BERLIOZ 1. It is a variety of perennial *Lolium* with the best overall ratings within the various European trials. In fact BERLIOZ 1 is a truly outstanding variety, being ranked top in all three major recommended lists, namely Bingley in the UK, Gragids in the Netherlands and the French varietal list for sports use. It has a high leaf fineness related to an exceptionally high resistance towards low cuts, thus being able to be used also on Golf Courses or on surfaces mowed with a helical machine. Its colour is medium-light with erect leaves (facilitated passage of air with reduced incidence of disease). Its resistance to Rust is far above average, as well as to Red Thread and *Microdochium nivale*. It is very suitable and versatile in all areas, combining quality characteristics as well as the very strong tolerance to wear and tread and the pronounced resilience through the germination and tillering of side buds.

**GILDARA** | GILDARA is another example of the very first place in the European rankings of merit and is even in first place in the Dutch varietal lists for use on turf. In the STRI tests (England), this variety ranks first in terms of density, leaf fineness and slow and reduced growth rate (reduction of cutting residues with saving of management costs); the tests were carried out both on lawns for sport and on turf for ornamental-recreational purposes. In all cases GILDARA has always shown results of absolute excellence. Its colour is bright green with perfect "marriage" with European germplasm variety and/or medium shades.

## MIXTURES WITH TALL FESCUE AND KENTUCKY BLUEGRASS

### PG 955

Composition: **95%** Tall Fescue + **5%** Kentucky Bluegrass



### PG 9010

Composition: **90%** Tall Fescue + **10%** Kentucky Bluegrass



### PG 8515

Composition: **85%** Tall Fescue + **15%** Kentucky Bluegrass



### PG 8020

Composition: **80%** Tall Fescue + **20%** Kentucky Bluegrass



WE FORMULATE THE BLENDS CHOOSING  
FROM THE AVAILABLE CULTIVARS THOSE MOST  
SUITABLE FOR THE NEEDS OF OUR CUSTOMERS

## MIXTURES WITH PERENNIAL RYEGRASS AND KENTUCKY BLUEGRASS

### PG 1000

Composition: **100%** Blend of Kentucky Bluegrass varieties



### PG 5050

Composition: **50%** Perennial Ryegrass + **50%** Kentucky Bluegrass



### PG 6535

Composition: **65%** Perennial Ryegrass + **35%** Kentucky Bluegrass



# MACROTHERMS

**BERMUDAGRASS ROYAL BENGAL** | Royal Bengal shows its high quality in a variety of situations. It easily adapts to different terrains and environments, and its performance is excellent both in tropical or arid areas as well as in transitional areas. It has moderate tolerance to cold and good resistance to the Spring Dead Spot. It tolerates high temperatures and has very high resistance to drought and salinity. Royal Bengal has a medium-fine texture and excellent density, proving to be a very aggressive variety. Its high density helps prevent weeds from taking root. Royal Bengal can be used for fields for use in sport, sod lawns, parks, schools, tees and fairways for golf courses. Its speed makes it the optimal solution for repairing damaged areas in already established Bermudagrass lawns.

## PG9BAN

Composition: **100%** Cynodon Dactylon



# THE COATING OF THE SEED

The phase of seeding from scratch is a very delicate moment. The turf seed once moistened for germination becomes a potential hotbed for very aggressive and harmful fungal pathogens (Pythium spp in particular), seriously threatening the development of roots within the blend. The operation of coating (treatment with products that are protective or for improved seed germination) is the only time when it is possible to bring phytostimulating or protective products directly to the root without having the soil as an obstacle. In fact, “smearing” the seed with substances based on useful microorganisms (Trichoderma, Mycorrhiza and PGPR) is able to establish, in a short time, the process of mutual symbiosis between mycorrhiza and the plant cell, with a great advantage in the initial production of the root system and general resistance of the plant in the early stages of growth and tillering. Bottos, on request, is able to pre-treat the seed through a dry coating process, while mixing the blend, with a mix of Mycorrhiza to establish the symbiosis and give that advantage in the production of the root system (up to 3 times compared to untreated seeds), Trichoderma spp, to protect against attacks of the main lurking pathogens and PGPR bacteria that can perform several positive functions, including the production of fungistatic substances (that block the development of pathogens) and improving the availability of Phosphorus in the Rhizosphere.

UNCOATED SEED



COATED SEED



- BETTER DEVELOPMENT OF THE ROOT SYSTEM
- BETTER ABSORPTION OF THE MICROELEMENTS
- INCREASED ENDOGENOUS RESISTANCE OF THE TURF
- REDUCED DAMAGE FROM ABIOTIC STRESSES



**POLYON** is a specific patent of **exclusive distribution of Bottos for Italy** that brings about the release of the nutrient forms through the processes of osmosis and diffusion. Its special formulation and studied protective membrane are elements that guarantee its effectiveness, all the more so during the **summer periods**, where the attention of good maintenance personnel must be at its maximum.

But how does the **release of Nitrogen** work in the **POLYON** system?

In the first week after distribution on the ground, the polymer coating allows the moisture of the circulating solution to penetrate inside the granule, **activating the nutrients within the protection**, but not yet allowing them to be released into the external environment (process of osmosis). Even just a quota of 6% humidity is enough to set off the process of activation of the system. The nutrients begin to dissolve internally, until they all arrive at the liquid state. Some time has passed and from this moment and for several months (depending on the thickness and characteristics of the membrane) there will be the constant and gradual release of the nutrients through the **phenomenon of diffusion**, exclusively triggered and boosted by **rising temperatures**.

The nutrients are then released in relation to the actual needs and demands of the plants. The release of **POLYON** stops below 4°C and the nutrients are no longer released. The granule therefore empties itself from the inside to then undergo degradation by the microorganisms also of the outer capsule that naturally decomposes, releasing additional nutrients into the soil.

Thus, the release of Nitrogen occurs mainly **under temperature control**, which dilates the diameter of the micropores of the protective polymer membrane by varying degrees.

**POLYON** has been tested at a high number of temperature variations to determine the speed of release of the substances. Consistent laboratory tests were carried out at **more than 30°C** to be sure that the summer fertilizers were also successful.

**Polygon contains no dust and is perfectly dry.** Its distribution is therefore simple, immediate and totally harmless to humans, animals and the environment. To make it “invisible” in the gardens, a **green non-toxic dye** has been introduced that characterises the granule that assumes this same colour.

With **POLYON** technology, the fertilizer granules remain **attached** to the soil and are gradually **incorporated** into it. There are therefore no losses of material through the aspiration that takes place with cutting machines (rotating).

**POLYON** is therefore the quintessential system for **maximising the yield and efficiency** of the distributed fertilizers and it is the form of environmental safety in the context of fertilizers.





# PURKOTE

ADAPTIVE NUTRIENT DELIVERY

## TAKE CONTROL WITH THE PURPLE POWER

**PURKOTE** is the new technology introduced **exclusively by Bottos** to further improve the performance of fertilizers specifically designed for the production of turf rolls and turf as a whole.

It is a **controlled release system** falling under the category of PCU (Polymer Coated Urea). This creates a flexible and adaptable fertilizer designed **to work in the most difficult growing conditions**.

The release of nutrients is independent of the acidity of the soil and/or that of the circulating solution, moisture or microbial activity, **but is related only to temperature**.

**PURKOTE**, a new generation fertilizer, is designed for the adaptive delivery of nutrients **for up to 120 days** and can withstand the most difficult weather conditions, such as heavy rains, without leaching and/or leaks in groundwater or due to ammoniacal volatilisation.

The special patented coating provides constant, genuine, safe performance, always in relation to the actual nutritional needs of the plants.

Some of the unique characteristics of **PURKOTE** for the specificity of its coating are:

- preventing coated fertilizer particles from floating and drifting due to water and/or wind
- anchoring to the granule soil while reducing the possibility of rolling/transferring to unwanted areas
- minimising the buoyancy phenomenon by reducing the surface tension of the water.

**PURKOTE** is recognised, authorised and registered in the USDA/EPA Enhanced Efficiency Fertilizer Challenge (U.S. Agriculture Department), which recognises fertilizers currently on the market that **reduce environmental impact** and presenting additional benefits to growers and consumers.

A classic SCU (Sulphur Coated Urea) release system manifests a “catastrophic release” (breakage of the coating) ranging from 30% to 35% due to damage caused by the speed of the fan blades of the spreader and by the various material handling operations (transportation, storage, etc.). With **PURKOTE** technology there is a **reduction of this phenomenon by far more than 70%** with potential minimum breakages of the film. This results in ease and safety in every moving, loading and mixing process, reducing friction and eliminating granule fractures.

### DURATION OF RELEASE OF PURSELL TECHNOLOGY 45-0-0

15°C 120 days	22°C 90 days	30°C 60 days
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# GRANULAR FERTILIZERS

## SLOW RELEASE NITROGEN

(EEF Enhanced Efficiency Fertilizer)

**DURATION UP TO 10 WEEKS**

**UNIQUE AND DURABLE COATING THAT ALLOWS A CONSTANT RELEASE FEWER APPLICATIONS, LESS**

**INTERVENTION COSTS, LESS MAINTENANCE ON THE DISTRIBUTION EQUIPMENT**

**LOW POTENTIAL FOR NUTRIENT LEACHING, DENITRIFICATION, RUN-OFF AND VOLATILISATION**

**NOBLE ORGANIC SUBSTANCE, HIGHLY SOLUBLE, RICH IN ESSENTIAL AMINO ACIDS**

### Sod Grower 20.0.18 + 2 MgO + 1 Fe

Programmed release maintenance fertilizer with microelements. For use as a base for the entire annual fertilization system of the cultivation of the turf rolls and as "closing" fertilizer.

MACROELEMENTS		MICROELEMENTS	
Nitrogen	20.0%	Magnesium	2.0% MgO
	1.2% Ammoniacal N	Iron	1.0% Fe
	18,8% N urea of which 6,6% is coated	Sulphur	26.0% SO <sub>3</sub>
Potassium	18.0% K <sub>2</sub> O		

### Deep 16.0.15 + 2 MgO

Mineral organ fertilizer balanced with micro-organisms and constant nutrient release curve. Extremely flexible, it responds to a wide variety of needs during the production cycle, from maintaining of the lawn during each season at variable dosages, to the support for the closure of the clods that do not remain together in "cold" soils, with little microbial activity.

MACROELEMENTS		MICROELEMENTS	
Nitrogen	16.0%	Magnesium	2.0% MgO
	1.8% Ammoniacal N	Sulphur	22.0% SO <sub>3</sub>
	8.7% N urea 2.2% coated		
	5.5 N urea formaldehyde		
Potassium	15.0% K <sub>2</sub> O		
ORGANIC SUBSTANCE			
O.S.			16%

### K Professional 10.0.30

Programmed release anti-stress root boost fertilizer to be used as a deepening and hypogeeal development fertilizer, counteracting the retraction of roots under unfavourable temperature conditions.

MACROELEMENTS		MESOELEMENTS	
Nitrogen	10.0%	Sulphur	25.0% SO <sub>3</sub>
	10.0% N urea fully coated		
Potassium	30.0% K <sub>2</sub> O		

### Germination 10.15.10 + 2 MgO

Mineral organ fertilizer with programmed and balanced release for sowing. It accompanies and supports the entire initial phase of the production cycle, from germination to rooting, promoting rapid access. Also perfect for the laying of new clods

MACROELEMENTS		MICROELEMENTS	
Nitrogen	10.0%	Magnesium	2.0% MgO
	3.7% Ammoniacal N	Iron	0.5% Fe
	6.3% Urea N	Manganese	0.2% Mn
Phosphorus	15.0% P <sub>2</sub> O <sub>5</sub>	Zinc	0.007% Zn
Potassium	10.0% K <sub>2</sub> O	Sulphur	13.0% SO <sub>3</sub>

ORGANIC SUBSTANCE	
O.S.	+ Zeolite 20% (out of the total components)

### CT3 14.0.0+2.5 MgO

Fertilizer characterised by a nutritional progression that keeps the contribution of the components stable from the early stages of germination. The Nitrogen forms present promote the metabolism of plants with persistent and long-lasting release. The noble amino acids inserted provide the turf with an energy reserve that allows vegetative recovery even after stressful situations.

MACROELEMENTS		MICROELEMENTS	
Nitrogen	14.0%	Magnesium	2.5% MgO
	10.0% N organic	Sulphur	5.0% SO <sub>3</sub>
	4.0% N from methyl. eneurea		
ORGANIC SUBSTANCE			
C			33.0% organic of the dry subst.

### CT4 10.0.0+2.5 MgO

Fertilizer that promotes rapid access rather than leaf elongation, while providing an intense colouring. Enriched with biochar, it facilitates microbial activity in the soil, improves CSC and ensures the correct level of moisture in the soil.

MACROELEMENTS		MICROELEMENTS	
Nitrogen	10.0%	Magnesium	2.5% MgO
	10.0% N organic	Sulphur	5.0% SO <sub>3</sub>
ORGANIC SUBSTANCE			
			33.0% organic C of the dry substance



# FERTILIZERS AND LIQUID BIOSTIMULANTS

As a complement to granular fertilization, we have developed a wide range of liquid fertilizers ranging from leaf nutrition to possible use in fertigation, extending even to specific emergency recovery and/or restoration of soil biofertility. The company's technicians have developed a series of fertilizers that are part of the line and are particularly suitable for the resolution of difficult and/or particular situations. The focus of these products is the development of leaf nutrition and biostimulation, created as an integration to the granular fertilization programme. The biostimulants include algae extracts, L-amino acids, vitamins and metabolising complexes. The proposal is completed by a series of special products which fall into the category of resistance inductors and are useful for specific situations, sometimes solving very complex problems with full respect for nature and the environment.

LIQUID FERTILIZERS

## TARGET

Fertilizer solution NK (SO<sub>3</sub>) 11.11 (19) with Iron (Fe) chelated DTPA, it is a fertilizer specifically designed for the technical nutrition of turf. The high content of slow release from methyleneurea allows the use of the fertilizer even in particularly difficult conditions (heat, cold, drought) without danger of burning. Its life is up to 3 times longer than traditional liquid fertilizers. Ideal for emergency recovery fertilization of the lawn, it can be absorbed both by leaves and through the roots.

### COMPOSITION

#### Macroelements

Nitrogen	11.0%
	4.5% Urea N
	6.5% N from methyleneurea
Potassium	11.0% K <sub>2</sub> O

#### Microelements

Sulphur	19.0% SO <sub>3</sub>
Iron	0.5% DTPA chelated Fe

### DOSES

#### In fertigation

25-60 Kg/Ha

#### For air treatments

15-40 Kg/Ha

## SOD ENERGY

Nitrogenous fertilizer fluid rich in non-washable organic iron from integral blood fraction with very low molecular weight. It contains a large quantity of noble amino acids, including: Aspartic Acid, Glutamine Acid, Alanine, Arginine, Phenylalanine, Glycine, Hydroxyproline, Isoleucine, Histidine, Leucine, Proline, Serine, Tyrosine, Threonine, Valine, Methionine, Tryptophan. It guarantees an enhancement of metabolic activities that results in a greater speed of rooting, in an intense colouration with high photosynthetic yield and in a recovery from abiotic stresses. It is enriched with special formulas of Magnesium and micronised Zeolites, increases the capturing of light and the production of chlorophyll.

### COMPOSITION

Nitrogen	4.0% N organic in nature
Magnesium	2.0 MgO
Carbon	14.0% of organic origin

### DOSES

#### For air treatments

5-10 Kg/Ha

LIQUID FERTILIZERS

## SOD SILICA

It is a concentrated suspension based on Silicon and Potassium in the form of oxides. It is found to perform the functions of bioinducer and phytofortifier, increasing the mechanical barriers of plant protection, improving photosynthetic processes and performing a healing action on the leaves. Capable of reducing evapotranspiration, it greatly improves the strength of the rolled-up turf to be delivered and optimises the quality of the cut in production

### COMPOSITION

#### Macroelements

Potassium	10.0% K <sub>2</sub> O
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#### Microelements

Silicone	23.0% SiO <sub>2</sub>
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### DOSES

#### In fertigation

20 Kg/Ha

#### For air treatments

6-12 Kg/Ha

LIQUID BIOSTIMULANTS

## FOREVER

Universal biostimulant. Plant hydrolyzate with low molecular weight. It is a completely organic and natural product, since it is a protein hydrolyzate extracted from sugar cane. The use of this product makes it possible to create a complete nutritive base by integrating it with the granular fertilising of the lawn. It has its own corrective properties and can be used as a biostimulant during periods of greater stress. Also perfect for acidifying solutions.

### COMPOSITION

Organic substance	35.0%
Humic extracts out of the total	18.0%
Humic Acids	8.0%
Fulvic Acids	10.0%
Nitrogen	2.0%
Phosphorus	0.14%
Potassium	4.0%
Magnesium	0.48%
L-amino acids	1.0%

### DOSES

#### In fertigation

40-120 Kg/Ha

#### For air treatments

5-10 Kg/Ha

## STRESS IN

Concentrated 30% Ascophyllum nodosum algae solution collected in the waters of the North Atlantic Ocean. It is a completely vegetable product containing more than 65 elements of natural origin that are growth promoters useful for the vital functions of the lawn. It contains macro, meso and microelements, alginates, enzymes, proteins and a high percentage of cytokine.

### COMPOSITION

Nitrogen	1.0% N organic
Organic carbon	10.0 C of biological origin
Organic substance	30.0% only of plant origin with a nominal molecular weight of less than 50 kDa

### DOSES

#### In fertigation

15-20 kg/Ha

#### For air treatments

6-10 Kg/Ha

**HUMIC SOD**

Organic Nitrogenous fertilizer of vegetable origin and fluid stillage not extracted with ammoniacal salts, it is a fertilizer specifically designed for the technical nutrition of lawns; it is a product that is particularly suitable for the harmonious development of the plants.

**COMPOSITION**

Organic substance (1)	15.5% as it is
Organic substance (2)	60% on dry
Organic substance (3)	80.0% humidified on the o.s. as it is
N/A Ratio	60

**DOSES**

In fertigation  
40-80 Kg/Ha

**PSE**

It is a new family of products based on PROBIOTIC microorganisms (bacteria, fungi and their derivatives) selected for their specific functions. The particular and unique microbial activity of PSE (microorganisms + metabolites + culture broth) combined with the innovative technologies applied represent a powerful tool that completes and expands the cultivation plan of the Premium Green offer, integrating perfectly into the cultivation processes of each turf sod grower.

**SOD PROMOTER**

Eluate (solution obtained from substances previously retained by material with adsorbent power) with powerful biostimulating action, achieved by the fermentation of lactobacilli in a sugar compound, purified from the same bacteria by an innovative industrial process. It contains sugars and hexanoic acid, capable of activating resistance induction through the deposit of salicylic acid, jasmonic acid and callose while successfully reducing oxidative stress and accelerating the growth of the plant. It is also very rich in amino acids, nourishes the bacterial flora of the soil, activates the immune response and significantly improves the response to stress. The constant use of SOD PROMOTER guarantees the enhancement of the action of other Premium Green probiotics and plant hydrolysates, giving the turf a greater speed of closure and rooting.

**COMPOSITION**

Nitrogen	3.5% N
Phosphorus	1.0 P
Potassium	0.5% K
Dry substance	35.0%
Free amino acids	12.0%
Lactic acid	15.0%
Protein	12.0%

**DOSES**

Fertigation and air treatments  
5-25 Kg/Ha

**SOD CONTROLLER**

Produced with Pseudomonas Protegens in its culture broth. It is a non-sporigenous bacterium that produces specific secondary metabolites that develop a powerful biocontrol function in the metabolic processes of the turf. It intervenes in the solubilisation of Phosphorus making it available to the plant, produces and induces the production of phytohormones (auxins) and improves the assimilation of iron. Its regular use stimulates faster and more complete rooting, gives an intense and lasting colour to the leaf, produces a healthier clod with greater resistance of the same in the phases of collection and laying and determines rapid rooting in the final place of destination

**COMPOSITION**

Plant extract of molasses and/or other sugar matrix with a liquid culture of pure strain of Pseudomonas protegens ( $5 \times 10^9$  CFU/g) and mycorrhizal inoculum

**DOSES**

In fertigation  
5 Kg/Ha  
For air treatments  
2 Kg/Ha

**SOD BOOSTER**

Consortium of Nitrogen-fixing microorganisms with selected strains at very high concentration (Bacillus velezensis, Azotobacter chroococcum, Azospirillum brasilense) lyophilised on a sugar matrix with very high solubility. Optimises and makes Nitrogen available for grass roots, both microtherms and macrotherms. The microorganisms contained are involved in Nitrogenase processes and in the biological fixation of Nitrogen, transforming  $N_2$  Nitrogen into  $NH_3$  assimilable Nitrogen. It induces a significant increase in biomass while eliminating the toxic effects of radical exudates that are instead a source of nourishment for the inoculated bacteria and can be used by the clod manufacturer to accelerate closure and maintain the tone of the turf during periods that are climatically unfavourable or that involve high stress.

**ANALYSIS**

Bacillus velezensis	$2 \times 10^9$
Azotobacter chroococcum	$5 \times 10^8$
Azospirillum brasilense	$3 \times 10^9$
Mycorrhizae	10.0%
Maltodextrin	As required

**DOSES**

Fertigation and air treatments  
500 g/Ha

**SOD GUARD**

Consortium of selected bacilli (Bacillus subtilis, Bacillus amyloliquefaciens and Bacillus velezensis) in fluid yeast extract that constitutes a proactive bio-barrier to harmful microorganisms (bacteria, fungi, nematodes). Direct action on the increase in SAR (Systemic Acquired Resistance). It contains microorganisms that directly produce enzymes (amylase, protease, lipase, phytase), antibiotic, antibacterial and antifungal compounds and produces siderophores, making iron available to the plant and removing hostile microorganisms from it. It promotes the solubilisation of Phosphorus not available in the soil and exerts a powerful active control action and barrier to the biotic adversities of the turf, counteracting the development of numerous fungal pathogens.

**ANALYSIS**

Nitrogen	Organic Nitrogen N
Carbon	10.0% C organic
pH	6
Organic substance	Organic substance with nominal molecular weight > 50 kDa

**DOSES**

Fertigation and air treatments  
2-3 Kg/Ha



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Area reference

