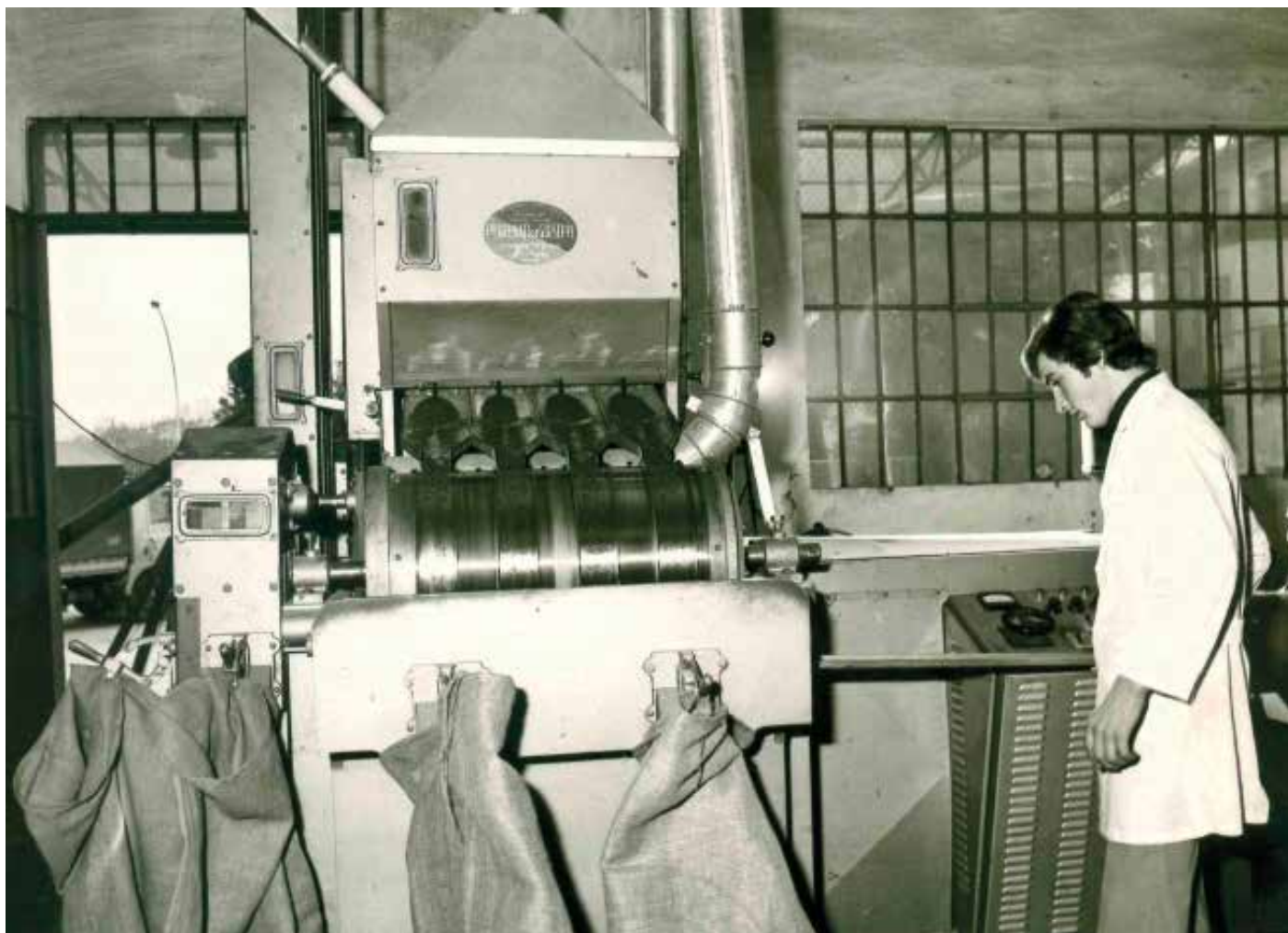




MAKING BETTER SEEDS



Our history...

It was the early twentieth century, when the Frigo family had the intuition that the population would need green fields and bucolic meadows. It was then that the first seed was planted. **More than a century has gone by since then, as well as four generations.**

Thanks to their constant commitment, **PADANA SEMENTI** has developed and expanded its product range over the years, promptly responding to new market needs and paying increasing attention to sustainable agricultural management.





“Making Better Seeds”

is our daily mission to bring us into the future, to improve ourselves and the world.



Experimentation...

Every year we carry out an important experimentation programme in our test fields created in collaboration with Agricola 2000, in order to select new varieties with better morpho-physiological characteristics, which for the agricultural sector translate into greater productivity, resistance to adversity, and high quality of the product, both for fodder and grain. In the turf sector, on the other hand, we have been collaborating since 2009 with the University of Padua, which allows us to test and select the best varieties to use for our blends.

Research...

We allocate constant investments to company experimentation and to collaborations with research organisations, in order to constantly improve and update our selection and our competences in every sector.

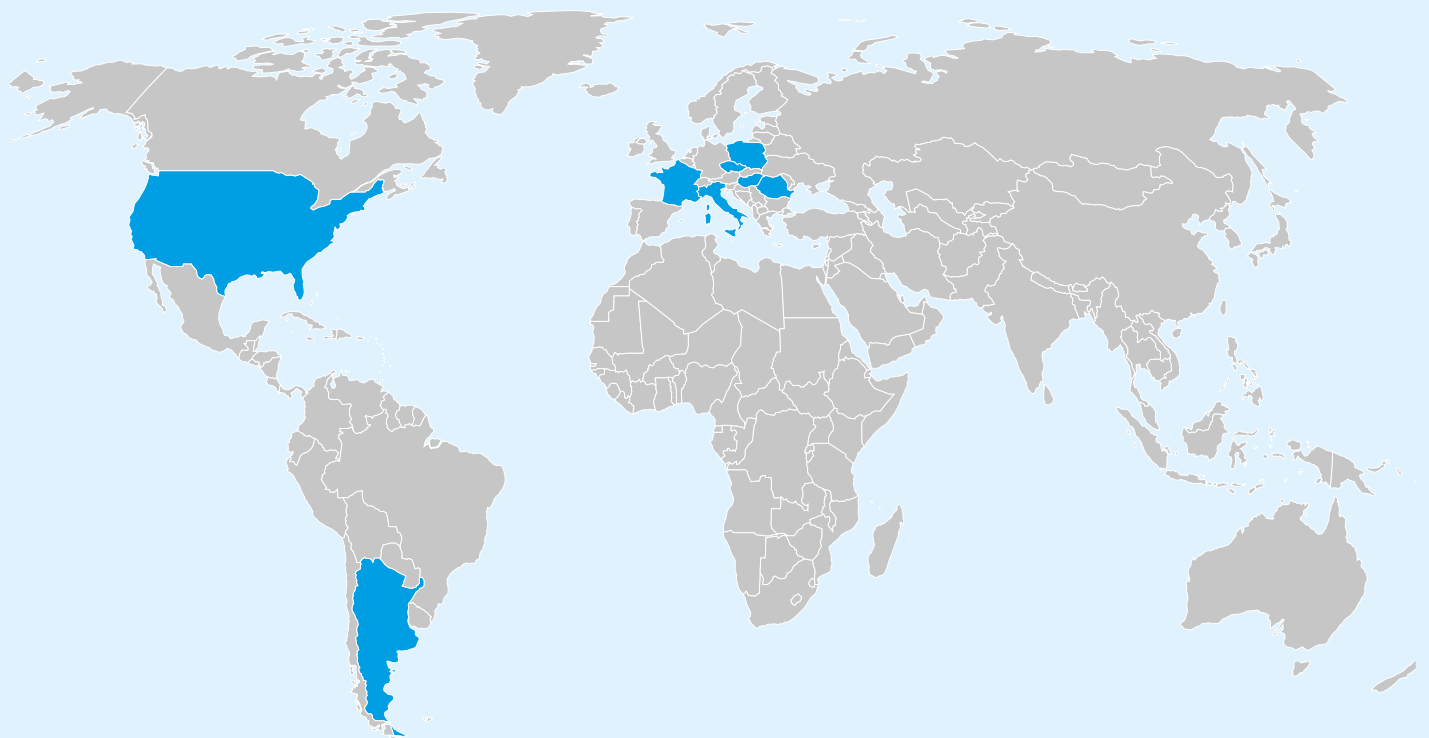
Quality control...

It takes place at two levels: in all production and business processes thanks to the ISO 9001 certified management system, and in every single batch of seed which enters our establishment, thanks to the internal laboratory accredited by the CREA-SCS certification body. This way, only products with the highest quality standards are supplied to the customer.



Customer service and assistance...

Customer satisfaction is a central part of our philosophy. Daily dialogue with distributors, training through seminars and days spent in the fields, and pre- and post-sale technical assistance are just some of the ways in which we ensure the most complete service.



Collaborations and seed production

Over the years, we have created a solid network of collaborations with Italian and international organisations and companies, allowing us to access the most recent and best genetic materials to be developed and tested in our experimental programs.

**More than 5000
hectares invested
in seed production,
which takes place
in 8 countries.**

5000



Seeds and solutions for organic farming

Organic farming is born with the objective of creating a highly sustainable development model for the protection of: environment and territory, biodiversity, consumer and animal welfare. The basis on which this method of production is based can be summarized in the following points:

- **Food safety and healthiness**, resulting from the non-use of synthetic chemicals.
- **Reducing the impact of agriculture on soil, air and water.** The biological method aims at minimizing the release of residues into the environment, loss of soil fertility, loss of biodiversity of the agroecosystem and energy consumption.
- **The total exclusion of GMO crops.**
- **Strict control and certification** of the whole production process by independent bodies to ensure maximum traceability to the consumer from the field to the point of sale.



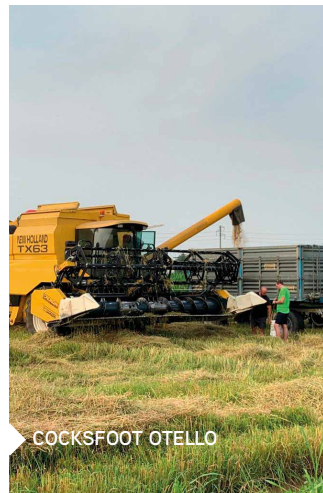
Seeds marked with the “Organic” brand currently available are:

- **Alfalfa:** CUORE VERDE, LA BELLA CAMPAGNOLA, FRIGOS
- **Berseem clover:** LEILA
- **Persian clover:** LOGUDORO
- **Crimson clover:** ALBEROBELLO
- **Cocksfoot:** OTELLO
- **Buckwheat:** ZITA
- **Common vetch:** PIETRANERA
- **Westervold Italian ryegrass:** ANDREA, EXCELLENT
- **Red clover:** SPADONE GIGANTE DI SANTA MARTA
- **Oat:** GNIADY
- **Triticale:** CLAUDIUS
- **Rye:** DUKATO
- **White mustard:** RUMBA
- **Horseradish:** ROMESA
- **Forage mixtures:** SPECIAL FIENO, SPONGEBOB, CEREAL SILO
- **Forage pea:** OLYMPOS
- **Squarring clover**



In addition to seeds, the company also proposes specific rizobes for various leguminous (useful for optimizing nitrogen fixation in the soil) and seeds already mixed with mycorrhizae for the benefit of greater plant rooting and healthiness.

“Biodiversity — the extraordinary variety of ecosystems, species and genes that surround us — is our life insurance, giving us food, fresh water and clean air, shelter and medicine, mitigating natural disasters, pests and diseases and contributes to regulating the climate. Biodiversity is also our natural capital, delivering ecosystem services that underpin our economy. Its deterioration and loss jeopardises the provision of these services: we lose species and habitats and the wealth and employment we derive from nature, and endanger our own wellbeing.” (European Commission, 2011).





ALOSCA RHIZOBIUM

ALOSCA® RHIZOBIUM: INNOVATIVE TECHNOLOGY TO GUARANTEE EXTRAORDINARY PERFORMANCE LEVELS

Padana Sementi continues to focus on innovation, proposing cutting edge technology for Italy exclusively for the bacterialization of leguminous forage crops.

WITH ALOSCA® RHIZOBIA THE FARMER PRODUCES NITROGEN DIRECTLY IN THE FIELD AT A LOW COST!

WHY BACTERIALIZATION IS IMPORTANT?

Root bacterial symbiosis is fundamental for all leguminous crops for:

- Fixing atmospheric nitrogen (and consequent soil enrichment)
- Increasing plant vigour
- Healthier plants and greater resistance to environmental stress

Symbiosis is a process that happens naturally in the soil, as long as there are enough specific bacteria present for the cultivated species. In unfavourable soils (acidic, alkaline, etc.) or where the affected species haven't been grown for a long time, these microorganisms tend to diminish until they disappear.

WHAT ALOSCA® IS AND WHAT ARE ADVANTAGES OF THIS TECHNOLOGY:

Alosca inoculants comprise a substrate of bentonite granules, sized between 1 and 3 mm, inside which there are selected strains of nitrogen-fixing bacteria. This particular coating guarantees excellent protection for the bacteria both in packages (which can be kept for two years at temperatures from 0 to 60°C) and in the soil where they remain dormant until favourable environmental conditions

allow the proliferation of the microorganisms in contact with the root apparatus and therefore quick and abundant nodulation.

- Increases nitrogen fixing up to 50% more for some species, allowing it to be made available for the next crop.
- Increases crop productivity in adverse situations (acidic soils).
- Increases the protein content of the forage
- The product maintains its potential constant for a long time (easy storage).
- Extremely simple application, which consists of mixing the granules directly with seeds or with fertilizer. Also applicable for sowing on firm ground.
- Can easily be transported and distributed even in non-optimal conditions (e.g. dry soil, high temperatures)
- Can also be mixed with seeds treated with fungicides or other pesticides, without its efficacy being compromised.

This technology has been fully validated by some important research centres:

- Murdoch University Centre for Rhizobium Studies
- Western Australia Department of Agriculture

EFFECT OF INOCULATION WITH RHIZOBIUM ALOSCA ON SOME LEGUMINOUS CROPS. (PADANA SEMENTI ELETTE DATA)

	Crimson clover VITERBO			Pink serradella EMENA		
	NT	RIZ	Increase (%)	NT	RIZ	Increase (%)
no. plants	40	40		40	40	
fresch plant weight (g)	90,3	141,6	56,8	174	341	96

	Pea AMICAL			Forage pea RHEA		
	NT	RIZ	Increase (%)	NT	RIZ	Increase (%)
no. plants	30	30		20	20	
fresch plant weight (g)	540	680	25,9	670	780	16,4
fresch seed weight (g)	190	258	35,8	200	230	15,0

Alosca rhizobia, specifically for annual and perennial clover (group C), Pink serradella and Lupin (group S), Pea, Faba bean and Vetch (group F), Annual medics (group AM), are already mixed in the following products:

FORAGE MIXTURES

Mixed in the whole "Miscugli del sole" range
Super Five
Genius del Sud

MIXTURES FOR PERMANENT GRASSLANDS

Gallura super
Autoriseminanti
Irriguo sardegna
Asciutto Padana
Irriguo Padana
Prato Nuovo

INDIVIDUAL SPECIES

Specific rhizobium to be mixed when sowing available for all the species indicated by the brand



NITRO GENIUS RHIZOBIUM



WHY IN GRANULES?

For the past 10 years, Padana Sementi has been experimenting and marketing rhizobium-based inoculants in granular format. This type of product has yielded excellent results in the field, in terms of effectiveness and ease of use:

- Very high bacterial load delivered to the roots from the very first stages of growth.
- Ease of use by mixing the product directly with the seed, without the need for laborious mixing procedures for the farmer.
- Easy long-term storage and preservation of the vitality and effectiveness of nitrogen-fixing bacteria.
- Seed quality is visible, not masked by any external coatings.

WHERE IT COMES FROM

In recent years, we have worked to improve some critical points of the granular formulations available up until now, which created problems in the application onto fodder species with small seeds (alfalfa and clover). The points on which we have focused most are:

- Granules that are homogeneous in size and similar to the seeds to avoid separation in the hopper.
- More resistant granules to minimise the formation of dust during processing and sowing.

CHARACTERISTICS

Associates a HIGH CONCENTRATION OF RHIZOBIUM specific for alfalfa with GROWTH-PROMOTING BACTERIA (Azotobacter, Azospirillum) and MYCORRHIZA (Glomus) which stimulate the development of the root system and increase the solubilization and absorption of macronutrients in the soil (in particular phosphorus) which the plant can use.

- EFFICIENT TRANSFER OF MICROORGANISMS to the root of the seedling in its germination phase and high nodulation as a consequence.
- HOMOGENEOUS and minimally dusty GRANULOMETRY, with size compatible with alfalfa seeds: this allows very homogeneous product mixing and, above all, regular sowing without the risk of deposits in the hopper.
- GRANULES RESISTANT to mechanical stresses, which are not split or pulverised during mixing, transport, and sowing.
- PROLONGED STORAGE: tests have shown a high vital bacterial load after more than one year of storage at room temperature.
- **ALLOWED IN ORGANIC FARMING**

ALFALFA

Rizobio Nitro Genius, mixable with all the varieties in the catalogue.

SULLA

Rizobio Nitro Genius Sulla, mixable with all the varieties in the catalogue.





ALFALFA

MEDICAGO SATIVA

FEATURES

It is the quintessential perennial forage species and undoubtedly the most common and well-known in Italy. Alfalfa adapts to all pedoclimatic conditions, but is most productive in deep, clay or medium textured alkaline soils (optimal pH 6.5 - 8). It is not adapted to waterlogging or acidic soils. The different varieties of alfalfa vary due to their dormancy.

DORMANCY

Dormancy is the period of arrested plant growth in the winter, which may last for different amounts of time according to the variety. The National Alfalfa Alliance (USA) has established a scale of dormancy classes ranging from class 1 (dormant varieties) to class 11 (non-dormant varieties). According to the dormancy, the varieties are suitable for different climatic conditions - the most dormant for harsh winter environments and the less dormant for mild winter environments. In Italy the varieties used are comprised between dormancy classes 5 and 8.

USE

The best compromise between yield and quality and the guarantee of the longest lifetime for the grassland is provided by cutting it when it starts to flower. However, often for a more intensive and higher quality use, cutting is performed earlier in the bud stage. Also in this case varieties that regrow quickly and are resistant to frequent cutting must be chosen.

STRENGTHS OF THE SPECIES

- Formations of monophyte grasslands that can be managed intensively and with high levels of mechanisation
- It combines high yield and production that is well distributed over the vegetative season, with the high quality of forage produced
- Hardy and adaptable species, relatively undemanding in terms of agronomic input
- Excellent effect of soil fertility in mid-long term rotations. Crop diversification is included in the new CAP and in ecological focus areas (EFAs).

BANAT VS



DORMANCY

Class 5 (semi-dormant)

CYCLE

Early

FEATURES

- Tall and leafy plant (50% of leaves by weight at the beginning of flowering)
- Banat VS was selected in Serbia for: high resistance to drought and low temperatures, rapid regrowth and productivity.
- Good tolerance to Verticillium
- Suitable for intensive use, it produces high quality forage
- Ideal for hay frequent cuts and for ensiling.
- Indicated for cold environments and mountain areas.

SOWING RATE

30 kg/ha pure.

40 kg/ha (4 doses) if mixed with rhizobium Nitro Genius®

FRIGOS



DORMANCY

Class 6 (semi-dormant)

CYCLE

Medium

FEATURES

- Medium-tall plant with thin stalks and a good leaf-stem ratio
- Suitable for early cutting (intensive use).
- Excellent compromise between hardiness and quality: good yield in fertile plain soils and in drier hilly areas or where the winters are colder
- Good fibre digestibility and protein content

SOWING RATE

30 kg/ha pure.

40 kg/ha (4 doses) if mixed with rhizobium Nitro Genius®

DORINE



DORMANCY

Classe 6.8 (semi-dormant)

CYCLE

Medium

FEATURES

- French genetic synthesis variety.
- Average sized very leafy plant.
- Excellent resistance to lodging, it is suitable for intensive use.
- Well distributed production across all cuts.

SOWING RATE

30 kg/ha pure.

40 kg/ha (4 doses) if mixed with rhizobium Nitro Genius®.

PICENA GR



DORMANCY

Class 6.5 (semi-dormant)

CYCLE

Medium

FEATURES

- Semi-erect plant with high leaf - stem ratio
- Suitable for hay, green forage and dehydrating
- Also suitable for mid-high hilly areas as it has excellent resistance to winter frost
- Very persistent, it can quickly regrow after cutting.
- High dry matter yield and protein/ha (see table A and B)

SOWING RATE

30 kg/ha pure.

40 kg/ha (4 doses) if mixed with rhizobium Nitro Genius®.

CUORE VERDE



DORMANCY

Class 6.5

CYCLE

Medium

FEATURES

- Very healthy plant, resistant to the main diseases
- Chosen in the hilly areas of Central Italy, it therefore withstands high summer temperatures and low winter ones.
- It was particularly selected for organic farming methods, where in the official tests it was the most productive variety in the most suited locations (see table B). • Suitable for intensive use, it produces high quality forage

SOWING RATE

30 kg/ha pure.

40 kg/ha (4 doses) if mixed with rhizobium Nitro Genius®

SEQUEL HR



DORMANCY

Class 9 (nondormant)

CYCLE

Early

FEATURES

- Australian variety with marked winter growth activity, optimal for get maximum yields in Mediterranean climates with mild winters.
- Erect plant that facilitates the cutting and drying of the forage.
- Good health: resistant to Colletotrichum trifolii and Phytophthora.

SOWING RATE

30 kg/ha pure.

40 kg/ha (4 doses) if mixed with rhizobium Nitro Genius®

VERDOR



DORMANCY

Class 8 (nondormant)

CYCLE

Early

FEATURES

- Particularly suitable variety for areas with Mediterranean climates (southern Italy and islands), where it can grow all year round, if supported by irrigation in the summer.
- Healthy and resistant to diseases.

SOWING RATE

30 kg/ha pure.

40 kg/ha (4 doses) if mixed with rhizobium Nitro Genius®

TAB. A:
Crude protein production (kg ha⁻¹) - Year 2010 Variety Innovation crops. (Padana Sementi Elette data)

VARIETY	TOTAL 2010
AUBIGNY	1688,415 B
AZZURRA	2062,465 A
CASALINA	1940,340 A
CRENO	1564,013 B
FRIGOS	1907,851 A
GARISENDA	1943,006 A
LETIZIA	1958,866 A
MINERVA	1755,284 A
MIRANDA	1432,462 C
PICENA GR	2130,084 A
POMPOSA	1928,516 A
PR57Q53	1931,286 A
PROSEMENTI	1857,535 A
VERBENA	1342,473 C
FIELD AVERAGE	1817,328
SIGNIFICATIVITÀ	***
C.V.	7,84

TAB. B:
Production of dry matter (t/ha) in two locations in central Italy in organic farming conditions (Data taken from I.A. 1/2013)

CULTIVAR	PERUGIA DRY MATTER 3 YEAR PERIOD	GROSSETO DRY MATTER 3 YEAR PERIOD
AZZURRA	14,97	38,86
BEATRIX	16,08	38,24
COSTANZA	12,41	31,35
CUORE VERDE	16,75	40,62
EMILIANA	14,70	37,03
LA TORRE	14,09	35,26
PALLADIANA	14,08	31,31
PICENA GR	16,47	34,57
PR57Q53	15,48	35,58
PROSEMENTI	14,79	37,36
SELENE	15,64	38,64
MIRANDA	13,12	29,91
SURIGHEDDU	16,85	35,55
MSI004	16,16	35,61
MSI006	13,48	30,67
MSI007	13,12	27,45
AVERAGE	14,89	34,88
LSD P <0,05	1,57	3,84



RED CLOVER

TRIFOLIUM PRATENSE



FEATURES

- Leguminous perennial crop with a 3 year duration (the best yield is in the second year).
- Suitable in fertile and cool soils, but also adaptable to shallow acidic and sub-acidic soil. The best pH for the soil is between 6 and 7.5.
- It is used for producing hay, pasture, or silage, usually in intercropping with other leguminous or graminaceous crops for improving the quality and production of the grassland.

Optimal forage quality levels:

Crude protein (% dry matter): 20-23%

MFU: 0.90-0.96

SPADONE GIGANTE DI S. MARTA



TYPE

Diploid

CYCLE

Medium -early

FEATURES

- Use: pure or in intercropping in pasture lands for hay production.
- Plant with remarkable vegetative development, very leafy.
- Very adaptable variety to Italian climates, it offers the best yield in cool plain environments.

SOWING RATE

25-35 kg/ha.

KRYNIA/ROZETA

TYPE

Diploid

CYCLE

Medium -early

SOWING RATE

25-35 kg/ha.



SULLA

HEDYSARUM CORONARIUM

FEATURES

Leguminous perennial suitable for Mediterranean climates for the formation of short-lived monophytic lawns (2 years). Very productive in the area, especially in the second year. It is particularly suitable for deep, clayey and calcareous soils. This species performs a great improvement of the soil, even in depth, and is well suited to rotations with grain and graminaceous herbs.

BELLANTE



FEATURES

- Medium-sized, semi-sized portable plant.
- Extremely thin casings and wires, produces an appetizing, full-bodied fodder.
- Use: grazing, fen, fenced. It is advisable to use it no later than the beginning of flowering to avoid a rapid increase in the spine.
- Sowing time: spring or, in mild areas, in summer.

SOWING RATE

30-40 kg/ha of shelled seed

A SPECIFIC RHIZOBIUM FOR SULLA IS AVAILABLE





WHITE CLOVER

TRIFOLIUM REPENS



FEATURES

- Perennial species that comprises different plant forms, similar in terms of pedoclimatic requirements but with different sizes and uses.
- It generally prefers cool soils with good water availability (due to the superficial nature of its root apparatus). It withstands winter cold very well, but does not withstand high temperatures and drought very well.
- It is also adapted to both acidic and alkaline soils, with soil pH between 5 and 8.
- Its creeping behaviour protects the grassland from more intensive uses and against trampling and allows excellent quality forage to be obtained as it is mainly comprised of leaves (0.96 – 1.00 MFU).

WHITE DUTCH CLOVER

TRIFOLIUM REPENS VAR. HOLLANDICUM

- It is distinguished by its average size, its resistance to cold and trampling, and by its long-term persistence.
- Excellent for pasture lands also in mountainous and hilly areas

HUIA

FEATURES

- Medium cycle variety, with Medium sized leaves.
- Vigorous growth forming dense cushions, with excellent competition against weeds.
- Very persistent, it is suitable for long-term grasslands and technical grassing.

DOSE DI SEMINA

8-10 kg/ha.

Other varieties available: HAIFA

LADINO WHITE CLOVER

TRIFOLIUM REPENS VAR. GIGANTEUM

- It is distinguished by its average size, its resistance to cold and trampling, and by its long-term persistence.
- Excellent for pasture lands also in mountainous and hilly areas - A plant that stands out due to being very tall (can reach 60 cm). - This type of clover is used pure in the well-irrigated areas of north Italy, for creating grasslands that can provide up to 8 cuts a year.

FANTASTICO

FEATURES

- Italian genetics, derived from improvement of populations of the ecotype "Gigante Lodigiano".
- Leafy and high-size plant (40-45 cm). Medium-late maturity.

SOWING RATE

8-10 kg/ha.

COMPANION

FEATURES

- Tall variety
- Compared to other types of Ladino clover it stands out due to its increased resistance to drought.
- Also suitable for light and well-drained soils

SOWING RATE

8-10 kg/ha.



COCKSFOOT

DACTYLIS GLOMERATA

FEATURES

- Of the graminaceous forage crops, this species is the one that can best combine adaptability and tolerance to stress with the quality of the forage and productivity.
- It has a long-term persistence (7-8 years), hence being suitable as a component of long duration grasslands.
- It is recommended to sow it pure in autumn, by mid-September, to allow establishment before the winter. The plant is slow to become established after sowing.

DOSE DI SEMINA

25-30 kg/ha.

AMBA

CYCLE

Early

OTELLO

CYCLE

Medium

LOKE

CYCLE

Medium



TALL FESCUE

FESTUCA ARUNDINACEA

FEATURES

- Perennial species with vigorous growth, it has a deep root apparatus and large leaves that tend to be fibrous, giving it long persistence, marked hardiness and remarkable resistance to summer drought (the most resistant of the microthermal graminaceous forage crops).
- Cutting must not be performed at the start of heading so as not to compromise the quality and palatability of the forage.
- Autumn sowing is recommended for the pure seeds (between end of August and end of September). Spring sowing can be performed when intercropping with leguminous crops and must be performed by the end of March.

DOSE DI SEMINA

30-35 kg/ha.

PALMA

CYCLE

Early

KORA

CYCLE

Medium



MEADOW FESCUE

FESTUCA PRATENSIS

FEATURES

- A plant with average persistence, very resistant to cold, but sensitive to summer drought and high temperatures.
- It produces excellent quality forage that is more digestible than tall fescue.
- Used for mixed pasture lands in cool hilly or mountainous areas.

DOSE DI SEMINA

20-25 kg/ha

COSMOLIT

CYCLE

Early



PERENNIAL RYEGRASS

LOLIUM PERENNE

FEATURES

- Gramineous forage crop suitable for cool and fertile soils.
- Average persistence, quick establishment and regrowth. Ideal plant for pasture.
- Excellent forage quality
- Like Italian ryegrass it is split into diploid and tetraploid varieties.

DOSE DI SEMINA

35-45 kg/ha

GRASSLANDS NUI

CYCLE

Early

MATHILDE

CYCLE

Medium

PASTORAL

CYCLE

Late



HYBRID RYEGRASS

LOLIUM X HYBRIDUM

FEATURES

- Interspecific hybrid (L.perenne x L.multiflorum) that combines the density and persistence of perennial ryegrass with the productivity of Italian ryegrass.
- It can form grasslands with a 3-4 year duration or even longer in optimal conditions.

DOSE DI SEMINA

35-40 kg/ha

GALA

CYCLE

Medium



FESTULOLIUM

X FESTULOLIUM

FEATURES

- Intergeneric hybrid between Ryegrass and Fescue that is essentially used in intercropping in mixed pastures.
- It produces more than perennial ryegrass with similar quality forage.
- Good persistence and tolerance to stress.

DOSE DI SEMINA

35-40 kg/ha

LOFA

CYCLE

Medium

LENOR

CYCLE

Medium



TIMOTHY GRASS

PHLEUM PRATENSE

FEATURES

- Productive species with long-term persistence, typical of the cool and well-irrigated environments of the plain and hilly and mountainous areas.
- Not very tolerant to high temperatures and drought.
- Excellent quality forage.
- Autumn sowing recommended in the plain, spring in cold mountain environments.

DOSE DI SEMINA

10-15 kg/ha pure.

ALMA/ANJO

CYCLE

Medium



PEARL MILLET

PENNISETUM GLAUCUM

FEATURES

- Summer cycle species that originates from the hot-dry areas of the subtropical belt.
- Very adaptable to different soils, and very resistant to drought, it is most productive in deep soils.
- If harvested at the right time, it can provide remarkable amounts of very high quality forage in terms of protein content and palatability.
- Especially recommended for sheep, cow and horse grazing.
- Never contains toxic substances for the livestock or antinutritional factors.

DAILY DOUBLE

TYPE

Pearl millet hybrid

CYCLE

Early (heading starts 60 days after emergence)

FEATURES

- Use: pasture, hay, green forage. Provides excellent pasture before the plant starts heading.
- The plant is very vigorous with fast growth and great tillering ability.

SOWING RATE

20-30 kg/ha to obtain thinner plants suitable for hay.
Sowing depth: no more than 2-3 cm.
Sowing period: when soil temperature reaches at least 16°C.

PAMPA MIJO BMR

TYPE

Hybrid BMR pearl millet

CYCLE

Medium-late

FEATURES

- Use: hay, green forage. The first BMR pearl millet on the Italian market: top quality for summer pasture. Superior fibre digestibility thanks to its reduced lignin content.

SOWING RATE

15-20 kg/ha.
Sowing depth: not more than 2-3 cm.

PLATINO BMR

TYPE

Hybrid BMR pearl millet

CYCLE

Medium-late

FEATURES

- Use: silage, pasture, green forage.
- Medium to high plant, with very large leaves, good yield potential.
- Excellent resistance to drought stress.
- High digestibility and high protein content
- It is recommended to harvest within the boot stage to avoid the loss of protein content.

SOWING RATE

10-12 kg/ha for silage, 15-20 kg/ha for grazing.
Sowing depth: not more than 2-3 cm.



FOXTAIL MILLET

SETARIA ITALICA

FEATURES

- Summer graminaceous crop with fast cycle - Usually used in second harvest for a single abundant hay cut
- Withstands summer temperatures well, but needs regular watering to improve the yield.

PANORAMA GIGANTE

CYCLE

Very early (50- 60 days)

FEATURES

- Tall and thin plant (quick drying)

SOWING RATE

45-50 kg/ha

MOHA

CYCLE

Very early (50- 60 days)

FEATURES

- Tall and thin plant (quick drying)

SOWING RATE

45-50 kg/ha



SORGHUM

SORGHUM BICOLOR

FEATURES

Although sorghum is a single botanic species, *Sorghum vulgare* (sin. *Sorghum bicolor*), it is marked by very great genetic variability, which has pushed botanists to split it into different sub-species. These sub-species, which can be crossbred, correspond to different morphologies and therefore different uses.

- *S. bicolor* ssp. *bicolor*. This group includes varieties for grain, generally short with strong shoots, welldeveloped panicles and that do not often lodge.
- *S. bicolor* ssp. *sudanense*. This groups together the varieties known as "Sudan grass". They have a thin, elastic stalk, a marked tendency towards tillering, fast regrowth and an early cycle. They are particularly suitable as multi-harvest summer forage crops and for hay production.
- *S. bicolor* ssp. *saccharatum*. Sweet sorghums stand out as they are tall, have large leaves, a large shoot and juicy, sugary pith, poor tillering and regrowing ability and a cycle that tends to be late.
- *S. bicolor* ssp. *technicum*. This sub-species, which is known as "broom corn" has long drooping branches, a high fibre content and therefore is not very suitable for use as forage. These plants are traditionally used for making brushes
- Crosses and hybrids of the previous types have allowed plants to be obtained with very varied features, both from

a morphological and agronomic point of view, based on the features of the types used as parental plants.

AGRONOMIC ADVANTAGES

- Reduced water requirements and greater water use efficiency due to the set of physiological and drought resistance mechanisms.
- Lower or no need for plant protection products
- Reduced need for fertilisers
- Great environmental adaptability: suitable for all soils, pH from 5.5 to 8.5, good salt tolerance.
- Good quality forage, in all conditions
- High plant health: sorghum can be grown in areas affected by Pyralid borers and *Diabrotica* and does not present any risk of mycotoxins



GRAIN SORGHUM

SORGHUM BICOLOR X BICOLOR

- **DSM F.G.**
- **MONCAYO**
- **TONKAWA**

DSM F.G.



CYCLE

Medium-late (about 60 days from emergence to flowering)

CHARACTERISTICS

- Food-grade grain hybrid, specially selected for human consumption.
- High quality white grain, excellent for whole seed consumption, perfect for milling.
- Compact plant with semi-loose panicle and high panicle exertion.
- Grain is easily removed from ear and glume, simplifying the threshing process.
- Excellent foliar health: anthracnose-tolerant.
- Excellent resistance to stress with high production potential in dry conditions.

SOWING RATE

35-36 seeds / m² equal to about 11 kg / ha
TGW: 30 g

MONCAYO



CYCLE

Medium (about 55 days from emergence to flowering),
FAO 400 class

CHARACTERISTICS

- Stable plant with highly developed semi-compact panicle.
- White seed grains of homogeneous size, protein 10-11%, starch 68-70%.
- Homogeneous ripening of the ears
- Plant height: 110-115 cm.
- Great adaptability and resistance to environmental stress.
- Good production potential: suitable throughout Italy even in less suitable soils.

SOWING RATE

35-36 seeds / m² equal to about 11 kg / ha
TGW: 30 g

TONKAWA



TYPE

S. Bicolor hybrid

CYCLE

Medium-late (about 60 days from emergence to flowering)

CHARACTERISTICS

- Compact plant with semi-loose panicle.
- Red grain with low tannin content.
- Plant height: 120-125 cm.
- Excellent separation of the ears during threshing.
- Excellent resistance to environmental stress.
- Produces maximum yields in the plains of Central-Northern Italy.

SOWING RATE

33-35 seeds / m² equal to about 11 kg / ha
TGW: 32 g



MULTI-HARVEST SUDAN GRASS

- **MONARCH V**
- **HERMES**

MONARCH V



TYPE

Sudanense x sudanense hybrid

CYCLE

Medium - early (60-62 days from emergence to flowering)

FEATURES

- Use: multi-harvest forage for producing hay, banded hay, silage and pasture. Two or three cuts can be obtained per season.
- Plant: height 2.5 m, leafy and with very thin, elastic stalks, productive in all environments (13% more than Piper). Resistant to lodging.
- Management: low antinutritional factor content. It is recommended to use it after it reaches 50 cm for the best yield and quality ratio. For producing hay the higher investment is recommended and early harvesting at 1.5 m before the boot stage.

SOWING RATE

20-30 kg/ha, narrow spacing between rows.
TGW: 13 g

HERMES



TYPE

Sudanense x sudanense hybrid

CYCLE

Medium - early (62-65 days from emergence to flowering)

FEATURES

- Use: multi-harvest forage for producing hay, banded hay, silage and pasture. Two or three cuts can be obtained per season. - HI-Gest® hybrid: expresses both the quality advantages of BMR hybrids and the yields (comparable or better) of traditional Sudan grasses.
- Plant: 2.5 m tall, thin stalks that facilitate drying, but not susceptible to lodging. Extraordinarily palatable forage.
- Management: even if it has a low antinutritional factor content, it is recommended to use it after it reaches 50 cm for the best yield and quality ratio. For producing hay the higher investment is recommended and early harvesting at 1.5 m before the boot stage.

SOWING RATE

20-30 kg/ha, narrow spacing between rows.
TGW: 14 g



MULTI-HARVEST EARLY SORGHUM X SUDAN

- **HAY DAY**
- **SUGAR GRAZE II**
- **PAMPA TRIUNFO
XLT BMR**
- **MATACO**

HAY DAY



TYPE

Bicolor x sudan hybrid

CYCLE

Medium - early (62-65 days from emergence to flowering)

FEATURES

- Use: multi-harvest forage for producing chopped forage, banded hay, silage and pasture. Three cuts per season obtainable.
- Reliable and rustic hybrid with great tillering ability and very quick to regrow.
- Tall plant (2.5-2.6 m), very elastic, with guaranteed quality: excellent protein content.
- Management: not to be used before it reaches 90-100 cm in height. Maximum quality is obtained by harvesting during the boot stage. The maximum dry matter yield is obtained when the grain is ripe.

SOWING RATE

40-50 kg/ha
TGW: 33 g

SUGAR GRAZE II



TYPE

Bicolor x sudan x sweet sorghum hybrid

CYCLE

Medium - early (62-68 days from emergence to flowering)

FEATURES

- Very leafy, three-way hybrid with great tillering ability and very quick regrowth.
- Tall (2.6-2.8 m) and productive plant: in the official tests it proves to be the most productive of the multi-harvest sorghum varieties. In just a few years it has gained the trust of the best growers.
- Use: multi-harvest forage for producing chopped forage, banded hay, silage and pasture. In favourable conditions, up to three cuts can be obtained.
- Also suitable for producing biomass when an early cycle with high yield is required (late sowing, double harvest)
- Management: not to be used before it reaches 90-100 cm in height. The best quality is obtained during the boot stage (protein 9-10%). The maximum dry matter yield is obtained when the grain is ripe.

SOWING RATE

35-45 kg/ha
TGW: 24 g

PAMPA TRIUNFO XLT BMR



TYPE

Bicolor x sudanese hybrid.

CYCLE

Medium (70-73 days from emergence to flowering).

FEATURES

- The highest quality for a multi-harvest sorghum for producing chopped forage: the BMR character gives high fibre digestibility and high sugar content. The plant is 2.5 m high and with leaves, with great tillering ability. The shoots have a mean diameter. Good resistance to lodging.
- Use: production of chopped forage, banded hay, even with multiple cuts. It's suitable to produce silage with late sowing.
- Management: not to be used before 90-100 cm in height. The maximum quality is obtained during the boot stage (protein over 10%).

SOWING RATE

10-15 kg/ha (the lowest dose is recommended for production of chopped forage).

TGW: 31 g



SINGLE HARVEST LATE SORGHUM

- **BIG DRAGON BMR**
- **SWEET BETTY**

MATACO



TYPE

Bicolor x sudan hybrid

CYCLE

Medium early (65 days from emergence to flowering)

FEATURES

- Rapid growth, multi-cut hybrid Very stable plant with stem rich in soluble sugars. Good Leafiness.
- Use: production of chopped forage, haylage. Up to three cuts can be obtained per season. It's suitable to produce silage with late sowing.
- Use: multi-harvest forage for producing chopped forage, banded hay, silage and pasture. In favourable conditions, up to three cuts can be obtained.
- Management: not to be used before 90-100 cm in height.

SOWING RATE

30-35 kg/ha (the highest dose is recommended for production of haylage).

TGW: 21 g

BIG DRAGOON BMR



TYPE

Bicolor x sudanese hybrid.

CYCLE

Very late, photoperiod sensitive hybrid, in the North it often does not come to full flowering.

FEATURES

- Use: single harvest silage, biomass.
- Large wide leaves and the good tillering ability.
- Great quality of the fibre: BMR 6 hybrid always produces a forage very appetizing and digestible.
- In the trials it showed a better resistance to lodging than other BMR forage hybrids.
- Guaranteed productive potential: exploiting the whole growing season with early sowing, it can exceed 4 m in height.
- Suitable for producing large quantities of forage as a base for the feed ration.
- Management: optimal harvesting in September or at the beginning of heading.

SOWING RATE

20-22 seeds/m² (with precision sowing), equal to about 6-7 kg/ha.
TGW: 27 g

SWEET BETTY



TYPE

Sugary x sugary hybrid.

CYCLE

Late, (90 days from emergence to flowering)

FEATURES

- Vigorous plant that easily reaches 3 m, leafy and with thick stem.
- High content in soluble sugars (reaching over 20%).
- Lower lignin content average.
- Excellent digestibility of the organic substance.

SOWING RATE

20-24 seeds / m² (with precision sowing), equal to about 5-6 kg / ha
TGW: 17 g



SINGLE HARVEST SILAGE SORGHUM

- **BIG TEXAN BMR**
- **PAMPA CENTURION BMR**
- **LITTLE GIANT BMR**
- **SWEET CAROLINE**

BIG TEXAN BMR

TYPE

Bicolor x sudanese hybrid.



CYCLE

Medium, (70 days from emergence to flowering).

FEATURES

- Use: chopped for direct harvesting.
- Very leafy and compact plant, with short internodes (brachytic dwarf), medium panicle, height 170-180 cm.
- Excellent digestibility and energy content, thanks to the BMR fibre.
- High resistance to lodging
- Suitable for short harvest windows, especially with late sowing (by July).
- Medium panicle, height 170-180 cm.
- Management: optimal harvest from earing to milk-waxy maturation (about 90 days from emergence).

SOWING RATE

12.5 kg / ha, equal to about 40 seeds / m²
TGW: 31 g.

LITTLE GIANT BMR

TYPE

Bicolor x bicolor hybrid.



CYCLE

Medium - late (85 days from emergence to flowering).

FEATURES

- Use: silage production with direct cut harvest.
- Suitable instead of corn in 2nd harvest or in difficult areas (dry areas or with pyralid borers or Diabrotica).
- Brachytic dwarf plant (short internodes and large leaves), plant height (1.8 - 2 m), does not lodge.
- BMR fibre (low lignin content).
- Well developed white panicle without tannin.
- High energy content.
- Management: optimal harvest when milky-dough stage.

SOWING RATE

32-35 seeds/m² (with precision sowing), equal to about 10-13 kg/ha.
TGW: 30 g.

PAMPA CENTURION BMR

TYPE

Bicolor x bicolor hybrid.



CYCLE

Medium, (78 days from emergence to flowering).

FEATURES

- Use: single harvest chopped silage.
- Suitable for late sowing, it's the best solution in difficult areas instead of corn (dry areas or with pyralid borers or Diabrotica, etc.).
- The latest generation hybrid that combines the highest quality with excellent results: - brachytic dwarf plant (short internodes and large leaves), good height (2-2.5 m).
- BMR6 fiber (low lignin content).
- Thick stalks and lodging resistant
- Well-developed panicle that produces large amounts of grain.
- Management: optimal harvest when milky-dough stage (105 days after emergence).

SOWING RATE

22-24 seeds/m² (with precision sowing), equal to about 7-8 kg/ha.
TGW: 36 g

SWEET CAROLINE

TYPE

Bicolor x bicolor hybrid



CYCLE

Medium -late (82 days from emergence to flowering)

FEATURES

- Use: silage production with direct cut harvest.
- Suitable in difficult areas or to replace corn (dry areas or with pyralid borers or Diabrotica, etc.).
- Size: 1.8 - 2.5 m, with thick stalks and wide leaves for excellent row coverage.
- Well-developed panicle that produces good quantities of red grain.
- Good green matter and grain ratio for digestible silage, with excellent protein content.
- Management: optimal harvest when milky-dough stage, in which there is no tannin.

SOWING RATE

32-35 seeds/m² (with precision sowing), equal to about 10-13 kg/ha.
TGW: 30 g

SUMMER FORAGE



ASOLO TRIS



TYPE

Balanced mixture of three forage sorghum hybrids.

CYCLE

Harvest about 110 days after emergence (milky-dough stage of the silage sorghum hybrid).

FEATURES

- Use: single harvest silage both for forage and biogas
- Balanced mixture of three forage sorghum hybrids:
 - Silage sorghum: strong plant that has a support function. Gives the chopped forage starch and protein.
 - Sweet sorghum: guarantees productivity and high sugar content.
 - BMR forage sorghum: contributes to lowering the lignin content and in - creasing fibre digestibility.
- Compared to sowing a single variety, this mixture guarantees:
 - high productivity
 - excellent compromise between yield and quality
 - simplified management (low risk of lodging)

SOWING RATE

20-24 seeds/m² (with precision sowing), equal to about 7-8 kg/ha.
Recommended spacing between rows: 50 to 75 cm
TGW: 31 g



ASOLO BIS



TYPE

Balanced mixture of three forage sorghum hybrids.

CYCLE

Harvest about 110 days after emergence (milky-dough stage of the silage sorghum hybrid).

FEATURES

- Use: single harvest silage both for forage and biogas
- Balanced mixture of three forage sorghum hybrids:
 - Silage sorghum: strong plant that has a support function. Gives the chopped forage starch and protein.
 - Sweet sorghum: guarantees productivity and high sugar content.
 - BMR forage sorghum: contributes to lowering the lignin content and in - creasing fibre digestibility.
- Compared to sowing a single variety, this mixture guarantees:
 - high productivity
 - excellent compromise between yield and quality
 - simplified management (low risk of lodging)

SOWING RATE

32-35 seeds/m² (with precision sowing), equal to about 10-13 kg/ha.
TGW: 30 g



SUMMERFOR

TYPE

Intercropping of hybrid pearl millet and cowpea.

CYCLE

Early. It can first be used just 50-60 days after sowing (forage height less than 100 cm)

FEATURES

- Use: Pasture, green forage (in 2 or 3 cuts), banded hay. Important to harvest or graze before it reaches 1 m in height for the best quality.
- High quality: in optimal conditions it is possible to have up to 17% protein in the green forage.
- Total absence of cyanogen compounds.
- Management: When sowing, the seeding machine must be carefully calibrated.
- It is recommended to sow on soil that is as free as possible from weeds.

SOWING RATE

25-30 kg/ha, with soil temperature always greater than or equal to 16°C. Avoid sowing too early.



ITALIAN RYEGRASS

LOLIUM MULTIFLORUM

FEATURES

Italian ryegrass is one of the most common and important types of forage in advanced zootechnics. It is a marked microthermal species with reduced temperature requirements for germination and vegetation, used for monophyte pastures and as a component in mixed pastures. Although it is very adaptable to different environmental conditions and soils, it gives the best of its potential in cool environments, with deep soils rich in nutritional elements. In these conditions it shows very rapid and vigorous growth, with a high ability to compete and control weeds. It does not withstand high temperatures or drought.

THERE ARE TWO SUB-SPECIES WITHIN THE SPECIES

Lolium multiflorum ssp. *Italicum*: usually has low alternativity (low ability to produce head in the sowing year), very resistant to winter frost, can form two- or three-year pastures.

Lolium multiflorum ssp. *westewoldicum*: annual plant, with high alternativity and fast establishment speed. Due to these features, in regions with mild winters it can be grazed with optimal yields all winter, during which it maintains constant vegetative activity.

SPECIES SELECTION ACTIVITY HAS ENABLED US TO GENERATE VARIETIES WITH DIFFERENT NUMBERS OF CHROMOSOMES

Diploid varieties:

normal chromosome set. They have an early cycle, smaller seeds, thinner stalks and leaves and lower water content in the forage. They are particularly suitable for hay production.

Tetraploid varieties:

double the number of chromosomes as diploids. They have high production potential, larger seeds, are taller, have larger leaves and higher water content in the forage. They are very suitable for ensilage.

STRENGTHS OF THE SPECIES

Simple agronomic management associated with high production potential and high nutritional value of the forage (high fibre digestibility, high sugar content, high metabolizable energy).

- Highly flexible to use during the production cycle: pasture, hay, silage, green forage.
- Excellent ability to exploit nitrogen-based fertilizers and reduction in the risk of nutrient leaching and polluting groundwater ("catch crop").

THE PADANA SEMENTI RANGE

The range of varieties offered by Padana Sementi is the result of many years' research and experience in the field. The in-depth knowledge of the vegetative behaviour of every single variety allows targeted solutions to be offered for all requirements, geographical areas and for every zootechnical use.

JAKO

TYPE

Diploid, Italian.

CYCLE

Early, heading 8 days before Excellent.

FEATURES

- Only autumn sowing period.
- Use: Hay, with very high yields in the first spring cut.
- In favourable conditions it provides various cuts.
- Tall and erect plant with longer leaves than the test varieties.
- Quick drying to produce high quality hay.

SOWING RATE

35-40 kg/ha.

ANDREA



TYPE

Diploid, Westervold (alternative).

CYCLE

Medium -early, heading 4 days before Excellent.

FEATURES

- Autumn and spring sowing period.
- Use: Mainly hay in various cuts, but also silage and pasture.
- This variety with Dutch genetics is now well known in the fertile areas of central-northern Italy as a production guarantee, thanks to its abundant leaves and tall height.
- Tall and erect plant with longer leaves than the test varieties.
- Excellent ability to regrow.

SOWING RATE

35-40 kg/ha.

MC LAREN PSE

TYPE

Tetraploid, Westervold (alternative).

CYCLE

Medium, heading 5 days before Excellent.

FEATURES

- Autumn and spring sowing period.
- Use: silage, haylage, winter pasture - Very leafy and tall plant: excellent leaf-stem ratio.
- After winter grazing, it produces a very yielding cut, and is particularly recommended for Mediterranean or warmer areas with mild winter.
- Good fiber digestibility.

SOWING RATE

45-50 kg/ha.

MAGNUM

TYPE

Tetraploid, Westervold (alternative).

CYCLE

Medium - early, heading 4 days before Excellent.

FEATURES

- Autumn and spring sowing period.
- Use: silage, hay (in drier areas), winter pasture.
- Very leafy plant with a good size.
- Multi-purpose variety particularly suitable in central-southern Italy where the autumn-winter pasture offers an abundant cut. It has excellent quality parameters such as the sugar content and palatability.

SOWING RATE

45-50 kg/ha.



LINOS

TYPE

Tetraploid, Westervold (alternative).

CYCLE

Medium, heading 2 days before Excellent.

FEATURES

- Autumn and spring sowing period.
- Use: silage, winter pasture, hay only in the drier areas.
- Plant that establishes quickly, with an excellent leaf-stem ratio.
- Excellent regrowing ability, allows various spring cuts to be provided in good conditions.

SOWING RATE

45-50 kg/ha.

EXCELLENT

TYPE

Tetraploid, Italian (not alternative).

CYCLE

Medium.

FEATURES

- Only autumn sowing period.
- Use: silage, but also hay in favourable conditions.
- Erect plant not susceptible to lodging, tall.
- Thin stem and leafy, compared to other tetraploids it allows fast drying for good quality hay.
- Variety developed in our breeding program, which guarantees good adaptability and very high yields in the various areas.

SOWING RATE

45-50 kg/ha.

BIG BANG

TYPE

Tetraploid, Westervold (alternative).

CYCLE

Medium, heading 1 days before Excellent.

FEATURES

- Autumn and spring sowing period.
- Use: silage, winter pasture.
- Very recent genetics, selected in Holland.
- Tall, great production potential, very healthy plant.

SOWING RATE

45-50 kg/ha.

AUBADE

TYPE

Tetraploid, Westervold (alternative).

CYCLE

Medium - late, heading 2 days after Excellent.

FEATURES

- Autumn and spring sowing period.
- Use: silage and winter pasture.
- The plant stands out due to its very wide leaves and good resistance to lodging.
- From a quality point of view the high digestibility of the fibre is underlined and the protein content that leads to a high MFU content.

SOWING RATE

45-50 kg/ha.

EXTREM

TYPE

Tetraploid, Westervold (alternative).

CYCLE

Medium - late, heading 3 days after Excellent .

FEATURES

- Autumn and spring sowing period.
- Use: silage, winter pasture. With early sowing, a good autumn cut can be obtained.
- Vigorous plant and productive with quick establishment.
- It has obtained excellent results in central-southern areas of Italy susceptible to spring drought and adapts very well to the cooler northern areas.
- PSE genetics: it highlights good digestibility and a low lignin content compared to average.

SOWING RATE

45-50 kg/ha.

DANERGO

TYPE

Tetraploid, Italian ryegrass (not alternative).

CYCLE

Medium -late, heading 4 days after Excellent.

FEATURES

- Autumn sowing.
- Use: silage, haylage.
- Erect plant that facilitates mowing.
- Guaranteed productivity: it was one of the varieties at the top of the official tests in Italy.
- High resistance to leaf rusts and to Fusarium and good tolerance to mildew, guarantee a highly palatable healthy fodder.

SOWING RATE

45-50 kg/ha.

DUKAT

TYPE

Tetraploid, Italian (not alternative).

CYCLE

Medium - late, heading 4 days after Excellent.

FEATURES

- Only autumn sowing period.
- Use: silage or banded hay. Hay only in optimal conditions.
- Tall, semi-erect plant.
- It has highlighted high production potential and a great tillering ability. For this reason it maintains high yields even in multiple cuts management.
- Variety of Polish genetics recently constituted.

SOWING RATE

45-50 kg/ha.

BORMITRA

TYPE

Tetraploid, Westervold (alternative).

CYCLE

Medium - late, heading 4 days after Excellent.

FEATURES

- Autumn and spring sowing period.
- Use: silage, winter pasture, green forage.
- Plant with balanced leaf-stem ratio, good tolerance to rust.
- Recently developed variety, suitable for management in various cuts.
- Great palatability observed in pasture and green forage due to the high sugar content.

SOWING RATE

45-50 kg/ha.

EMMERSON

TYPE

Tetraploid, italic (non-alternative).

CYCLE

Late, earing 5 days after Excellent.

FEATURES

- Autumn sowing period.
- Use: silage, wrapped hay, green fodder.
- Plant with high leafiness and excellent tolerance to the main pathologies, in particular to rust even in humid environments. Quick establishment after sowing and rapid spring vegetative recovery.
- Low in NDF content and high in metabolizable energy.

SOWING RATE

45-50 kg/ha.

LOLAN

TYPE

Tetraploid, Westervold (alternative).

CYCLE

Late, earing 5 days after Excellent.

FEATURES

- Sowing period: autumn and spring.
- Use: silage, wrapped hay, winter pasture.
- Number one variety for productivity!
- Ratio between leaves and stem higher than the average of normal Westervolds.
- Quick recovery: it adapts to allow more cuts in suitable environments.
- The slow maturation allows a wide harvest window, without the risk of compromising quality.

SOWING RATE

45-50 kg/ha.

BARTIGRA

TYPE

Tetraploid, Westervold (alternative).

CYCLE

Late, heading 5 days after Excellent.

FEATURES

- Autumn and spring sowing period.
- Use: silage, winter pasture, green forage.
- Fast establishment, adaptable both in the north and the centre-south.
- Resistant to lodging, great tillering ability, and soil coverage in spring.
- Suitable for harvesting in various cuts considering its regrowing ability.

SOWING RATE

45-50 kg/ha.

BARSUTRA

TYPE

Tetraploid, Westervold (alternative).

CYCLE

Late, heading 5 days after Excellent.

FEATURES

- Autumn and spring sowing period.
- Use: silage, winter pasture.
- Dutch variety, with very high production performance levels. High protein content of the forage and high yield in MFU.
- Suitable for all Italian growing areas.

SOWING RATE

45-50 kg/ha.





WHEAT FORAGE

TRITICUM AESTIVUM

CARATTERISTICHE

- Over recent years soft wheat has become increasingly common as a forage plant both for producing silage and for producing hay, thanks to the excellent quality features of the green plant.
- To use wheat successfully as forage, the variety must be chosen carefully, especially so as to maximise yields.
- The desired features are above average height, excellent tillering ability, very leafy, very healthy plant, short awned spikes.
- Wheat forage is harvested from the start of heading (hay) to the milky-dough stage (chopped forage).

STRENGTHS OF THE SPECIES

- High green matter production levels in more favourable conditions.
- High protein content, good fibre digestibility and high MFU content.
- Lignin content lower than rye and triticale.

	MINIMUM	AVERAGE	MAXIMUM
Dry matter (%)	20,1	20,7	21,4
Protein (% dry matter)	11,6	13,0	14,4
Lipids (% dry matter)	2,2	2,3	2,5
NDF (% dry matter)	57,0	61,0	64,3
ADF (% dry matter)	34,5	37,3	39,7
ADL (% dry matter)	2,9	3,4	4,0
% dry matter	4,7	8,5	10,9
digNDF (% NDF)	57,7	62,8	68,3
MFU	0,64	0,69	0,75

Average analyses on green plants in the heading stage (source: Padana Sementi tests)

WHEAT FORAGE	AVERAGE HEIGHT	AVERAGE DRY MATTER	BIOMASS PRODUCTION T/HA
Augustus	113,3	41,3%	21,5
CH Campala	110,0	28,4%	16,0
Enrico	125,0	44,6%	21,4
KWS Baltrum	116,7	38,6%	23,2
KWS Scirocco	115,0	40,4%	19,2
KWS Starlight	111,7	37,0%	22,2
Ludwig Test.	125,0	38,3%	20,9
Average	116,7	38,4%	20,6

(source: Agricola 2000 tests)

ENRICO



CYCLE

Late, not alternative..

FEATURES

- Autumn sowing period.
- Use: forage and grain.
- Brand new variety of Austrian genetics . Tall plant with awnless spike, and biomass yields potential.
- Plant resistant in particular to leaf rusts and Septoria, guarantees the production of healthy and quality fodder.
- High baking quality grain.

SOWING RATE

160-170 kg/ha.

AUGUSTUS



CYCLE

Late, not alternative.

FEATURES

- Autumn sowing period.
- Use: forage (silage and hay).
- Tall variety (110-120 cm), short awned spike, erect leaves and great resistance to lodging.
- Very healthy leaves: good resistance to Fusarium and tolerant to rust.
- The plant remains leafy until harvest and guarantees excellent fibre digestibility.

SOWING RATE

160-180 kg/ha.

LISKAMM



CYCLE

Medium- late, alternative.

FEATURES

- Autumn and spring sowing.
- Use: silage or grain.
- Leafy and tall plant with big awnless ear.
- Good tiller production and good stability in relation to the height reached. - Excellent staygreen - The variety stands out for its health and tolerance against leaf rust. For this reason it is recommended for organic farming.
- Produces high quality grain.

SOWING RATE

160-170 kg/ha. In case of spring sowing 180-190 kg/ha.

KWS FERRUM



CYCLE

Medium- late, not alternative.

FEATURES

- Autumn and spring sowing.
- Use: silage or grain.
- Leafy and tall plant with big awnless ear.
- Good tiller production and good stability in relation to the height reached.
- Excellent staygreen.
- The variety stands out for its health and tolerance against leaf rust. For this reason it is recommended for organic farming.
- Produces high quality grain.

SOWING RATE

170-180 kg/ha.

KWS SCIROCCO



CYCLE

Medium, alternative.

FEATURES

- Autumn and spring sowing period.
- Use: forage and grain.
- Plant of good size, short awned spike and good tillering ability.
- Good tolerance to Oidium, Fusariosis and brown rust.
- Excellent resistance to lodging.
- High production potential in both forage and grain.
- It produces good quality grain.
- Its precocity makes it suitable also for many areas of the Center-South.

SOWING RATE

170-180 kg/ha.

CH CAMPALA

CYCLE

Early, alternative.

FEATURES

- Autumn and spring sowing period.
- Use: forage and grain.
- Plant of good size, short awned spike and good tillering ability.
- Good tolerance to Oidium, Fusariosis and brown rust.
- Excellent resistance to lodging.
- High production potential in both forage and grain.
- It produces good quality grain.
- Its precocity makes it suitable also for many areas of the Center-South.

SOWING RATE

In case of autumn sowing 180 kg/ha. In case of spring sowing 210-220 kg/ha.



BARLEY

HORDEUM VULGARE

FEATURES

- A cereal traditionally used for forage crops, it is especially suited to pasture, green forage or silage.
- The harvesting stage is extremely important as it must be harvested before the heading stage so that the quality is not lost.

STRENGTHS OF THE SPECIES

- Barley produces high quality forage, with a high energy content (see table).
- Compared to wheat and oats, it is earlier.
- Excellent adaptability to lean or loose soils and to those that tend to be salty.

	MINIMUM	AVERAGE	MAXIMUM
Dry matter (%)	20,1	20,7	21,4
Protein (% dry matter)	11,6	13,0	14,4
Lipids (% dry matter)	2,2	2,3	2,5
NDF (% dry matter)	57,0	61,0	64,3
ADF (% dry matter)	34,5	37,3	39,7
ADL (% dry matter)	2,9	3,4	4,0
Sugar (% dry matter)	4,7	8,5	10,9
digNDF (% NDF)	57,7	62,8	68,3
MFU	0,64	0,69	0,75

Average analyses on green plants in the heading stage (source: Padana Sementi tests)

VARIETY	AVERAGE HEIGHT (cm)	AVERAGE DRY MATTER	BIOMASS PRODUCTION T/HA
KWS Tonic	95,83	33,6%	10,11
Suez	93,33	28,5%	9,30

Average data of two years (2020-21).
(source: Agricola 2000 tests)

KWS TONIC



CYCLE

Medium.

FEATURES

- Autumn sowing period.
- Use: forage and grain.
- Six rows barley, average-tall size, vigorous growth.
- Great productivity: in the official tests it competes with the best hybrid rice.
- Excellent resistance to lodging.
- High specific weight and good caliber grain, suitable for zootechnical use.

SOWING RATE

140-150 kg/ha.

HEIDI



CYCLE

Medium - early, not alternative.

FEATURES

- Autumn sowing period.
- Use: forage and grain.
- Six rows barley, average-tall size, vigorous growth.
- Great productivity: in the official tests it competes with the best hybrid rice.
- Excellent resistance to lodging.
- High specific weight and good caliber grain, suitable for zootechnical use.

SOWING RATE

150-160 kg/ha.

MOCHINA 5

CYCLE

Medium -early.

FEATURES

- Autumn sowing.
- Use: forage.
- Six row variety with awnless ear that represents something new on the forage plant market.
- Perfect variety for forage use: tall, leafy plant with high tiller production and excellent staygreen. The absence of awns allows to have a more palatable fodder even after earing.
- Good resistance to lodging and excellent plant health.

SOWING RATE

140-150 kg/ha.

SUEZ

CYCLE

Medium-late, not alternative.

FEATURES

- Use: fodder (silage and pasture), grain.
- Two-row tall barley with stable plant.
- High tillering capacity and consequent high number of ears per square metre.
- Particularly suitable grain for malting, with high calibre and low beta-glucan content.
- Optimal harvest for fodder from pre-earring to no further than milk-mature.

SOWING RATE

140-150 kg/ha.



TRITICALE

X TRITICOSECALE

FEATURES

- Cereal that originates from a cross between wheat and rye, initially selected as a grain cereal.
- This cereal is becoming increasingly important for the production of green matter and for zootechnics and bioenergy.
- Padana Sementi Elette has been promoting this species for a long time and it is among the first Italian companies to focus on its potential for pure forage and in forage crop intercropping.
- The company is also making investments for the selection in Italy of new varieties, to extend its already wide range of varieties.

STRENGTHS OF THE SPECIES

- More hardy, adaptable and productive species than wheat and higher quality compared to rye (see table).
- Crop that is suited to being managed sustainably, with low agronomic input (fertilizers, plant protection products).
- Very healthy plant, which is naturally less susceptible to fungal diseases compared to the other cereals. In unfavourable years (damp, mild winters), any fungal attacks can be easily contained with a targeted treatment if extensive symptoms present.

	MINIMUM	AVERAGE	MAXIMUM
Dry matter (%)	20,1	20,7	21,4
Protein (% dry matter)	11,6	13,0	14,4
Lipids (% dry matter)	2,2	2,3	2,5
NDF (% dry matter)	57,0	61,0	64,3
ADF (% dry matter)	34,5	37,3	39,7
ADL (% dry matter)	2,9	3,4	4,0
Sugar (% dry matter)	4,7	8,5	10,9
digNDF (% NDF)	57,7	62,8	68,3
MFU	0,64	0,69	0,75

Average analyses on green plants in the heading stage (source: Padana Sementi tests)

FROOME



CYCLE

Very early (-25 days compared to Leontino).

FEATURES

- Autumn and spring sowing period.
- Use: silage.
- Brand new variety, with tall plant and well developed ear.
- It adapts to all Italian conditions, but it is particularly indicated in areas with a Mediterranean climate where it can exploit at best the mild winters and short springs, avoiding the effects of anticipated droughts.
- Resistant to lodging.

SOWING RATE

180-200 kg/ha.

GRIFONE



CYCLE

Very early (-25 days compared to Leontino).

FEATURES

- Autumn and spring sowing period.
- Use: silage.
- Italian genetics, selected by CREA (national institute for agricultural research) in collaboration with Padana Sementi for precocity and complete alternativity.
- Good plant size, suitable for cultivation in all Mediterranean areas and where the earliest harvest is needed.
- Plant adaptable and lodging resistant.

SOWING RATE

180-200 kg/ha.

DUBLET



CYCLE

Medium -early, alternative (-14 days compared to Leontino).

FEATURES

- Autumn and spring sowing period.
- Use: silage, biomass, hay.
- High plant, high leafiness.
- It is distinguished by its excellent health and resistance to Septoria and brown rust, even in tough years.

SOWING RATE

160-180 kg/ha.

GORILLA



CYCLE

Medium early, alternative (-8 days compared to Leontino).

FEATURES

- Autumn and spring sowing season.
- Use: recommended both for silage and grain production.
- New variety developed by CREA (national institute for agricultural research) in collaboration with Padana Sementi.
- Plant with good size and excellent tiller production, very reliable and adaptable to different areas.
- It is distinguished by its high health and resistance to fleaf diseases and in particular to rusts.
- Lodging resistant.

SOWING RATE

160-180 kg/ha.

KWS FIDO



CYCLE

Medium early (-6 days compared to Leontino).

FEATURES

- Autumn sowing period.
- Use: silage for zootechnical and bioenergetic use.
- Tall plant with good early vigour and fast spring growth.
- Quite good overall health, with good leaf diseases tolerance.
- Good biomass yield potential.

SOWING RATE

170 kg/ha.

TRASTEVERE



CYCLE

Medium , not alternative (-5 days compared to Leontino).

FEATURES

- Autumn sowing season.
- Use: silage and grain.
- Brand new variety selected in Italy.
- Medium-high size plant, with great stability. Reliable in every Italian area.
- High resistance to leaf rust.

SOWING RATE

170-180 kg/ha

CLAUDIUS



CYCLE

Medium, not alternative (-5 days compared to Leontino).

FEATURES

- Autumn sowing period.
- Use: silage, biomass, grain.
- Tall plant, not very susceptible to diseases.
- Completely new in 2015: all the potential of this variety has emerged from the official Austrian tests (see table).

SOWING RATE

160-180 kg/ha

COSINUS



CYCLE

Medium late, not alternative (-4 days compared to Leontino).

FEATURES

- Autumn sowing period.
- Use: silage for zootechnical and bioenergetic use.
- Impressive size plant with great lodging resistance.
- High and stable production in all areas, with good green colour retention.
- Good health of the plant.

SOWING RATE

150-160 kg/ha.

DATA TAKEN FROM THE OFFICIAL AUSTRIAN TESTS 2014.
(AVERAGE OF 8 LOCATIONS)

VARIETY	GRAIN PRODUCTION INDEX	PLANT HEIGHT (CM)	SPECIFIC WEIGHT
CLAUDIUS	108	131	72,6
TRIAMANT	104	124	72,7
COSINUS	100	129	73,9
TULUS	100	128	71,7
MUNGIS	99	126	73,6
BOROWIK	99	138	70,1
AGOSTINO	98	105	75,1
TRICANTO	97	136	74,1
TRIMMER	94	139	72,7
ELPASO	94	124	74,2

LEONTINO



CYCLE

Late, not alternative.

FEATURES

- Autumn sowing period.
- Use: silage for zootechnical and bioenergetic use.
- Impressive size plant with great lodging resistance.
- High and stable production in all areas, with good green colour retention.
- Good health of the plant.

SOWING RATE

170-180 kg/ha.

TRITICALE	AVERAGE HEIGHT (cm)	AVERAGE DRY MATTER	BIOMASS PRODUCTION T/HA
Claudius	121,7	36,9%	20,1
Cosinus	131,7	40,6%	25,1
Dublet	125,0	28,1%	14,0
Froome	130,0	28,2%	18,3
Grifone	123,3	30,0%	18,0
Maximal Test.	133,3	40,1%	15,8
SDZ Z0871	121,7	33,6%	21,2
Average	125,8	34,7%	18,2

(source: Agricola 2000 tests)

TRIMAXUS



CYCLE

Late, not alternative.

FEATURES

- Sowing period: autumn.
- Use: biomass.
- Brand new Austrian variety expressly selected for high biomass production.
- Very tall plant with good tillering capacity.
- Perfect balance between the length of the stem and the size of the ear which allows to combine yield and stability.

SOWING RATE

170-180 kg/ha.



OATS

AVENA SATIVA

FEATURES

- Among the cereals it is probably the one that lends itself best to forage production and the one that is most often used for this purpose.
- The different types of oats are traditionally distinguished by the colour of the grain: white oats, mainly used for producing grain, black oats that are more leafy and suitable for forage, red oats particularly suitable for the hot and dry climates of central-southern Italy.
- The careful choice has led to the resolution of some limiting factors of this plant; resistance to lodging, and resistance to winter cold also in northern Italy.
- Confirming the attention that goes into the selection of our range of varieties, some have been at the top of the official tests for a number of years now.

STRENGTHS OF THE SPECIES

- Multi-functional forage cereal: pasture, hay, green forage, grain
- Suited to all Italian environments, it expresses its potential best in the central-southern areas with a mild winter.
- Compared to other cereals, oats allow a distinctly wider harvesting window, with a very slow deterioration of the forage quality as it ripens further.
- The quality of the forage produced is very high: low lignin content, high fibre digestibility (similar to ryegrass), and MFU yield higher than any other cereal (see table).

	MINIMUM	AVERAGE	MAXIMUM
Dry matter (%)	20,1	20,7	21,4
Protein (% dry matter)	11,6	13,0	14,4
Lipids (% dry matter)	2,2	2,3	2,5
NDF (% dry matter)	57,0	61,0	64,3
ADF (% dry matter)	34,5	37,3	39,7
ADL (% dry matter)	2,9	3,4	4,0
Sugar (% dry matter)	4,7	8,5	10,9
digNDF (% NDF)	57,7	62,8	68,3
MFU	0,64	0,69	0,75

Average analyses on green plants in the heading stage (source: Padana Sementi tests)

FORRIDENA

CYCLE

Late, alternative (same cycle as Aveny).

FEATURES

- Autumn and spring sowing period.
- Use: forage (silage, bonded hay), pure or in intercropping.
- White grain variety.
- The plant can be clearly distinguished by its imposing size (up to 170 cm) and abundant leaves. Therefore intercropping guarantees the lowest risk of lodging and the best performance levels in the field.
- Allows very high quantities of top quality green matter to be produced (above average digestibility for oats).

SOWING RATE

110-130 kg/ha.

AVENY

CYCLE

Late, alternative.

FEATURES

- Autumn and spring sowing period.
- Use: dual use for grain and forage (in intercropping and pure).
- White grain variety, tall.
- Very resistant to lodging compared to all other oat varieties.
- Resistant to winter frost.
- Stands out due to its very high production potential as shown and every year confirmed by the results of the tests coordinated by CRA.
- Very high performance levels in central-northern Italy.
- Very healthy plant even in difficult years.

SOWING RATE

130-150 kg/ha.

BERDYSZ

CYCLE

Medium -late, alternative (-4 compared to Aveny).

FEATURES

- Autumn and spring sowing period.
- Use: grain and forage (silage, bonded hay).
- Yellow grain variety.
- Average size plant, not susceptible to lodging, optimal leaf/stem ratio.
- Resistant to Oidium and Septoria.

SOWING RATE

140-150 kg/ha.

GNIADY



CYCLE

Late, alternative (-2 compared to Aveny).

FEATURES

- Autumn and spring sowing period.
- Use: dual use for grain and forage (in intercropping and pure).
- Black grain variety, medium-tall and with wide and healthy leaves.
- High resistance to lodging.
- Resistant to winter frost.
- Still in the official tests, it is currently the most productive black oat variety in Italy, particularly in the central-northern areas.

SOWING RATE

130-150 kg/ha.

LUNA

CYCLE

Medium, alternative (-5 compared to Aveny).

FEATURES

- Autumn and spring sowing period.
- Use: grain and forage (silage, bonded hay).
- Yellow grain variety.
- Average size plant, not susceptible to lodging, optimal leaf/stem ratio.
- Resistant to Oidium and Septoria.

SOWING RATE

130-140 kg/ha.

PROKOP

CYCLE

Medium -early, alternative (-6 compared to Aveny).

FEATURES

- Autumn and spring sowing period.
- Usage: forage (silage, banded hay) and grain.
- New white-grain variety, with medium-high size and good resistance to lodging.
- Good tolerance to rust and Oidium.
- It produces grain of good specific weight.

SOWING RATE

130-150 kg/ha.

OMBRONE



CYCLE

Medium, alternative (-5 days compared to Aveny).

FEATURES

- Sowing period: autumn or spring.
- Use: winter pasture and hay, fodder crops.
- Red grain variety, tall in size.
- The excellent tillering capacity, the medium-fine stems and the excellent leaf / stem ratio make this variety suitable for haymaking and the formation of early cycle weeds.
- Variety adaptable to all Italian areas and particularly indicated in areas characterised by mild and dry springs.

SOWING RATE

130-150 kg/ha.

TYPHON

CYCLE

Medium -early, alternative (-8 compared to Aveny).

FEATURES

- Autumn and spring sowing period.
- Use: forage (silage, bonded hay), intercropping in forage crops and grain.
- White grain variety, with tall plant, particularly wide leaves, does not lodge easily.
- Resistant to Oidium, good tolerance to leaf diseases.
- First for production in official tests in Austria.

SOWING RATE

130-150 kg/ha.

INSIGNIA

CYCLE

Early, semi-alternative (-9 days compared to Aveny).

FEATURES

- Sowing period: preferably autumn.
- Use: fodder crops, grain.
- Variety with white grains, minimally prone to lodging, with medium-tall height and medium stems. Suitable for haymaking.
- High yield potential in quality grain, with high protein content and high specific weight. Reference variety in the official tests conducted in Spain.
- Tolerant to leaf rust and resistant to powdery mildew.
- Excellent adaptability throughout Italy.

SOWING RATE

130-150 kg/ha.

PREVISION

CYCLE

Early, alternative (-10 compared to Aveny).

FEATURES

- Red grain variety, with thin plant suitable for hay, medium-tall.
- Perfect variety for central-southern Italy, where it is shown to be very hardy and reliable.

SOWING RATE

130-150 kg/ha.



BRISTLE OAT

AVENA STRIGOSA

STRENGTHS OF THE SPECIES

- Cereal with an early cycle, adaptable and not demanding in terms of agronomic input.
- Suitable for marginal soils, also in cold or mountainous areas.
- Allows good grain or forage yields, with low production costs.

IAPAR 61

CYCLE

Medium, alternative.

FEATURES

- Use: Hay and pasture. However, it is recommended to use it in intercropping to reduce the risk of lodging and improve yields.
- Tall plant, very healthy and not susceptible to particular diseases.
- Excellent adaptability throughout Italy, it also adapts well to less fertile soils and the difficult central-southern areas with the risk of spring drought.

SOWING RATE

70 kg/ha.

Other varieties available: SAIA 6



RYE

SECALE CEREALE

STRENGTHS OF THE SPECIES

- Cereal with an early cycle, adaptable and not demanding in terms of agronomic input.
- Suitable for marginal soils, also in cold or mountainous areas.
- Allows good grain or forage yields, with low production costs

BORFURO

CYCLE

Medium, not alternative.

FEATURES

- Autumn sowing period.
- Use: grain or biomass (also in intercropping).
- Tall variety with good quality grain for bread flours.

SOWING RATE

160-170 kg/ha.

DUKATO



CYCLE

Medium, not alternative.

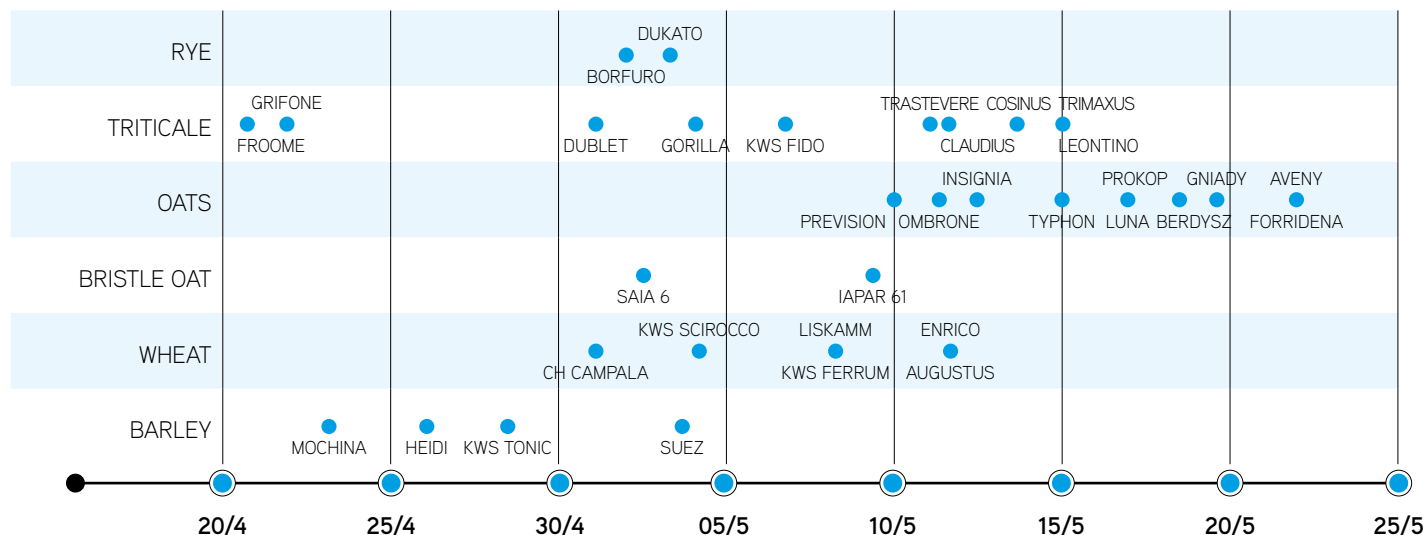
FEATURES

- Autumn sowing period.
- Use: forage (silage) and grain.
- Medium-sized plant with discrete lodging resistance.
- Affordable in all environments.
- Good tolerance to major cereal diseases.
- Produces grain to make into bread.

SOWING RATE

160-170 kg/ha.

Heading period of the different varieties



NORTHERN ITALY AVERAGE INTERVALS



CRIMSON CLOVER

TRIFOLIUM INCARNATUM



FEATURES

- Annual clover that can be used both in areas with mild climates and in more northern areas, considering its good resistance to cold (up to -20°C).
- Can be used both pure and in mixtures for pasture meadows, hay and green manure.
- In spring it provides a single cut and if sowed early in autumn it provides an excellent pasture for the whole winter.
- The green forage does not cause meteorism.
- Suitable for loose to clay soils, with pH between 5.5 and 7.5.

ALBEROBELLO



CYCLE

Early.

FEATURES

- Excellent for abundant hay harvest, can be grazed in winter.
- Great production potential, both for formation of forage mixtures and for early production of green manure for nitrogen soil enrichment.

SOWING RATE

30-35 kg/ha.

PIER

CYCLE

Early.

FEATURES

- Very leafy and resistant leaves after cutting.
- Use: hay, forage, pasture.

SOWING RATE

30-35 kg/ha.

OPOLSKA

CYCLE

Medium -late.

FEATURES

- Very leafy and resistant leaves after cutting.

SOWING RATE

30-35 kg/ha.

HYKNUSA

CYCLE

Very late.

FEATURES

- Obtained by Padana Sementi Elette starting from Sardinian ecotypes.
- Great regrowing ability, extended period of use which allows yields to be maximised.
- Use: particularly suitable for good quality pasture, followed by the spring cut.

SOWING RATE

30-35 kg/ha.



BERSEEM CLOVER

TRIFOLIUM ALEXANDRINUM



FEATURES

- Annual clover generally used pure, but that can be used for intercropping in forage crops.
- Remarkable resistance to spring drought, it adapts well to Mediterranean conditions.
- Poor resistance to winter frost: in northern Italy it can be sowed in spring where it can provide two or more cuts.
- In mild climates it can be cut various times from autumn until spring.
- Suitable for grazing, green forage and hay.
- It adapts to various types of soil, but prefers clay and alkaline soils. optimal pH between 6 and 8.

SOWING RATE

20-30 kg/ha.

LAURA

CYCLE

Medium -late.

FEATURES

- Variety with good tillering and regrowing ability.
- Average tolerance to the cold, it is more productive in central-southern areas.

MARIO

CYCLE

Medium -late.

FEATURES

- Two-colour seed variety, with decent tolerance to the cold.
- Good resistance of the leaf after cutting and high leaf/stem ratio.
- Use: hay, forage, pasture.

LEILA



CYCLE

Medium.

FEATURES

- Selected variety in Central Italy, with good resistance to water stress.
- Medium-sized plant with vigorous growth.
- Use: hay, pasture.



PERSIAN CLOVER

TRIFOLIUM RESUPINATUM



FEATURES

- Annual clover suitable for producing hay or for grazing, pure, or in a mixture with graminaceous crops.
- It prefers clay or medium textured soils with pH between 5.5 and 8. Not suitable for sandy and very acidic soils.
- Produces very palatable and high quality forage: the stalk is thick, but hollow inside and very soft.
- It is sowed in the autumn in the central-southern areas and in the spring in the north.

SOWING RATE

8-10 kg/ha.

LIGHTNING

CYCLE

Medium-late.

FEATURES

- Variety suitable for strong and alkaline soils.
- Semi-erect plant, suitable for cutting and intercropping with graminaceous plants.

LOGUDORO



CYCLE

Medium.

FEATURES

- Erect plant, with vigorous and hollow stalks.
- Produces excellent, palatable and digestible forage (16-24% crude protein).
- Use: pasture, hay and silage.
- Quick establishment that makes it suitable for spring sowing with excellent production levels.

LASER

CYCLE

Late.

FEATURES

- Very flexible use: good winter growing and extended season of use for pasture, rapid regrowth for green forage or hay.
- Stalk has good tolerance to rust and Phytophthora.



COMMON VETCH

VICIA SATIVA



FEATURES

- Annual climbing species, mainly used in intercropping for the formation of autumn-spring forage crops along with other leguminous or graminaceous plants, to increase the protein content.
- Very hardy and adaptable plant: grows in light and clay soils, not very susceptible to waterlogging with pH comprised between 5.5 and 8.0.
- Excellent green manure species due to its great nitrogen fixing ability and its great ability to cover and suppress weeds.
- Sowing rate: 90-120 kg/ha.

PIETRANERA



CYCLE

Medium.

ALEXANDROS

CYCLE

Medium - early.

BUZA

CYCLE

Medium - late.

JOSE

CYCLE

Medium - late.

GRAVESA 81

CYCLE

Medium - late.



HAIRY VETCH

VICIA VILLOSA



FEATURES

- Climbing species which, compared to the common vetch, is very hardy and resistant to cold, even in mountainous areas.
- It can regrow if it is cut before flowering, whereas if it is harvested later it quickly loses its quality as the fibres get harder.
- It withstands saline soils and drought, adapting to acidic and sandy soils as well as heavy soils susceptible to waterlogging.
- Excellent for green manure, thanks to its aggressive spring growth, It is recommended always to bury it before the seeds ripen.
- Sowing rate: 75-100 kg/ha.

VILLANA

CYCLE

Medium.

HAYMAKER PLUS

CYCLE

Medium - late.



PURPLE VETCH

VICIA BENGHALENSIS



FEATURES

- Species with a late cycle, suitable for central-southern Italian environments.
- Does not withstand winter frost.
- Excellent quality forage both for hay and for silage.
- Sowing rate: 50-70 kg/ha.



HUNGARIAN VETCH

VICIA PANNONICA



FEATURES

- Species with good resistance to cold, suitable for damp/humid environments with heavy and clay soils.
- Compared to the hairy vetch it is less aggressive in intercropping, allowing balanced mixtures to be formulated.
- Sowing rate: 80-90 kg/ha.

POPANY

CYCLE

Late.

DETENICKA

CYCLE

Medium.



FABA BEAN

VICIA FABA MINOR



FEATURES

- This species is suitable for sandy to clay soils with sub-alkaline reaction, and it does not withstand drought or prolonged waterlogging.
- Used pure to produce grain or, less frequently intercropped, for forage crops.
- The excellent quality grain (25-30% protein) is used in the formulation of feed.
- Excellent for improving soil due to its high nitrogen fixing ability, therefore it is suitable for green manure.

PROTHABON 101

CYCLE

Medium-early.

FEATURES

- Autumn sowing period (centre-south) or early spring in the north.
- Use: grain, green manure.
- Average-tall plant (110-120 cm), with a light grain, insertion of the first pod high off the ground (15 cm), to facilitate harvesting and prevent losses.
- Not very susceptible to lodging.
- High protein content of the grain (up to 31-33%), suitable for producing flour with high protein content. - Constantly high production levels.

SOWING RATE

With precision sowing: 50-60 seeds/m², corresponding to 200-240 kg/ha
Average TGW: 480 g.

SOLON

CYCLE

Medium - early.

FEATURES

- Autumn sowing period (Center-South) or early spring in the North of Italy.
- Use: grain, green manure.
- Medium size plant (100-120 cm), not very susceptible to lodging.
- Light colour grain variety.
- Good resistance to Sclerotinia and low temperatures.
- High protein content of grain (up to 31-32%), suitable for the production of protein flours and livestock feeding.

SOWING RATE

With precision sowing: 40 seeds/m², corresponding to 200-240 kg/ha
Average TGW: 500 g



PEA

PISUM SATIVUM SSP. HORTENSE



FEATURES

- Sub-species mainly used for producing grain for human food or zootechnics. It is often added to forage mixtures to increase the protein content of the forage.
- Quite resistant to winter cold (maximum resistance stage at 4-5 leaves).
- Does not tolerate spring heat and drought, or waterlogging.
- Average recommended seed investment: 120 seeds/m².

PROTEAL

CYCLE

Medium - early.

FEATURES

- Afila plant with yellow grain, erect and tall (80-90 cm).
- Suitable for both grain and forage. Excellent for intercropping in forage crops.
- High protein content of the grain.

SOWING RATE

250-260 kg/ha.

ANGELA

CYCLE

Early.

FEATURES

- Use: grain and forage.
- Afila variety with yellow grain, erect habitus and medium size, that makes threshing easier.
- Great productive potential and quality grain, that allows high protein yields per hectare.

SOWING RATE

240-250 kg/ha.

HARDY

CYCLE

Early.

FEATURES

- Afila variety, with light cream grain.
- Excellent grain production potential.

SOWING RATE

250-280 kg/ha.



FORAGE PEA

PISUM SATIVUM SSP. ARVENSE



FEATURES

- Climbing plant with real leaves and greater vegetative development than the pea.
- It is exclusively used in intercropping with graminaceous and leguminous crops for producing green forage or silage.
- In areas with mild climates it can be used instead of vetch, providing forage with more sugar and less fibre.

SOWING RATE

200-220 kg/ha.

OLYMPOS



CYCLE

Medium.

ARVIKA

CYCLE

Medium - late.



PINK SERRADELLA

ORNITHOPUS SATIVUS



FEATURES

- Annual leguminous crop for pasture, with spindly, prostrate, upward and very branched stems and composite leaves. Flowers in pale pink heads.
- Suitable for adding to autumn-spring pasture forage crops or pure.
- Provides very palatable, high quality forage (protein 19%, digestibility of dry matter 70-80%), does not cause any problems for livestock.
- Suitable for acidic soils (pH between 4 and 7), lean from sandy to silty. Not suitable for alkaline soils with pH >7.5.
- Fundamental inoculation with specific rhizobium Alosca group S. Sowing rate: 25-30 kg/ha with coated seed.

SOWING RATE

25-30 kg/ha with coated seed.

EMENA

CYCLE

Medium - early.



BLUE LUPIN

LUPINUS ANGUSTIFOLIUS



SOWING RATE

130-150 kg/ha.

BOREGINE

Other varieties available: **SONET**



COWPEA

VIGNA UNGUICULATA, SIN. SINENSIS

FEATURES

- Annual leguminous crop with a summer cycle of tropical origin, marked by its fast growth and great hardiness.
- Within this species, specific varieties for grain (black-eyed pea) or for forage have been chosen, with significant development of the green mass.
- - Optimal development takes place between 20 and 30°C, with excellent resistance to high temperatures and temporary water stress.

RED CALOONA

CYCLE

Early.

FEATURES

- Use: forage (pure or in mixture), summer green manure.
- Variety specifically selected for forage use.
- Erect plant, average-tall, very leafy.
- Excellent soil coverage ability, with vigorous growth.
- Excellent forage properties, particularly due to the protein and metabolizable energy content.
- Great soil improvement effect, with low agronomic input.

SOWING RATE

25-30 kg/ha, pure.

SOWING PERIOD

minimum soil temperature of 18°C.



SUBTERRANEAN CLOVER

TRIFOLIUM SUBTERRANEUM



FEATURES

- This leguminous species, that has an autumn-spring life cycle, the best self-reseeding species thanks to the plant's peculiar feature of actively reburying the seeds and the high proportion of hard seeds (40-50%).
- It forms long-lasting pastures withstanding the dry summers of Mediterranean areas due to the substantial deposits of seeds in the soil, which germinate in the autumn in favourable conditions.
- Prostrate plant, particularly suitable for grazing.
- This species is the most suitable for the grassing of tree crops in Mediterranean areas, where it is reasonably tolerant to semi-shading and above all does not create any water competition with the crops in the summer period.
- The genetic improvement has created many varieties that stand out due to their minimum water requirements (AAP= Average Annual Precipitation) and cycle length. The precocity is classified in classes 1 to 9: Class 1 with 80 days from sowing to flowering; class 9 with 145 days.
- Sowing: recommended in the autumn at the rate of 25-35 kg/ha.

IT CAN BE SPLIT INTO THREE SUB-SPECIES

- 1. SUBTERRANEAN** (ssp. subterraneum):
the least sensitive to cold, suitable for acidic and loose soils, it is the most active at burying seeds. Black seeds.
- 2. BRACHYCALYGINUM** (ssp. brachycalicinum):
the most suitable for sub-alkaline and clay soils, not very good at burying seeds. Black or black-reddish seeds.
- 3. YANNINICUM** (ssp. yannanicum):
suitable for wet areas with neutral to sub-acidic soils. Light coloured seeds.

SUBTERRANEAN SUB-SPECIES

LOSA

FEATURES

- Very early cycle (class 2).
- AAP: 450 mm.
- Soil pH 5-7.

SEATON PARK

FEATURES

- Early cycle (class 3).
- AAP: 590 mm.
- Soil pH 5-7.

WOOGENELLUP

FEATURES

- Medium-cycle (class 5).
- AAP: 550 mm.
- Soil pH 5-7.

CAMPEDA

FEATURES

- Medium- cycle (class 5).
- AAP: 550 mm.
- Soil pH 5-7.

DENMARK

FEATURES

- Late cycle (class 7)
- AAP: 600 mm.
- Soil pH 4.5-7.

LEURA

FEATURES

- Late cycle (class 9).
- AAP: 700 mm.
- Soil pH 4.5-7

BRACHCALYGINUM SUB-SPECIES

MINTARO

FEATURES

- Medium- cycle (class 5).
- AAP: 460 mm.
- Soil pH 5-8.

CLARE

FEATURES

- Medium-late cycle (class 6).
- AAP: 550 mm.
- Soil pH 5-8.

ANTAS

FEATURES

- Medium-late cycle (class 6.5).
- AAP: 450 mm.
- Soil pH 5-8

YANNINICUM SUB-SPECIES

MONTI

FEATURES

- Medium-early cycle (class 4): the earliest of the Yanninicum types.
- AAP: 500 mm.
- Soil pH 5.5-7.

TRIKKALA

FEATURES

- Medium- cycle (class 5).
- AAP: 620 mm.
- Soil pH 5.5-7.

GOSSE

FEATURES

- Medium-late cycle (class 7).
- AAP: 620 mm.
- Soil Ph 5.5-7.

NAPIER

FEATURES

- Late cycle (class 7).
- AAP: 600 mm.
- Soil pH 5.5-7.



ARROWLEAF CLOVER

TRIFOLIUM VESICULOSUM



FEATURES

- Annual clover suitable for the Mediterranean climate, where it reaches significant heights (over 1 m), with high yields.
- Erect plant with good quality forage which make it suitable for intercropping with graminaceous species.
- It spreads easily and lasts a long time in pasture lands.
- It is suitable for loose and not too calcareous soils, whereas it is not suitable for heavy soils or waterlogging. Optimal pH between 5.0 and 7.5.

CEFALÙ

CYCLE

Early.

SOWING RATE

10-12 kg/ha.

ZULU II

CYCLE

Medium-late.

SOWING RATE

8-10 kg/ha.



BALANSA CLOVER

TRIFOLIUM MICHELIANUM



FEATURES

- Annual clover with autumn-spring cycle, suitable for regions with a Mediterranean climate.
- It is a good self-reseeding species, thanks to its high proportion of hard seeds and the formation of substantial deposits in the soil.
- It prefers clay soils, also tolerating waterlogging. It adapts to a wide range of pH from acid to distinctly alkaline with values between 5 and 9.

SOWING RATE

8-10 kg/ha, pure.

PARADANA

CYCLE

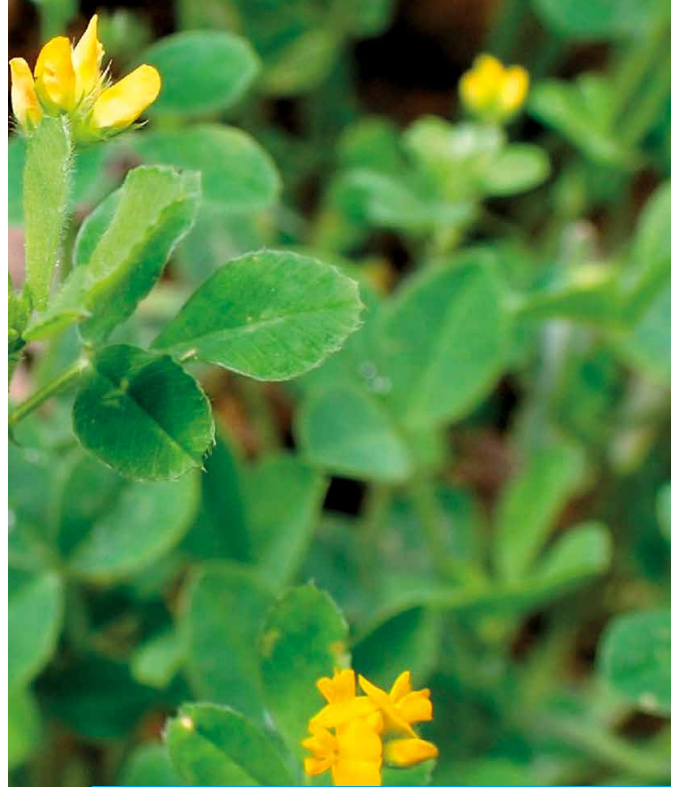
Medium.

BOLTA

CYCLE

Late.

Other available varieties: **VISTA**



BLURR MEDIC

MEDICAGO POLYMORPHA



FEATURES

- Annual leguminous crop common in Mediterranean pastures. Very hardy and productive, resistant to intensive grazing, then providing a good spring cut.
- Excellent self-reseeding ability, respecting the plant during flowering and seed ripening
- Particularly suitable species for technical grassing in Mediterranean areas.
- Suitable for clay soils from sub-acidic to alkaline with pH between 6 and 8.5. Tolerates slight salinity.
- It is the annual medic with the best tolerance to waterlogging.

SOWING RATE

10-15 kg/ha, pure.

SCIMITAR

CYCLE

Medium.



SNAIL MEDIC

MEDICAGO SCUTELLATA



FEATURES

- Annual cycle medic, tall and erect, large seeds and vigorous, fast growing seedlings. Suitable for central-southern areas.
- Excellent and productive for making hay, but does not tolerate intensive grazing.
- Good self-reseeding ability.
- Excellent soil improving effect, with benefits for crop rotation.
- Suitable for medium textured or moderately clay soils with optimal soil pH between 6 and 8.5.

SOWING RATE

15-20 kg/ha, pure.

KELSON

CYCLE

Medium-early.

SAVA

CYCLE

Early.



BARREL MEDIC

MEDICAGO TRUNCATULA



FEATURES

- Medic for Mediterranean climates with semi-prostrate growth, very adaptable to a wide range of soils from loose to medium texture and even clay, also in areas with not much rain in spring.
- Suitable for pastures even intensive winter and spring. Can be used for technical grassing mixed with other species.
- Does not tolerate waterlogging.
- Good self-reseeding ability, for long rotations (high percentage of hard seeds and consequent poor regeneration in the first year, but abundant from the second year). Can be used in rotations for soil improvement.
- Optimal soil pH between 6 and 8.5.

SOWING RATE

10-15 kg/ha, pure.

JESTER

CYCLE

Medium.

PARAGGIO

CYCLE

Medium.

MIXTURES FOR FORAGE CROPS



The long-standing experience of Padana Sementi in formulating and proposing forage mixtures allows customised solutions to be offered for all requirements. The mixtures can be distinguished by:

- The formulas, which are as balanced as possible by considering not only the percentages of the different species, but also through in-depth knowledge of the individual varieties used.
- The complete range for achieving the best result both in terms of quality and quantity in each area.
- The possibility to provide customised mixtures according to the customer's indications.

STRENGTHS OF FORAGE MIXTURES

- High environmental adaptability and production potential (higher than species cultivated pure).
- Lower risk of lodging.
- Extended harvest window without risk of product quality loss.
- Balanced forage with different sources of fibre and better

digestibility.

- Healthier plants with less spread of diseases.
- Mixtures with leguminous crops allow the agronomic input to be reduced and contribute to an improvement in the structure and fertility of the soil.

MIXTURES	AVERAGE HEIGHT (cm)	AVERAGE DRY MATTER	BIOMASS PRODUCTION T/HA
Cereal rapido	133,3	25,0%	16,2
Cereal silo	155,0	45,7%	21,5
Cereal silo Plus	190,0	42,5%	18,8
Spongebob	136,7	36,4%	10,6
Average	148,0	35,3%	13,7

(source: Agricola 2000 tests)

PERCENTAGE COMPOSITION OF DIFFERENT FORAGE MIXTURES

MIXTURE	GRAMINACEOUS									LEGUMINOUS					
	WHITE OATS	BLACK OATS	RED OATS	BRISTLE OATS	RYEGRASS	RYE	WHEAT	SPELT	TRITICALE	FORAGE PEA	PEA	VECTH	CRIMSON CLOVER	SQUARROSE CLOVER	BERSEEM CLOVER
MARTE EFA	45									10	25	20			
TRITICHELO									40	30	30				
SPECIAL FIENO	41			20	35									4	
SUPER FIVE	20		10	10	29							15		6	10
GENIUS DEL SUD	25	10	10		30								20		5
PONTINO		20			45	15		20							
SPONGEBOB					15		40	27				18			
GREEN METHAN					15	32		53							
CEREAL SILO	30						40	30							
CEREAL RAPIDO	30						40	30							
CEREAL SILO PLUS	25						35	10	30						
FIENO SPELTA	20				15		45	20							
NUTRI FIBRA	45	15			40										
PADANA 70					30								70		

MIXTURE	CYCLE	USE	DISTINCTIVE FEATURES	SOWING PERIOD	SOWING RATE (KG/HA)
MARTE EFA 	Early	Hay, green forage, green manure	<ul style="list-style-type: none"> High forage quality (14-15% protein) High digestibility 	Autumn/ Spring	140-160
TRITICHELLO 	Medium	Silage, green forage	<ul style="list-style-type: none"> Adaptable and productive Good quality (12-14% protein) 	Autumn/ Spring	215-225
SPECIAL FIENO 	Medium	Hay, green forage	<ul style="list-style-type: none"> High yields and quick drying 	Autumn/ Spring	80-90
SUPER FIVE	Early	Silage, hay	<ul style="list-style-type: none"> Forage with good balance between protein and sugar Excellent fibre digestibility 	Autumn	90-100
GENIUS DEL SUD	Early	Pasture, green forage, hay	<ul style="list-style-type: none"> Multi-functional mix with quick regrowth Suitable for areas with early spring drought 	Autumn	100-110
PONTINO	Medium	Hay, silage	<ul style="list-style-type: none"> Mix of graminaceous crops only, very productive and resistant to lodging Possibility of second cut of ryegrass only 	Autumn	70-80
SPONGEBOB 	Medium-late	Silage	<ul style="list-style-type: none"> Maximum yields in fertile soils Well-balanced forage between protein and sugar and high digestibility 	Autumn	145-150
GREEN METHAN 	Medium-early	Silage	<ul style="list-style-type: none"> Maximises biomass yields in all conditions Harvest directly when triticale milky ripe 	Autumn	145-150
CEREAL SILO 	Medium-late	Silage	<ul style="list-style-type: none"> Formula with special and productive varieties (particularly wheat forage, tall oat varieties) Harvest: direct chopping when triticale and wheat milky-waxy ripe, with pre-wilting when heading 	Autumn	170
CEREAL RAPIDO 	Early	Silage	<ul style="list-style-type: none"> Formula with very early and productive varieties (particularly wheat forage, tall oat varieties) Harvest: direct chopping when triticale and wheat milky-waxy ripe, with pre-wilting whe . 	Autumn/ Spring	170
CEREAL SILO PLUS 	Medium-late	Silage, haylage	<ul style="list-style-type: none"> Great yield potential, due to the performances of the varieties included in the composition. The tall plant Spelt used increase leaf content and digestibility of forage. 	Autumn	170
FIENO SPELTA	Medium	Hay, haylage	<ul style="list-style-type: none"> Special composition to obtain high yield and quality thanks the high leaf content of spelt. The spelt variety included is very resistant to the common leaf diseases and contributes to produce a healthy and palatable forage. 	Autumn	125
NUTRI FIBRA	Medium	Hay, pasture. Silage, green forage	<ul style="list-style-type: none"> Mix of different var of OAT and ryegrass High fibre digestibility levels, sugar content, MFU yield. Possibility to obtain various spring cuts of ryegrass only. 	Autumn/ Spring	75-80
PADANA 70 	Medium	Hay, haylage, winter grazing	<ul style="list-style-type: none"> Higher protein content in hay, compared to pure ryegrass Excellent adaptability and productivity, easy to wilt 	Autumn/ Spring	45-50

MISCUGLI DEL SOLE

mixtures inoculated with rhizobia



- Multifunctional mixtures suitable for winter pasture and spring harvest.
- Formulations rich in leguminous species specifically designed to maximise the quantity and quality of forage in southern environments.
- This range of products offers solutions for all zootechnical uses and for all soils, from calcareous soils rich in texture to acidic soils.

ALL THE MIXTURES ARE ALREADY MIXED WITH RHIZOBIUM ALOSCA®, FOR A MAXIMUM NITROGEN FIXING EFFECT AND AN INCREASE IN SOIL FERTILITY.



PERCENTAGE COMPOSITION OF DIFFERENT FORAGE MIXTURES

MIXTURE	GRAMINACEOUS				LEGUMINOUS													
	WHITE OATS	BLACK OATS	BRISTLE OATS	RYEGRESS	PERSIAN CLOVER	FRENCH HONEYSUCKLE	PURPLE VETCH	CRISMON CLOVER	SQUARROSE CLOVER	BALANSA CLOVER	BERSEEM CLOVER	ARROWLEAF VCLOVER	BURR MEDIC	BARREL MEDIC	STRAND MEDIC	PINK SERRADELLA	MEDICAGO SCUTELLATA	
ALTUFEN ACID				60	5		15	8	4	3		5						
ALTUFEN BASIC				40		25	12		4		6		2	11				
EXTRA BIADA	10	25	21	15			20	5				4						
LESTRUMIX				70	5			10		3	8	4						
WINTER EXPRESS				60	20						10		10					
BASIC PASTURE				30						5	20		20	15			10	

MIXTURE	CYCLE	USE	DISTINCTIVE FEATURES	SOWING PERIOD	SOWING RATE (KG/HA)
ALTUFEN Acid	Early	Winter pasture and hay	<ul style="list-style-type: none"> • Suitable for light and not very fertile soils, optimal pH 5.0-7.5 • Guarantees different spring cuts 	Autumn	40-50
ALTUFEN Basic	Early	Winter pasture and hay	<ul style="list-style-type: none"> • Calcareous and clay or heavy soils, optimal pH 6.5-8.5 • Guarantees different spring cuts 	Autumn	50-60
EXTRABIADA	Early	Silage, pasture, hay	<ul style="list-style-type: none"> • Deep soils from loose to clay • Optimal pH 5.0-7.5 • High production potential in spring cut 	Autumn	100-110
LESTRUMIX	Early	Pasture, hay, bonded hay	<ul style="list-style-type: none"> • Even light and not very fertile soils, optimal pH 5.0-7.5 • Guarantees different spring cuts • Very high quality (digestibility, sugar, protein) 	Autumn/ Spring	40-50
WINTER EXPRESS	Medium-early	Pasture, hay, green forage	<ul style="list-style-type: none"> • Even not very fertile soils, optimal pH 6.5-8.0 • Quick establishment, excellent productivity and quality • Guarantees different spring cuts 	Autumn/ Spring	40-45
BASIC PASTURE	Early	Pasture and spring hay cut	<ul style="list-style-type: none"> • Light and lean as well as heavy soils, optimal pH 7-8.5 • Suitable for intensive grazing (annual medic) • High protein content 	Autumn/ Spring	35-40

MIXTURES FOR PERMANENT GRASSLANDS



THE PADANA SEMENTI RANGE

- Permanent grassland is a complex system that must last a number of years. Therefore it must be chosen carefully based on the environmental conditions of the site in which it will be sowed and used, to guarantee the best result and maximum duration.
- The choice must be made with careful consideration for the plant composition and proportions between the different species.
- Padana Sementi places great attention on the choice of varieties used and their proportions, so as to obtain very productive and efficient grasslands in the various environmental conditions.
- Possibility to provide customised mixtures according to the customer's indications.

PERMANENT GRASSLANDS ARE INCLUDED IN THE DIRECTIVES OF THE NEW CAP FOR CROP DIVERSIFICATION.

PERCENTAGE COMPOSITION OF DIFFERENT PERMANENT GRASSLAND MIXTURES

MIXTURE	GRAMINACEOUS										LEGUMINOUS												
	BROME	COCKSFOOT	TALL FESCUE	MEADOW FESCUE	RED FESCUE	RYEGRASS	PERENNIAL RYEGRASS	HYBRID RYEGRASS	TIMOTHY GRASS	COMMON MEADOWGRASS	COMMON BIRD'S-FOOT-TREFOIL	ALFALFA	BLACK MEDIC	BURR MEDIC	COMMON SAINFOIN	HYBRID CLOVER	RED CLOVER	WHITE CLOVER	BERSEEM CLOVER	PERSIAN CLOVER	BALANSA CLOVER	SUBTERRANEAN CLOVER	
ASCIUTTO PADANA	5	17	20			13	17	5			5	3		5		5	5						
ASCIUTTO BS		12	30			13	10				3			2	3	2	2	5					
IRRIGUO PADANA		12		8		15	15	10	10	5	4				8	8	5						
IRRIGUO BS		9	18	2		25	13	5	8					5	2	5	3	4			1		
PRATO PASCOLO TUSCIA		33	45								12						10						
IRRIGUO SARDEGNA		15				17	20	15									28				5		
PRATO NUOVO		30	35			10	10									15							
GALLURA SUPER																				10	10	80	
PRATO COLLINA		22	23				5				7	30				13							
GRAMINACEE ELETTE	15	25	30	15	12					3													
SPECIALE PASCOLI						65	30									5							
PASCOLO CAVALLI	18	33			22	22			5														
PERCORSO GARA CAVALLI			80			15			5														

MIXTURE	USE	PRODUCTIVITY	PERSISTENCE	PROTEIN CONTENT	ENVIRONMENTAL STRESS RESISTANCE	DISTINCTIVE FEATURES	SOWING PERIOD	SOWING RATE (KG/HA)
ASCIUTTO PADANA	Hay, pasture	Medium/High	High	Medium	Medium/High	<ul style="list-style-type: none"> Selected and productive varieties Balanced forage 	Early Autumn/ Spring	55-60
ASCIUTTO BS	Hay	Medium	High	Medium/Low	Medium/High	<ul style="list-style-type: none"> Great adaptability and hardiness 	Early Autumn/ Spring	55-60
IRRIGUO PADANA	Hay, green forage	High	Medium	Medium/High	Medium/Low	<ul style="list-style-type: none"> Selected and productive varieties 	Early Autumn/ Spring	55-60
IRRIGUO BS	Hay, green forage, overseeding	High	Medium/Low	Medium/High	Medium/Low	<ul style="list-style-type: none"> Quick establishment Balanced forage 	Early Autumn/ Spring	55-60
PRATO PASCOLO TUSCIA	Hay, pasture	Medium	High	Medium	Medium/High	<ul style="list-style-type: none"> Slow establishment, but long duration Suitable for acidic soils 	Early Autumn/ Spring	50-55
IRRIGUO SARDEGNA	Hay, pasture	Medium/High	Medium/Low	Medium/High	Medium/Low	<ul style="list-style-type: none"> Excellent quality and production potential 	Autumn/ Spring	30-35
PRATO NUOVO 	Hay, pasture	Medium/High	Medium/High	Medium	Medium/High	<ul style="list-style-type: none"> Universal grassland 	Early Autumn/ Spring	60-65
GALLURA SUPER 	Sheep pasture	Medium	Medium	High	High	<ul style="list-style-type: none"> Leguminous 	Selfreseeding Autumn	40
PRATO COLLINA	Hay, green forage	Medium/High	High	High	Medium/High	<ul style="list-style-type: none"> High quality hay 	Early Autumn/ Spring	45-50
GRAMINACEE ELETTE	Hay, pasture	Medium/High	Medium/High	Medium/Low	High	<ul style="list-style-type: none"> Great nitrogen use efficiency Also excellent for horses 	Early Autumn/ Spring	30-40
SPECIALE PASCOLI	Hay, pasture, overseeding	Medium/High	Medium	Medium/High	Medium/Low	<ul style="list-style-type: none"> Great resistance to cold Quick establishment 	Early Autumn/ Spring	50-55
PASCOLO CAVALLI	Hay, pasture	Medium/High	Medium/High	Medium/Low	High	<ul style="list-style-type: none"> Withstands trampling and bare pasture Balance of structured and digestible fibres 	Early Autumn/ Spring	50
PERCORSO GARA CAVALLI	Grassing	Low	Medium/High	High	High	<ul style="list-style-type: none"> Low growth variety Excellent aesthetic effect Not suitable for pasture 	Autunnale/ Primaveraile	90-100



INTER-ROW GRASSING FOR THE MULTIFUNCTIONAL MANAGEMENT OF THE TERRITORY

The concept of multifunctional land management starts from the idea of making modern and productive agriculture coexist with a lively and balanced environment. This is made possible by the use of suitable plant coverings which, combined with income crops or used in marginal areas, can provide numerous services to the agricultural ecosystem, increasing its sustainability and balance. The grass coverings proposed below are all specific tools for achieving these purposes.

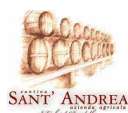
1. GRASSING FOR TREE CROPS

- Sowing appropriate species in the space between rows of tree crops (vines, fruit trees, olive trees, etc.) is becoming an increasingly common choice with widely demonstrated agronomic and environmental advantages.
- Padana Sementi has designed a grassing program to fulfil the most common agronomic requirements in the different climatic areas: continental and Mediterranean.
- The company is also available for consultancy on the formulation of customised solutions.

BENEFITS OF GRASSING BETWEEN ROWS OF TREE CROPS

- Reduction of soil erosion caused by water and wind.
- Improvement in soil structure (better water permeability, better root aeration).
- Better soil supporting ability (facilitates human and vehicle transit in adverse conditions).
- Increase in soil fertility (better organic substance, increase in soil organisms, better root development).
- More biodiversity (activity of useful organisms for crops: pollinators, parasite predators, etc.).
- Buffer effect against chemical products used (fertilisers, plant protection products).
- Reduced use of pesticides (according to the National Action Plan).
- Improvement in the aesthetic effect and landscape.

Many leading companies have successfully used our grassing mixtures. Among these:



SOTTOFRUTTETO

FEATURES

Use: Grassing for orchards and vineyards. In the south, only in places where there are no excessive summer competition problems.

- **Establishment speed:** medium
- **Persistence:** medium-high
- **Stress resistance:** medium -high
- **Summer competition:** medium -high

Distinctive features:

- Special varieties with reduced plant development with good coverage and weed control.
- Competes less with orchard compared to spontaneous grasses.
- Excellent supporting ability and resistance to trampling and shading.

PERIOD

autumn or early spring

SOWING RATE

80-100 kg/ha

AUTORISEMINANTI



FEATURES

Use: Grassing for orchards and vineyards in Mediterranean areas.

- **Establishment speed:** medium
- **Persistence:** medium
- **Stress resistance:** medium - high
- **Summer competition:** none

Distinctive features:

- Also suitable for lean soils from sub-acidic to alkaline (pH 6-8).
- Mixture of self-reseeding leguminous crops, very adaptable.
- Respects the grassland during flowering to allow reseeding and autumn regeneration
- No summer competition and formation of a layer of mulch that stops weeds in hot months.
- Improves soil fertility and attracts useful insects.

PERIOD

autumn

SOWING RATE

30-35 kg/ha

SOTTOVIGNETO

FEATURES

Use: Grassing for orchards and vineyards.

- **Establishment speed:** fast
- **Persistence:** medium
- **Stress resistance:** medium
- **Summer competition:** medium - low

Distinctive features:

- Variety with reduced plant development and reduced competition.
- Good resistance to vehicle traffic.
- Limits the development of weeds and requires few cuts.

PERIOD

autumn or early spring

SOWING RATE

80-100 kg/ha

MORDENTE



FEATURES

Use: Grassing for tree crops.

- **Establishment speed:** medium-high
- **Persistence:** high
- **Stress resistance:** high
- **Summer competition:** medium

Distinctive features:

- Mix composed of varieties with high technical performance. In particular, it includes a special variety of creeping ryegrass that stands out because, unlike normal perennial ryegrass, it has the capacity for vegetative propagation via its horizontally-growing stems.
- The marked vegetative activity allows maximum grass coverage of the soil as well as its stabilization.
- Very low vertical growth with consequent reduced need for mowing and maintenance.
- Maximum treading resistance and load-bearing capacity towards the transit of vehicles.
- Effective anchoring of the soil and control of surface erosion.

PERIOD

autumn or early spring

SOWING RATE

80-90 kg/ha



INTER-ROW GRASSING FOR THE MULTIFUNCTIONAL MANAGEMENT OF THE TERRITORY

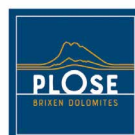
2. GRASSING FOR SKI SLOPES AND MOUNTAIN ENVIRONMENTS

The compositions are specifically designed for grassing ski slopes, with a balanced ratio between graminaceous and leguminous species that promotes the evolution of the grassing and the renaturalisation of the grassy area. Graminaceous crops give the mixture quick establishment properties and a fast erosion containment effect, whereas the presence of leguminous crops is fundamental to balance the grassland and promote the improvement of soil with poor nutritional elements. Padana Sementi is also able to customise the mixtures according to customer indications, also adding some spontaneous species with high natural value.

Some important steps must be taken when using these mixtures:

- Sowing period: preferably straight after the snow has melted. For autumn sowing, especially at higher altitudes, the risk factors are higher: therefore it is recommended to sow in late autumn (dormant seeding) so as to promote the germination of the seeds after thawing.
- Preparing the soil: it is recommended to use organic fertilizers, which can be available for plants long term due to their slow release.
- At the end of the season, grazing or chopping is recommended to keep the grassland compact and strong.

Many leading companies have successfully used our grassing mixtures. Among these:



SKI 1000

FEATURES

Use: Grassing ski slopes and environmental clean-ups at not high altitudes.

- **Establishment speed:** medium
- **Persistence:** medium -high
- **Stress resistance:** medium -high
- **Adaptability:** high

Distinctive features:

- Mixture for grassing areas from 800 to 1000 m a.s.l. (within the trees limit altitude).
- Well balanced grass/leguminous species ratio, to enable the natural ecological succession.
- Persistent species, with well developed roots and quick establishment.
- Good action against soil erosion.

PERIOD

autumn or early spring

SOWING RATE

200-250 kg/ha (recommended rate for hydroseeding).

SKI 2000

FEATURES

Use: Grassing ski slopes and environmental clean-ups at high altitudes (beyond the trees limit altitude).

- **Establishment speed:** medium
- **Persistence:** medium -high
- **Stress resistance:** high
- **Adaptability:** medium

Distinctive features:

- Mixture suitable for use in difficult and limiting conditions from a pedological, climatic and altimetric point of view.

PERIOD

autumn or early spring

SOWING RATE

200-250 kg/ha (recommended rate for hydroseeding).



INTER-ROW GRASSING FOR THE MULTIFUNCTIONAL MANAGEMENT OF THE TERRITORY

3. ENVIRONMENTAL RENATURALIZATION

- The composition should be personalised for each area: Padana Sementi is also able to offer consultancy and customised solutions in this area.
- The formulations must guarantee quick establishment and coverage in difficult conditions, without blocking the growth of local species (this is obtained with the careful choice of species and percentages).
- Possibility to add spontaneous species with high ecological value in low percentages.

SCARPATE QUOTA 1000

FEATURES

Use: Grassing slopes and environmental renaturalization.

- **Establishment speed:** medium-fast
- **Persistence:** medium
- **Stress resistance:** medium
- **Adaptability:** medium-high

Distinctive features:

- Mixture for grassing from the plain to 800/1000 m a.s.l. .
- Balanced and sufficiently complex formula. Good establishment ability in poor soils.
- Good drought and heat tolerance during summer.
- It is multifunctional as, where possible, it provides various cuts of good quality forage in one year.
- Quick establishment and good protection against soil erosion.

PERIOD

autumn or early spring

SOWING RATE

200-250 kg/ha (recommended rate for hydroseeding).

GRASSLAND	GRAMINACEOUS								LEGUMINOUS							OTHERS		
	BROME	COCKSFOOT	TALL FESCUE	RED FESCUE	MEADOW FESCUE	RYEGRASS	PERENNIAL RYGRASS	TIMOTHY GRASS	COMMON MEADOWGRASS	COMMON SAINFOIN	HYBRID CLOVER	RED CLOVER	WHITE CLOVER	SUBTERRANEAN CLOVER	COMMON VETCH	HAIRY VETCH	BURR MEDIC	* MIX OF SPONTANEOUS FLOWERS
SOTTOFRUTTETO			55				35		10									
SOTTOVIGNETO				38			45		10				7					
LEG. AUTORISEMINANTI													80				20	
SKI 1000		5	14	15	6		16	9	3	11	4	5	2			5		5
SKI 2000		5		25			23	30	3		8		3					3
SCARPATE QUOTA 1000	5	10	18	13	5	12	15	7		5	4	4	2		5			

*Achillea millefolium, Buphthalmum salicifolium, Centaurea jacea, Cichorium intybus, Daucus carota, Dianthus barbatus, Galium verum, Leucanthemum vulgare, Salvia pratensis, Sanguisorba minor, Securigera varia, Silene flos-cuculi, Silene vulgaris
The spontaneous species content is calculated to provide a final investment of 500 seeds/m2.

PADANA SEMENTI reserves the right to make variations to the compositions of the mixtures, whenever it deems appropriate for improvement purposes or variety innovation.



INTER-ROW GRASSING FOR THE MULTIFUNCTIONAL MANAGEMENT OF THE TERRITORY

4. MIXTURES FOR BIODIVERSITY

Mixtures that are characterized by the high presence of spontaneous species, with the aim of having different and lasting flowering throughout the seasons. The great added value of wild species in these mixtures lies in their extreme rusticity and very low maintenance demand and natural propagation capacity over the years, making the process of renaturalization of a site more rapid.

USES

- Buffer strips in agricultural areas at the edges of the main crops.
- Ecological corridors in the agricultural field for sheltering useful insects and beekeeping.
- Grassing for natural areas.
- Recovery of marginal and degraded areas, with minimal maintenance.
- Grassing of tourist/landscaping interest (farmhouses, educational farms, golf courses, gardens).

MANAGEMENT

- The optimal sowing is done in late summer on a well-prepared soil, followed by rolling. Spring sowing is also possible.

- Important starting from a clean and weed-free seedbed (recommended the practice of false-sowing).
- The fastest growing species accompany and protect the slowest wild species to develop. Perennial plants flowering can be fully appreciated starting from the second year after sowing.
- The correct mowing management, to be carried out in spring and autumn after the main flowerings, allows to keep the meadow cleaned from aggressive weeds.
- The lawn does not need fertilization (wild species are disadvantaged in an overly fertile soil).
- Irrigation can be useful during establishment, especially with spring sowing, after that it is not more necessary.

FASCE TAMPONE FIORITE

FEATURES

- Mixture containing 19 spontaneous perennial flowering species and 3 annuals species.
- It is indicated for the establishment of ecological corridors at the edge of the crops (herbaceous, horticultural, orchards): the purpose is to accommodate useful insects and pollinators that assure the productivity of crops both in traditional and in organic farming.

USE

Apiculture, increased biodiversity in agricultural environments, environmental recovery in natural areas.

SOWING PERIOD

Autumn or early spring

SOWING RATE

40-45 kg/ha, equal to 4-4.5 g/m².

SPECIE	%
F. rubra	39
Lolium perenne	8
Poa pratense	4
F. ovina	9
F. arundinacea	7
T. pratense	5
Common sainfoin	19,6
Common bird's foot trefoil	3
MIX OF SPONTANEOUS FLOWERS*:	5,4
Achillea millefolium, Anthemis arvensis, Betonica officinalis, Buphthalmum salicifolium, Campanula glomerata, Centaurea cyanus, Centaurea jacea, Centaurium erythraea, Cichorium intybus, Daucus carota, Galium verum, Holcus lanatus, Hypericum perforatum, Hypochaeris radicata, Leucanthemum vulgare, Malva sylvestris, Papaver rhoeas, Linaria vulgaris, Salvia pratensis, Sanguisorba minor, Scabiosa triandra, Securigera varia, Silene flos-cuculi, Silene vulgaris.	

* The spontaneous species content is calculated to provide a final investment of 1000 seeds/m².

PADANA SEMENTI reserves the right to make variations to the composition of the mixtures, whenever it deems appropriate for improvement purposes or variety innovation.

PRATO FIORITO

FEATURES

- Mixture containing 25 spontaneous perennial flowering species and 3 annuals species.
- Formula designed to enhance marginal areas with very low maintenance for ornamental and landscaping purposes.
- Indicated to obtain the most natural lawn effect from the rich and varied flowering.
- Unbeatable rusticity and ecological value, coupled with an attractive aesthetic result.
- Important to follow the above-mentioned management tips.

USE

Areas of tourist/landscaping interest: farms, educational farms, urban areas, golf courses, beekeeping.

SOWING PERIOD

Autumn or early spring

SOWING RATE

40-45 kg/ha, equivalent to 4-4.5 g/m²

SPECIE	%
F. rubra	29
Lolium perenne	8
Poa pratense	4
F. ovina	15
T. pratense	5
Common sainfoin	18
Common bird's foot trefoil	3
MIX OF SPONTANEOUS FLOWERS*:	18
Achillea millefolium, Anthemis arvensis, Anthoxantum odoratum, Anthyllis vulneraria, Betonica officinalis, Brachypodium rupestre, Briza media, Bromopsis erecta, Buphthalmum salicifolium, Campanula glomerata, Centaurea cyanus, Centaurea jacea, Centaurium erythraea, Cichorium intybus, Daucus carota, Filipendula vulgaris, Galium verum, Holcus lanatus, Hypericum perforatum, Hypochaeris radicata, Leucanthemum vulgare, Papaver rhoeas, Salvia pratensis, Sanguisorba minor, Scabiosa triandra, Securigera varia, Silene flos-cuculi, Thymus pulegioides, Trifolium rubens	

* The spontaneous species content is calculated to provide a final investment of 2000 seeds/m².

PADANA SEMENTI reserves the right to make variations to the composition of the mixtures, whenever it deems appropriate for improvement purposes or variety innovation.

APIS MELLIFERA



FEATURES

- Balanced association of essences and varieties with an annual cycle.
- It allows to obtain scalar blooms for several months to guarantee food and shelter for pollinators and beneficial insects.
- Wide adaptability to soils and climatic zones.
- The varieties added help to improve the soil and the mix can be used at the end of the cycle as green manure to increase its fertility.

USE

Beekeeping, increase in biodiversity in agricultural environments, environmental restoration in natural areas.

PERIOD

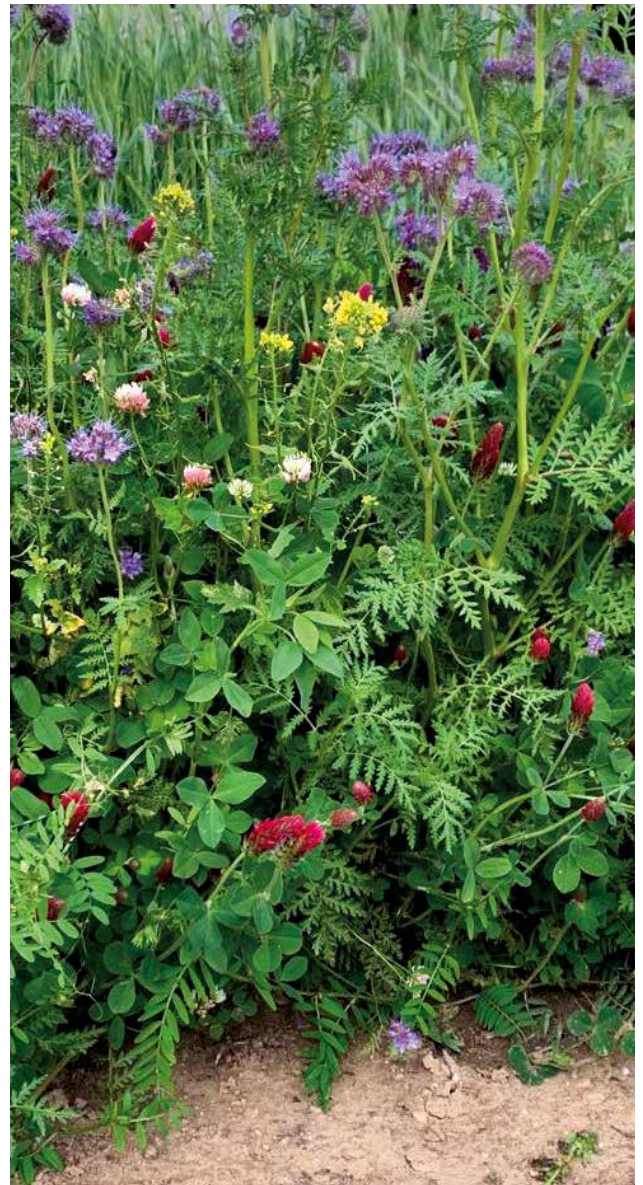
- Autumn throughout Italy, except mountainous areas with severe winters;
- Spring throughout Italy

SOWING RATE

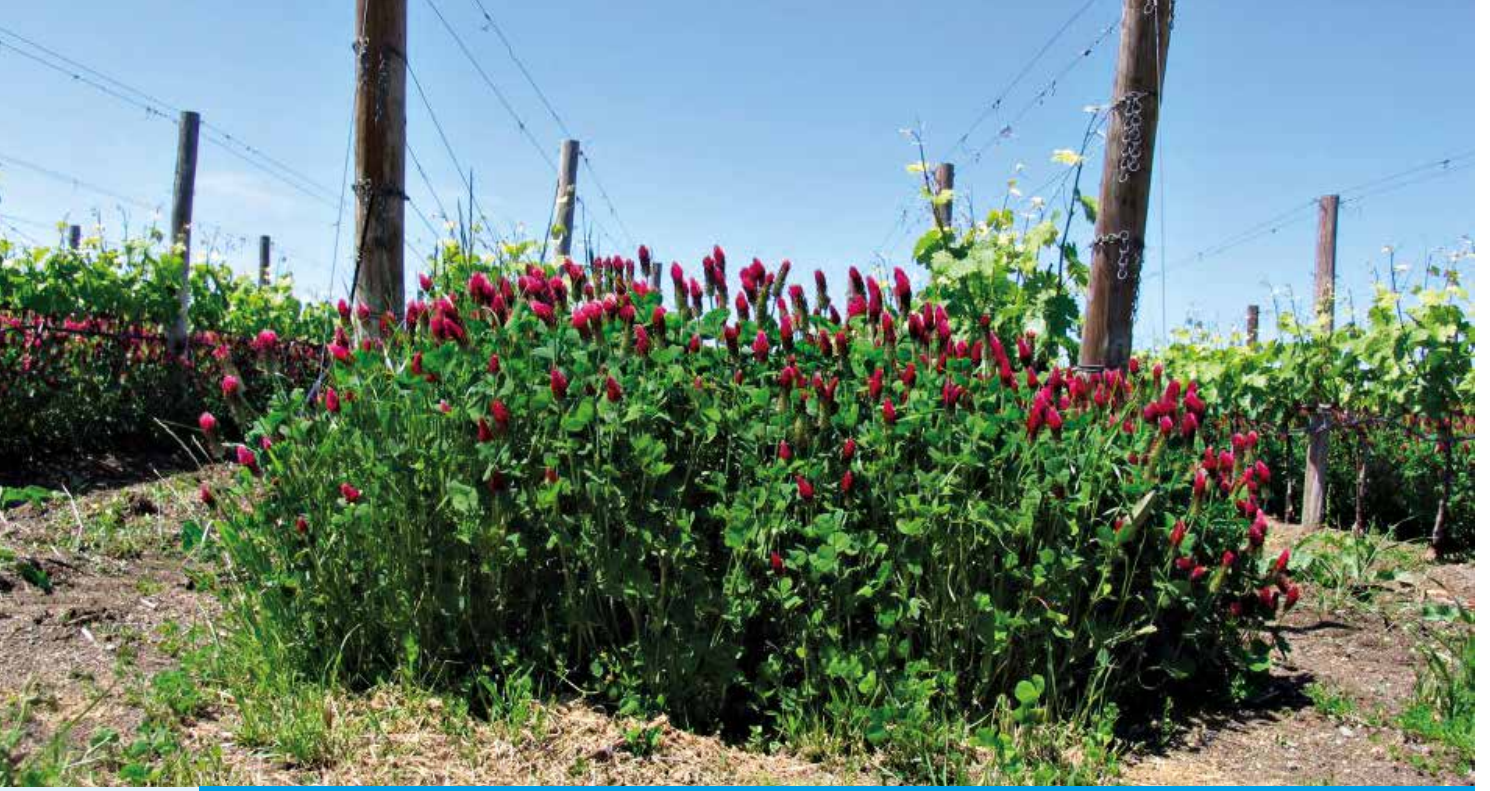
25-30 kg/ha

COMPOSITION

- Phacelia
- Melilot
- Horseradish
- Mustard
- Crimson clover
- Balansa clover
- Hairy vetch
- Shelled sainfoin
- Berseem clover
- Persian clover
- Wild fennel







COVER CROP

In modern agriculture, which is attentive to environmental issues, the term Cover Crop means the planting of a herbaceous crop with the main aim of protecting the soil. The practice aims to:

- **FIGHT EROSION**
- **LIMIT COMPACTING AND LOSS OF STRUCTURE OF THE SOIL**
- **STOP NUTRIENT LEACHING**
- **INCREASE NUTRIENTS (NITROGEN FIXING)**
- **LIMIT THE DEVELOPMENT OF WEEDS**
- **INCREASE ORGANIC SUBSTANCE**
- **INCREASE THE BIOLOGICAL ACTIVITY OF THE SOIL**

- The Cover Crop is generally left on the soil or buried (green manure). Green manure, in particular, based on the species used, enriches the soil with nitrogen and organic substance (humus), or enables an allelopathic and biocidal effect against nematodes and fungal diseases.
- The benefits of cover crops, while not providing an immediate revenue, fully pay back the costs disbursed by the farm, both in terms of better production levels and lower costs for the subsequent crop. In the long term the benefit of this practice is expressed in the increased soil fertility.
- Cover crops are included in “conservative agriculture” practices supported by the European Union, so as to make immediate use of the direct help provided as part of regional subsidies.

Padana Sementi, looking towards sustainable agriculture, has been studying and experimenting for years with mixtures suitable for this practice in the different crop and environmental systems. The result of this commitment is the range of products which are divided into groups due to the various objectives:

- 1. NITROGEN ENRICHING CROPS**
- 2. CROPS WITH BIOCIDAL ACTIVITY**
- 3. CROPS FOR INCREASING STABLE HUMUS AND IMPROVING THE SOIL STRUCTURE**



1. NITROGEN ENRICHING CROPS

Leguminous crops, by means of root symbiosis with nitrogen fixing bacteria (rhizobia), can convert atmospheric nitrogen into organic nitrogen, permanently enriching the soil with this fundamental nutritional element. The biomass produced is also marked by its low C/N ratio, and rapid degradability in the soil.

SPECIES	VARIETY	CHARACTERISTICS	Sowing Rate
CRIMSON CLOVER	Alberobello, Pier	Spring autumn crop, usable throughout Italy. Very resistant to winter temperatures, abundant Spring flowering.	25-30 kg/ha
COMMON VETCH	Pietranera, Alexandros	Autumn-spring leguminous plant with the greatest nitrogen-fixing ability.	70-90 kg/ha
HAIRY VETCH	Villana, Haymaker	Very resistant in all conditions.	40 kg/ha
LUPINE		Species suitable for poorer and more acidic soils in the Centre-South of Italy.	60 kg/ha
BERSEEM CLOVER	Leila, Mario	Can be used in Central-Southern Italy with autumn sowing and spring planting at the beginning of flowering, in the North with spring sowing.	20-25 kg/ha
MINOR FAVA BEAN	Prothabon, Solon	Autumn-spring crop particularly suitable for Central-Southern Italy. It has a very deep root system and a high nitrogen-fixing ability.	180 kg/ha
COWPEA	Red Caloona	Summer leguminous plant, highly resistant to heat and water stress. It is used in the open field or in a greenhouse in summer. Rapid growth.	25-30 kg/ha
CROTALARIA JUNCEA		Very fast-growing summer leguminous plant: in less than 60 days it can grow to 1 m.	25 kg/ha
NITROFERT	Mix	Formulated with early and carefully-balanced varieties of oats, sativa vetch and hairy vetch: the safest choice for an optimal result of coverage and soil enrichment.	75-100 kg/ha
NITROFERT GELIVO	Mix	Mix Recommended in Central-Northern Italy when you are looking for a freeze-resistant cover for soil enrichment in conservative agriculture. Sow from late August to mid-September to obtain optimal development before winter.	50 kg/ha
NITROSUMMER	Mix	Mix of summer leguminous plants and buckwheat suitable for summer green manuring in rotation with winter and horticultural grains. Fast growing, resistant to high temperatures and drought (excellent in greenhouses). Good nitrogen supply with optimal C/N ratio.	25 kg/ha





BRISTLE OAT

BRISTLE OAT

Excellent green manure species with nematocide activity against *Pratylenchus*, and ability to reduce nutrient losses (catch crop).

SOWING PERIOD

from October to December.

SOWING RATE

70 kg/ha

VARIETY

- SAIA 6.
- IPAR 61.

2. CROPS WITH BIOCIDAL ACTIVITY

Nematodes and fungal diseases of the soil are a problem that can be easily solved without using harmful chemical products, but by exploiting the natural properties of some cultivated species.

NEMATODE RESISTANT OIL SEED RADISH



RAFANUS SATIVUS OLEIFORMIS

FEATURES

- The varieties selected to contain nematodes work as they act as plant traps that attract these parasites to become established in their roots, but do not let them complete their life cycle.
- Species with a short cycle: in about 60 days they can flower.
- Very developed taproot system, with dual nematocidal and soil decompacting effect. Excellent coverage and weed composing effect.
- Good resistance to cold, can be sowed in autumn in northern Italy too.

SOWING RATE

20-25 kg/ha

VARIETY	CHARACTERISTICS
ANACONDA	<ul style="list-style-type: none"> • Variety marked by the dual resistance to <i>Meloidogyne chitwoodi</i>, <i>M. fallax</i> and <i>Heterodera schachtii</i>. • Very quick establishment and regrowing ability which, when possible, allows a cut to be performed leaving the regrowth to flower to further increase the nematocidal action.
ADIOS	<ul style="list-style-type: none"> • Variety with very quick establishment. • The variety is resistant to the nematodes <i>Heterodera schachtii</i> and <i>H. betae</i>. Partially resistant to the nematode <i>Meloidogyne chitwoodii</i>. • Over 90% reduction of the infestation of these parasites is possible.
ORCA	<ul style="list-style-type: none"> • Variety that combines rapid growth and medium-late flowering, allowing high-biomass yields. • Very high percentage of leaves in the biomass and large covering capacity. • Resistant to nematodes of the genus <i>Heterodera</i> (<i>H. betae</i>, <i>H. schachtii</i>, <i>H. trifolii</i>, <i>H. avenae</i>).
TERRANOVA	<ul style="list-style-type: none"> • Covers the soil quickly and has an excellent resistance to lodging. • It has a wide resistance spectrum and consequent nematocidal effect: it is resistant to the sugar beet nematodes <i>Heterodera schachtii</i> and <i>H. betae</i>. It is also resistant to <i>Meloidogyne chitwoodii</i>, <i>M. fallax</i> and <i>M. incognita</i>, <i>Pratylenchus scripnerie</i>, <i>Paratrichodorus allius</i>, <i>Trichodorus primitivus</i>.
OCTOPUS	<ul style="list-style-type: none"> • Average cycle variety with expanded leaves that ensure rapid soil coverage and competition against weeds. • The rooting depth associated with high biomass production makes it a very effective catch crop for nitrogen recovery.
FINAL	<ul style="list-style-type: none"> • It is the most susceptible variety to winter frost, and is therefore an excellent solution when looking for a crop that after winter doesn't need any additional pass to kill the crop. • Very high resistance to beet • Cyst nematodes: <i>Heterodera schachtii</i> and <i>H. betae</i>
DOUBLET	 <ul style="list-style-type: none"> • Medium-sized plant, but good as cover crop. • Regrowth is quick if cut • Very deep root system • High resistance to cold temperatures • Double resistance to the genera <i>Heterodera</i> and <i>Meloidogyne</i> • Particularly resistant to <i>H. schachtii</i> and <i>H. betae</i> • Effective against <i>Meloidogyne chitwoodii</i>, <i>M. fallax</i>, <i>M. naasi</i>, good activity against <i>M. incognita</i> and <i>M. javanica</i> • Good fumigant activity
ROMESA	 <ul style="list-style-type: none"> • Early cycle variety with rapid soil covering and large biomass development • Particularly suitable as cover crop and for soil decompaction (deep roots), as catch crop and as green manure • Medium resistance to the cyst nematode <i>Heterodera schachtii</i>

WHITE MUSTARD

SINAPIS ALBA

FEATURES

- The species is naturally susceptible to nematodes. Genetic improvement has created varieties that are absolutely resistant to these parasites, therefore the nematocidal effect is comparable with horseradish.
- Very developed taproot that can reach 1.5 m depth.
- Very quick life cycles (50-55 days to flowering in spring).
- Mustard is susceptible to winter frost therefore it should be sowed in spring-summer in the north, but can be sowed in autumn in areas with mild winters.

SOWING RATE

20-25 kg/ha


VARIETY	CHARACTERISTICS
ATTACK	<ul style="list-style-type: none">• Tall plant, quick establishment and soil coverage.• Resistant to the sugar beet nematodes <i>H. schachtii</i> and <i>H. betae</i>. Does not host (reduces the spread of) the following nematodes: <i>Globodera rostochiensis/pallida</i>, <i>Heterodera avenae</i>, <i>Heterodera trifolii</i>, <i>Heterodera goettingiana</i>, <i>Meloidogyne naasi</i>, <i>Ditylenchus destructor</i>.
ARCHITECT	<p>A late cycle variety that has marked activity against the sugar beet nematodes <i>Heterodera schachtii</i> and <i>H. betae</i>.</p> <ul style="list-style-type: none">• Average sized plant with good soil coverage and good resistance to lodging.• Shows excellent resistance to the main diseases
SIGNAL	<ul style="list-style-type: none">• Suitable for use as a cover of soil and green manure.• Good resistance to winter frozen with late sowing (mid-October/November).• Excellent grain producer.• Low nematocidal activity.
OCTOPUS	<ul style="list-style-type: none">• Variety that stands out for its high branching capacity.• Very frost susceptible with early sowing (August-beginning of September).• It is a good option as catch crop to prevent nitrogen leaching.• The variety has no nematicidal effect.
BOROWSKA	<p>Plant with rapid vegetative development and biomass production.</p> <ul style="list-style-type: none">• Suitable for use as cover crop and green manure.• Resists winter frosts well if sown late (mid-October, November).• Excellent grain producer.• Low nematicide activity.

NEMATICIDE ROCKET

ERUCA SATIVA

FEATURES

This species which is very well known as a vegetable for eating, thanks to some carefully selected varieties, can guarantee excellent effects both as a nematocide crop and as a biofumigant. It can be sowed all year round.

VARIETY	CHARACTERISTICS
TIARA 	<ul style="list-style-type: none">• Dual use: vegetable for food use and biocidal essence.• Excellent development and moderate green mass production.• Ideal mixing partner for fodder radish in a green manure crop that focuses on nematode control.• Suitable as a bio-fumigation crop thanks to its high content of glucosinolates.• Very short cycle (about 50 days from emergence to flowering).• Variety characterised by double resistance against both beet cyst nematodes <i>Heterodera schachtii</i> and <i>H. betae</i>, and against the root-knot nematodes <i>Meloidogyne chitwoodii</i>, <i>M. fallax</i>, <i>M. javanica</i> and <i>M. unknown</i>. <p>CYCLE 55-60 days from sowing to flowering.</p> <p>DOSE DI SEMINA 10 kg/ha.</p>

NEMATOX

FEATURES

- Mixture composed of special cultivar of oil seed radish and rocket lettuce.
- The best solution for horticultural rotation. Ensure the best control against nematodes *Meloidogyne chitwoodii*, *M. fallax*, *M. incognita*, *M. javanica* and *Heterodera schachtii*.
- Burying at flowering start (50-55 days with spring sowing). To extend the soil cover and improve the nematicidal effect, mow it before flowering to have a second tiller.

SOWING PERIOD

All year round, from spring to autumn, depending on the cropping system. The rocket lettuce seeds have a special coating that allows to have a great mixing and sowing homogeneity.

SOWING RATE

20 kg/ha

BIOFUMIGATION

There are essentially two types of crops used for biofumigation:

1. **Hybrids of sudanese sorghum:** production of hydrogen cyanide and relative release into the soil after burying the biomass.
2. **Brassicaceae crops** (horseradish, mustard, rocket, etc.): production of glucosinolates that develop isothiocyanate in the soil

For brassica crops, biofumigation takes place by chopping and burying the biomass which allows the glucosinolates contained therein to be transformed into isothiocyanates. These substances have a toxic effect on significant soil fungal diseases.

The **BioFum®** mixtures proposed here represent the maximum biofumigating effect: the varieties included in the mixtures associate a high glucosinolate content with the substantial production of biomass and leaves.

In the greenhouse tests it was shown that these mixtures contain the development of the following fungi:

- Gaeumannomyces,
- Rhizoctonia,
- Fusarium,
- Helminthosporium
- Pythium.



MANAGEMENT

The use of these mixtures involves chopping the crop at 60-80% flowering and then quickly burying within 30 minutes. Immediate burying with a combined machine is ideal. To maximise the fumigating effect it is useful to provide light irrigation after burying (10 mm). The soil can be worked 2 weeks later and after another 2 weeks the next crop can be sowed.

SOWING RATE

15 – 20 kg/ha. The highest rate for heavy soils.

IBRIDI DI SORGO SUDANESE


PRODUCT	CHARACTERISTICS	SOWING RATE
RUZROK 	<ul style="list-style-type: none"> • Variety with marked allelopathic activity, which allows the control of soil pathogens (nematodes, fungi, insects), while at the same time increasing its fertility. • Early plant with rapid initial development. • Good as cover crop. • It can be tilled already after about 35-40 days. 	45-50 kg/ha
SANA TERRA 	<ul style="list-style-type: none"> • Specific formula for summer green manure. • Controls some soil pathogens (Pythium, Rhizoctonia, Fusarium, Sclerotinia present in plant residues and in the soil). • Retrieves nutrients in depth and washed-out nitrogen. • Increases organic matter, reduces soil compaction and increases organic activity. 	30 kg/ha

2. BRASSICACEAE CROPS

PRODUCT	CHARACTERISTICS
BIOFUM SUMMER	<ul style="list-style-type: none"> • Biocidal mixture for spring sowing comprising: Ethiopian mustard, horseradish, white mustard. • Very quick to develop. • The best time for incorporation should not be no later than the end of September. • Sowing period: from March to July . <p>SOWING RATE 15-20 kg/ha.</p>
BIOFUM AUTUMN	<ul style="list-style-type: none"> • High content of sinigrin, that which makes it possible to control many soil pathogens. • Low resistance to frost, especially with early autumn sowing. • The incorporation of this plant in the soil allows to significantly control following fungi in the the soil: Scelrotinia, Pythium, Fusarium, Rhizoctonia. • Sowing period: September, October . <p>SOWING RATE 15-20 kg/ha.</p>
Brassica Juncea var BRONS	<ul style="list-style-type: none"> • High content of sinigrin, that which makes it possible to control many soil pathogens. • Low resistance to frost, especially with early autumn sowing. • The incorporation of this plant in the soil allows to significantly control following fungi in the the soil: Scelrotinia, Pythium, Fusarium, Rhizoctonia. <p>SOWING RATE 8-10 kg/ha</p>
Brassica Carinata var. CARBON	<ul style="list-style-type: none"> • The high content of the glucosinolate sinigrin allows a good biofumigation effect. • The variety produces very large leaf, and has fast growth and soil covering that allow good weed suppression. - The deep and branched root system works well to improve soil structure and to catch phosphorus and nitrogen. • Low resistance to frost, especially with early autumn sowing. <p>SOWING RATE 12-15 kg/ha</p>

3. CROPS FOR INCREASING STABLE HUMUS AND SOIL STRUCTURE

- Crops with a high fibre content and high C/N ratio are used to increase stable humus.
- They do not yield nitrogen and nutrients quickly, but allow the formation of stable humus and improve fertility in the long term (reserve of substances, improvement in physical and biological fertility).
- The species with developed and deep root apparatus allow the porosity of the soil and its water and air permeability to be increased.

PRODUCT	VARIETY	CHARACTERISTICS	SOWING RATE
NEMATODE RESISTANT OIL SEED RADISH	STRUCTURATOR	<ul style="list-style-type: none"> • Fast cycle (about 50-55 days with spring sowing). Special horseradish variety suitable to work in depth compacted soils, blocking also the leaching process. • The unmistakable feature is the extremely developed taproot (see photos) with high penetration ability (50-60 cm depth). • At the end of cultivation, large holes remain into the soil giving an excellent drainage. • Extremely rapid development and expanded leaves ensure a good soil cover and competition against weeds. • Poor activity against nematodes <p>Sowing period: The optimal seeding period for maximum development is in late summer (within mid-September). Early sowing allows to partially finish the cultivation at winter frost, in Northern Italy. However, it can be sown throughout the year</p>	6-8 kg/ha with precision sowing, 9-12 kg/ha with broadcast sowing.
PHACELIA	FACTOTUM  BORATUS	<ul style="list-style-type: none"> • Very hardy species and also adaptable to marginal land. • Well developed root apparatus with great ability to absorb and withhold nutrients (catch crop). • Strong competitive, coverage and containment action against weeds, does not act against nematodes. • Important melliferous plant, due to its abundant and prolonged flowering. • It is sowed in autumn in areas with a mild winter and in spring in cold areas. 	10-15 kg/ha
HUMUSFERT	MIX	<ul style="list-style-type: none"> • Comprising barley, bristle oats and crimson clover, this mixture is used all over Italy with autumn sowing. • Its great productivity, hardiness and precocity make it suitable for all pedoclimatic situations. • Suitable for being chopped and buried, or for being rolled or cut and left as mulch (e.g. in between rows of tree crops). <p>Sowing period: from October to November.</p>	85 kg/ha
HUMUSFERT KIWI	MIX	<ul style="list-style-type: none"> • Specific mixture for green manure under actinidia (also in mature plants with dense shade), indicated in particularly for Central-Southern Italy. • Provides organic substance and structures the soil. • In the earing phase C / N equal to about 26-28: good yield in long-term humus. • Suitable to be shredded and buried, or to be rolled or mowed and left as vegetable mulch. <p>Sowing period: November, December.</p>	85 kg/ha

ESTA-FERTIMIX	MIX	<ul style="list-style-type: none"> • Summer forage crop comprising: climbing bean, pearl millet and Sudan grass. • Green manure that enriches the soil with organic substance, minerals and nitrogen. Excellent C/N ratio in the biomass produced. • Excellent tolerance to drought at high temperatures, particularly suitable for greenhouse conditions. • Cutting and burying: according to discretion, wait until the millet is at least 100- 120 cm tall (60 days), for good biomass production. <p>Sowing period: Spring, when the soil temperature is at least 16-18 °C.</p>	25-30 kg/ha, at the depth of 3-4 cm
F.P. STRATUS	MIX	<p>Formula suitable for structuring the soil at different depths and recovering the nutrients of the soil. Early cycle with good biomass yield. At the start of earing, C/N ratio of about 20-22 with gradual release of nutrients. Suitable for tired or balanced soils.</p> <p>Uses: inter-row of tree crops, or rotations with spring-summer open field crops.</p> <p>Sowing period: autumn or spring (by March).</p>	60 kg/ha
BRISTLE OAT	SAIA 6 IAPAR 61	<ul style="list-style-type: none"> • excellent resistance to environmental stress. • excellent green manure essence with nematicide activity against the <i>Pratylenchus</i> genus and ability to reduce nutrient washout (Catch Crop). 	70 kg/ha
FORAGE RAPE	STEGO SPARTA	<p>Very leafy species, with deep taproot, excellent as cover crop and as washout blocker, produces easily degradable biomass and is resistant to frost.</p>	10 kg/ha



TURFGRASS

- A significant share of Padana Sementi's business is provided by ornamental lawns, thanks to constant investments in research and innovation in this sector.
- New varieties of lawn seeds with unique characteristics of resistance to disease, treading, drought, or extreme heat as well as winter cold are acquired mainly abroad, mainly from the USA, Denmark, and the Netherlands.
- These varieties are evaluated in our experimental fields, which we have been utilising since 2009 in collaboration with the University of Padua. Through severe agronomic tests, we select the varieties to be included in the different formulas.

OUR SEEDS LINES ...

TOP CLASS E TOP CLASS 4 SOD:

High quality seed mixes specially formulated for professional use and differentiated to meet different needs in the best way possible. All Top Class formulations follow very strict control procedures, and contain the most recent and innovative varieties identified through research.

TOP GREEN

Professional mixes designed to meet the most varied environmental situations and use needs.

NATURAL GARDEN

Mixes of American varieties, tested in Italy, reinforced with mycorrhizae and bio-activators, make the lawn performing and resistant to environmental stress, even in low maintenance, for a more natural and sustainable management of the turf.

TURF GREEN

Blends specifically designed to meet specific requests for products to be used in extensive lawns, public areas and work on large surfaces.

Specific and detailed brochures are available for the different lines.

