Sorghum Portfolio Europe

2022/23

Global Presence

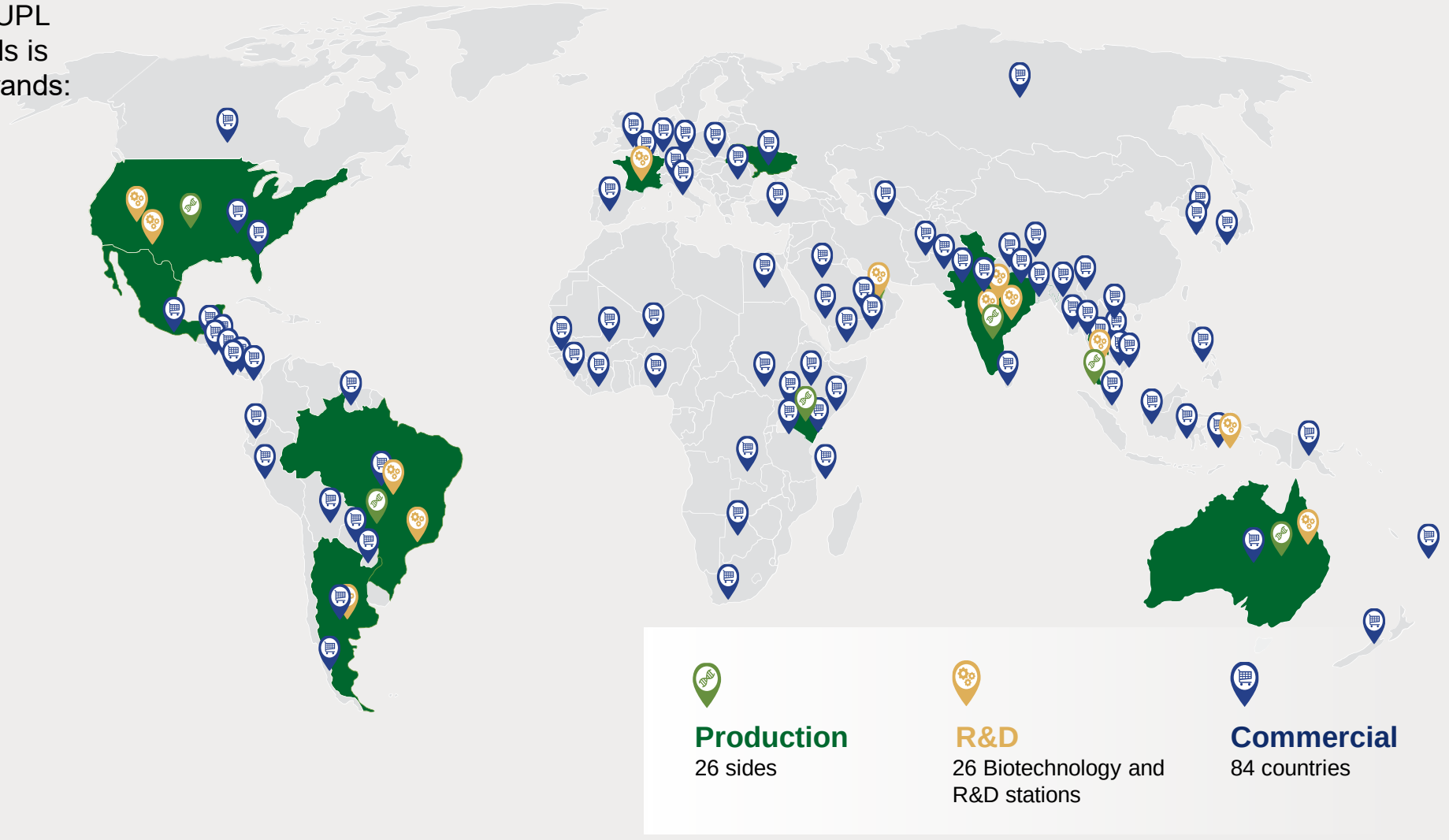
Advanta Seeds is a part of the UPL Group Company. Advanta Seeds is represented by global seeds' brands:

ADVANTA

Alta seeds

Pacific Seeds

PACIFIC SEEDS



Production
26 sides

R&D
26 Biotechnology and R&D stations

Commercial
84 countries

Sustainable agriculture & food security

We are committed to contribute to the **UN Sustainable Development Goals** (SDGs) and Europe's **'From Farm to Fork'** strategy to promote **sustainable agriculture.** Our high-quality seeds and unique technologies allow farmers to grow more and more nutritious food while preserving the environment.

Boosting nutrition

Climate-smart crops

Agrobiodiversity

Partnership for Sustainability

Access to Seeds Foundation

#2 in South and South-east Asia

#4 in Western Central & Eastern and Southern Africa

Leading seed company recognized by Access to Seeds Index 2021 for enhancing productivity of smallholder farmers.

SUSTAINABLE DEVELOPMENT GOALS

World Benchmarking Alliance

Alta seeds®

recognized in the

TOP 20 MOST CLIMATE FRIENDLY COMPANIES OVER 2021

by

europeanseed

Investing in Sorghum - the crop of the future

Nutrition & Food Security

Super food
Sorghum is packed with nutrition, GLUTEN FREE, NON-GMO grain, It is a super food for direct consumption and food production ingredient..

The best animal nutrition
Highly nutritional and highly digestible, promotes healthy animal growth and high milk productivity for diary farms.

High productivity
Sorghum is well performing crop with stable and high productivity of grain and biomass.

Environmental Benefits

Climate-smart & drought tolerant
Our hybrids are drought tolerant and tested for high temperature. Climate-smart abilities allow minimum water and agricultural inputs use.

CO2 & GHG reduction
Due to its high sequestration ability sorghum reduces CO2. The high digestibility reduces the methane production in livestock.

Excellent source of bioenergy/biomaterials
Sorghum, rich in fibre, is used in the production of biofuel, biogas and ethanol. Sorghum is an excellent fibrous raw material to produce industrial pulp.

Ensuring farmers' prosperity despite changing climate conditions

Our global leadership in sorghum technology

igrowth™, the world's first commercial herbicide-tolerant technology for sorghum.

igrowth hybrid sorghum seeds contain a proprietary non-GMO imidazolinone (IMI) tolerance technology, which allows farmers to spray an IMI herbicide for pre- or post-emergence control over broadleaf and grass weeds without causing damage to the crop.

Aphix™ SCA Tolerance, the best-in-class option for combating pressure from sugarcane aphids.

BMR-6 for increased palatability and digestibility, supporting more weight gain and milk production/ha.

Brachytic Dwarf for superior standability and high leaf-to-stalk ratios.

Photoperiod Sensitivity (PS), for a wide harvest window.

Dry Stalk for reduced moisture levels, for earlier baling and storage.

EMPYR Premier Forages are our top-of-the-line, carefully selected hybrids that consistently outperform and outproduce the others in their class in field and in feed.

These forages offer high yield, excellent standability, and strong performance even in extreme environments.

Alta seeds®

Grain Sorghum

BIANCA

Hybrid Description

Maturity	Flowering	Vegetation Period	Grain Color	Tannin	Panicle Size	Panicle Type	Plant height	Productive tillering
Medium	**60-62**	**115-120 days**	**White**	**NONE**	**25-30cm**	**Semi-open**	**75-120cm***	**2,8-3***

Features

- High yielding stable hybrid
- Tolerant to drought
- Tolerant to lodging
- Starch content up to 75%*, which allow to use grain in food industry and for ethanol production
- Protein content ~ 15*
- High tolerance to Anthracnose and Macropodia

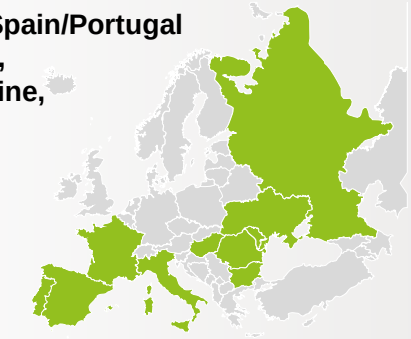
Plant Population

	th/ha
IRRIGATED	220-250
RAINED AREA (>180-200 mm)	160-200
DRY LAND (120-140 mm)	120-160

* Data can vary depends on technology and local environment

Region

France/ Italy /Spain/Portugal CEE countries, Moldova, Ukraine, Russia.



YANKEE

Hybrid Description

Maturity	Flowering	Vegetation Period	Grain Color	Tannin	Panicle Size	Panicle Type	Plant height	Productive tillering
Mid-early	**55-57**	**90-100* days**	**Red (bronze)**	**0.2 %**	**22-27 cm**	**Semi-open**	**90-100cm***	**2,5-2.9***

Features

- Early maturity
- High stability and drought tolerance
- Suitable for cultivation as a “second crop“ in rotation
- Due to low tannin content can be used for food industry (bakery) as a good product for flour.
- Protein content ~ 15*

Plant Population

	th/ha
RAINED AREA (>140-180 mm)	120-160
DRY LAND (100-120 mm)	70*-120

* Data can vary depends on technology and local environment

Region

Ukraine
Russia,

MR ECLIPSE

Hybrid Description

Maturity	Flowering	Vegetation Period	Grain Color	Tannin	Panicle Size	Panicle Type	Plant height	Productive tillering
Medium-Early	**58-65**	**120-125 days**	**Bright Red**	**Up to 0.3%**	**25-32cm**	**Semi-open**	**95-110cm***	**2.5-3.1***

Features

- High-yielding hybrid
- It differs in the increased cold resistance and force of growth at the initial stages of development that gives the chance of early sowing.
- High resistance to lodging
- Macrophomina tolerance – medium/high
- Resistance to millet mosquito MTR 6 * (Midge Tested Rating 6 - resistance 6 times higher than conventional hybrids)
- The hybrid is characterized by "Stay Green" - which helps to withstand adverse conditions and make the most efficient use of available moisture
- Suitable for feeding all types of animals
- Nutrition: Protein ~ 14% & Starch~ 65%

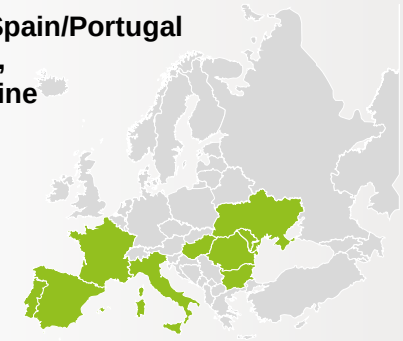
Plant Population

	th/ha
IRRIGATED	220-250
RAINED AREA (>180-200 mm)	160-200
DRY LAND (120-140 mm)	120-160

* Data can vary depends on technology and local environment

Region

France/ Italy /Spain/Portugal
CEE countries,
Moldova, Ukraine



MR BAZLEY

Hybrid Description

Maturity	Flowering	Vegetation Period	Grain Color	Tannin	Panicle Size	Panicle Type	Plant height	Productive tillering
Medium	**60-65**	**115-120 days**	**Red**	**0.3**	**27-30**	**Semi-open**	**100-120 cm***	**2.2-2.8***

Features

- High tolerance to stressful conditions before and after flowering – the most popular hybrid in Australian market
- High drought resistance
- Good cold resistance
- High level of tillering
- Powerful developed root system
- Red grain color
- Suitable for feeding poultry and pigs

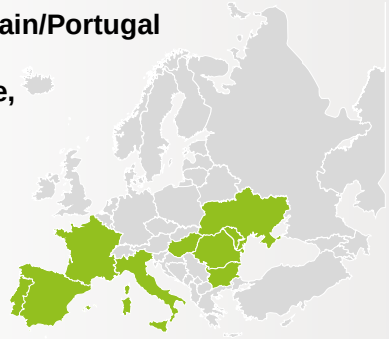
Plant Population

	th/ha
IRRIGATED	220-250
RAINED AREA (>180-200 mm)	160-200
DRY LAND (120-140 mm)	120-160

* Data can vary depends on technology and local environment

Region

France/ Italy / Spain/Portugal
CEE countries,
Moldova, Ukraine,



SENTINEL IG*

Hybrid Description

Maturity	Flowering	Vegetation Period	Grain Color	Tannin	Panicle Size	Panicle Type	Plant height	Productive tillering
Medium	**58-62days**	**110-115 days**	**Red**	**Up to 0.3%**	**23-26cm**	**Semi-open**	**90-105cm***	**Up to 5***

Features

- Suitability for IMI technology
- Adapted to all growing conditions
- Good drought resistance
- Good dry-down
- High tolerance to diseases
- Resistant to lodging
- High tillering rate - 2-3 (up to 5 under intensive growing conditions and favorable weather conditions)
- Protein content ~ 14%

Plant Population

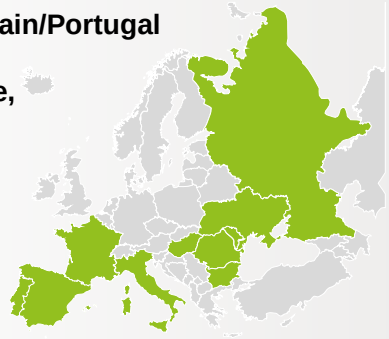
	th/ha
IRRIGATED	200-220
RAINED AREA (>180-200 mm)	150-180
DRY LAND (120-140 mm)	120-140

* Data can vary depends on technology and local environment

* Only use those herbicides which are legally registered with relevant authorities in for use or application on sorghum seeds and/or sorghum seed containing Igrowth™ technology, without causing harm at recommended doses, must be used/applied.

Region

France/ Italy / Spain/Portugal
CEE countries,
Moldova, Ukraine,
Russia



Forage Sorghum

BMR 201MH

Sorghum-sudangrass Hybrid

Description

Maturity	Flowering	Forage Type	Number of cuts	Seed weight (1000 kernels)	Plant Population th/ha (irrigated)	Plant Population th/ha (dryland)
Medium	**60 days**	**Brown Midrib-6**	**2-3 cuts***	**26-30g**	**200-300**	**180-200**

Features

- **Exceptional drought tolerance**
- Excellent re-growth for multiple quality cuts
- Excellent for hay
- Very good for continues grazing
- Good for silage
- **BMR 201MH is usually harvested 40-55 days after seeding (or plant height 70-80 cm)**
  Protein will decline as harvest is delayed, but energy will increase upon heading due to continued sugar formation in the sorghum stalks and leaves, and carbohydrate deposition in the developing grains

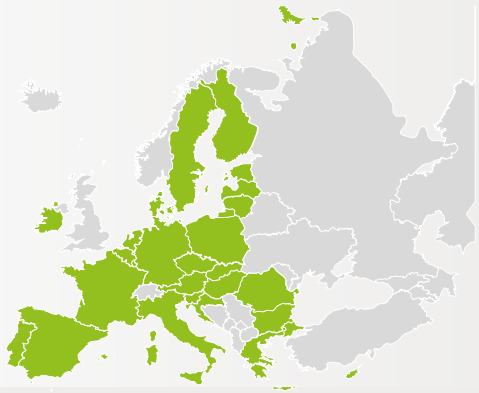
Fodder Quality at boosting stage

	%
ADF	29.65
NDF	51.34
IVTD	80.69
UNDF	19.31
CWD	62.38

* Depends on planting time and local environments

Region

Well adapted for the lower environment in the EU



BMR 333

Sorghum-sudangrass Hybrid

Description

Maturity	Flowering	Forage Type	Number of cuts	Seed weight (1000 kernels)	Plant Population th/ha (irrigated)	Plant Population th/ha(dryland)
Late	**PPS**	**Brown Midrib-6**	**3-4 cuts***	**30-34g**	**200-300**	**180-200**

Features

- **Photoperiod sensitive for extended harvest window**
- Excellent recovery after cutting
- Good tolerance to drought
- Excellent for hay
- Very good for continued for grazing
- Good for silage
- The photoperiod sensitive characteristic of BMR 333 allows for a wide window of harvest and consistent quality in the growing season. BMR 333 remains in a vegetative state when the plant receives at least 12 hours and 20 minutes of daily sunlight, allowing the greatest harvest flexibility. Falling below this threshold, it begins booting
- **BMR 333 is usually harvested 40-70 days after seeding.** Harvest prior to heading to obtain best quality and to prevent leaf loss.

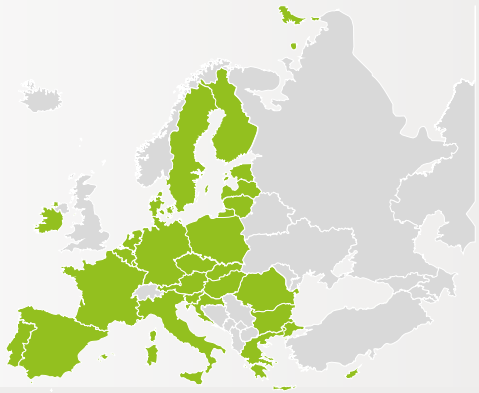
Fodder Quality at Boosting Stage

	%
ADF	28.57
NDF	50.23
IVTD	78.99

* Depends on planting time and local environments

Region

Well adapted for EU



JUMBO STAR

Sorghum-sudangrass Hybrid

Description

Maturity	Flowering	Forage Type	Number of cuts	Seed weight (1000 kernels)	Plant Population th/ha (irrigated)	Plant Population th/ha (dryland)
Late	**PPS**	**Multi-cut**	**3-4 cuts***	**25-29g**	**200-300**	**180-200**

Features

- **Photoperiod sensitive for extended harvest window**
- **Good cold tolerance and vigor**
- **Significant Increase in drought tolerance**
- Fast recovery after cutting
- **Very juicy plants and good tillering**
- **High level of protein content in young plants – up to 20 %**
- Excellent for hay
- Very good for continued for grazing
- Good for silage
- **Jumbo Star is usually harvested 60 days after seeding, or plant height 1 m.** Harvest prior to heading to obtain best quality and to prevent leaf loss

Characteristics

The photoperiod sensitive characteristic of Jumbo Star allows for a wide window of harvest and consistent quality in the growing season. Jumbo Star remains in a vegetative state when the plant receives at least 12 hours and 20 minutes of daily sunlight, allowing the greatest harvest flexibility. Falling below this threshold, it begins booting.

* Depends on planting time and local environments

Region

Well adapted for the EU, Ukraine, Russia and Turkey

NUTRITOP STAR

Sorghum-sudangrass Hybrid

Description

Maturity	Forage Type	Number of cuts	Seed weight (1000 kernels)	Plant Population th/ha (irrigated)	Plant Population th/ha (dryland)
PPS	**Brown Midrib-6**	**3-4 cuts***	**26-30g**	**200-300**	**180-200**

Features

- Well adapted for drought
- **Fast vigor and re-growth, thin stem, high tillering**
- Excellent for hay
- Very good for continued grazing
- Good for silage
- **Photoperiod sensitive for extended harvest window**
- **High level of protein content ~17%**
- **Good solution for feeding at early season**

Characteristics

Nutritop Star can be used for commence grazing at plant height from 60 cm.
Protein will decline as harvest is delayed, but energy will increase upon heading due to continued sugar formation in the sorghum stalks and leaves, and carbohydrate deposition in the developing grains

* Depends on planting time and local environments

Region

Well adapted for EU

SHERKAN

Sorghum-sudangrass Hybrid

Description

Maturity	Flowering	Forage Type	Number of cuts	Seed weight (1000 kernels)	Plant Population th/ha (irrigated)	Plant Population th/ha (dryland)
Medium	**60 days**	**Brown Midrib-6**	**3-4 cuts***	**15-18g**	**200-300**	**180-200**

Features

- **Small-seeded and thin-stemmed**
- **Exceptional forage yield and quality**
- **Excellent heat and drought tolerance**
- **Excellent early season vigor and regrowth**
- Excellent for hay
- Very good for continued grazing
- Good for silage
- **High level of protein content ~17-18 %**
- **Sherkan is usually harvested 45 to 55 days after seeding.** Protein will decline as harvest is delayed, but energy will increase upon heading due to continued sugar formation in the sorghum stalks and leaves, and carbohydrate deposition in the developing grains

Characteristics

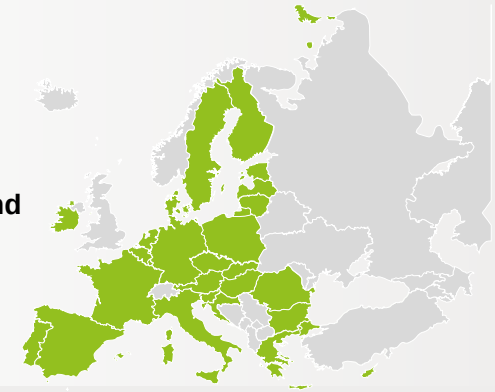
This Hybrid will have fast dry down so it can be used in areas that have trouble putting sorghum sudan up as dry hay.

* Depends on planting time and local environments

Region

Well adapted for the low environment and high latitude of the EU

Excellent tolerance to heath and drought.



NUTRIGRAIN

Silage Sorghum Bicolor

Description

Maturity	Flowering	Forage Type	Plant Height	Tannin	Panicle Type	Tillering
Late	**90 days**	**Brown Midrib-6**	**170-190cm**	**High**	**Semi-open**	**Medium**

Features

- **Low lignin content.**
- **Silage sorghum with grain developing and high yield potential.**
- Produces large volume of highly digestible fiber biomass.
- Harvesting at soft dough grain stage for silage.
- Days to harvest maturity – 140 days
- Optimum DM% for silage ~ 28-32% (medium/high)
- DM yield ~7-8 t/ha (depends on agrotechnology)
- Ethanol producibility – 2500 l/ha
- High tolerance to main disease, lodging, drought
- Adaptable to irrigation

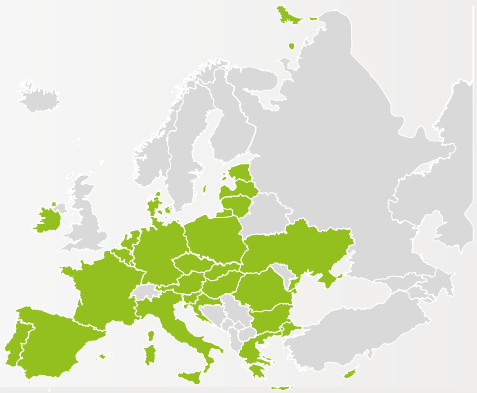
Plant Population th/ha (dryland)	Plant Population th/ha (moderate)	Plant Population th/ha (irrigated)
150-180	**180-220**	**220-240**

Fodder Quality at boosting stage

	%
ADF	26-28
NDF	48-54
Protein (medium/high)	9-10
Lignin (in green mass)	4
Soluble carb (medium/high)	12-14
DM Digestibility (high)	67-70
Sugar	15.5
Ash	10

Region

Well adapted for the EU and Ukraine.



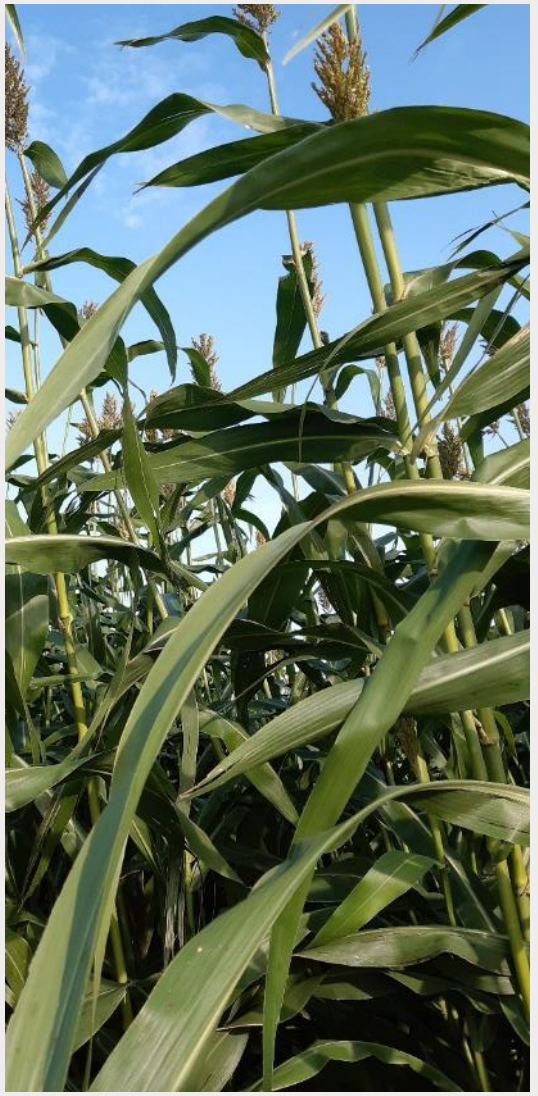
* Depends on planting time and local environments

SUGARGRAZE

Sweet Forage Sorghum Bicolor

Description

Maturity	Flowering	Forage Type	Plant Height	Plant Population th/ha (dryland)	Plant Population th/ha (moderate)	Plant Population th/ha (irrigated)
Medium-late	**70-80 days**	**Sweet sorghum**	**270 - 300 cm**	**150-180**	**180-220**	**220-240**



Features

- Yield 80-100 t/ha of biomass (depends on technology and conditions)
- **The main advantage of the product is the sugar content - 25-27* (30*)%,** which improves the quality and digestibility of feed and is ideal for use in the production of biogas and bioethanol.
- The stems are soft and juicy - willingly eaten by animals and have a high digestibility.
- **The hybrid can be used for both silage and fresh consumption by animals**.
- Combines high productivity, late ripening, high sugar levels and high tolerance to disease.
- For fresh biomass can be harvested at plant height min 1.5 m
- In the case of mowing at plant heights over 2 m, it is possible to obtain the largest amount of green mass per hectare, but with mediocre nutritional properties. For optimal balance between yield levels and feed quality, it is recommended to harvest Sugargraze for silage in the milk-wax phase closer to wax) grain ripeness, or when the humidity of the whole plant is about 68%.

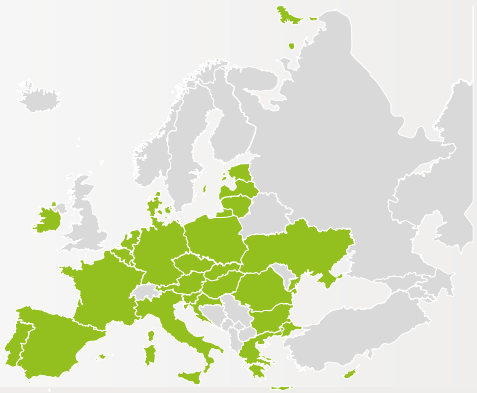
Fodder Quality at boosting stage

	%
Protein	9-10
Cellulose	22-23
DM	22-24
Sugar	30*
Digestibility	56-64
Metabolized energy	8-9.5MJ/kg

* Depends on planting time and local environments

Region

Well adapted for the EU and Ukraine



ZUMBA

Forage Sorghum Bicolor Hybrid

Description

Maturity	Flowering	Forage Type	Plant Height	Plant Population th/ha (dryland)	Plant Population th/ha (moderate)	Plant Population th/ha (irrigated)
Medium-late	**110-115 days**	**Brown Midrib-6/ Brachytic dwarf**	**220-270 cm**	**150-180**	**180-220**	**220-240**

Features

- **This product features a genetic combination of BMR-6 and Brachytic dwarf that enhances both productivity and efficiency**. Zumba has reduced internode length creating a compact, leafy and prolific plant. Excellent standability from Brachytic dwarf genetics
- However, it will yield with taller sorghums due to the standability and tillering attributes of the Brachytic dwarf characteristic. Producers will have the best of both worlds, excellent forage qualities and a dependable high-yielding feedstock. Highly digestible and consistent quality silage. Zumba is usually harvested 110 days after seeding
- High levels of structural carbohydrates in stalks and leaves for overall increased animal performance
- 40 percent greater IVTD forage quality rating over standard forage sorghum
- Good tillering ~ 2.5-3 (depends on plant population)
- **Excellent heat and drought tolerance and good performance on less productive soils**. Requires approximately 30 to 35 percent less water than corn for similar productivity. Potential to equal or exceed corn silage in milk production

Fodder Quality at boosting stage

	%
Protein	6.3
ADF	11.7
DM	29.2
NDF	63.7

Region

Well adapted for the EU and Russia.

TIE-BREAK

Nematodes Bio-control Hybrid

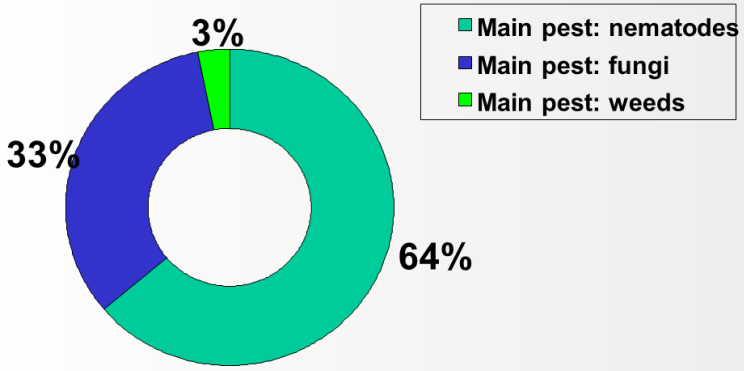
Features

- **Reducing the number of nematodes by 20 times compared with susceptible crops**
- Provides ideal barrier crop for melons, strawberries
- Can be used as a living mulch in companion to some crops
- Good solution for green-house
- Soil structure and microbial life of the soil improvement
- No impact on beneficial nematodes
- No pollution with seeds
- Short interval between two crops
- No odor
- **ATTENTION - Toxic to livestock (>800ppm). DON'T USE FOR FEEDING. Contained 4000-6000 ppm NCH during all life-cycle.**
- **DON'T USE FOR GRAZING/HAY/SILAGE**

Nematodes control

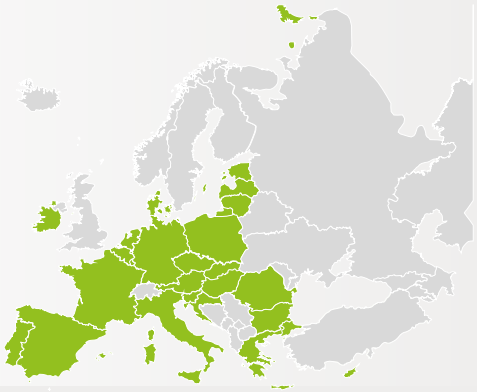
- Plant parasitic nematodes (PPNs) are a major threat and limiting factor in crop productivity through direct damage as well as indirectly by aggravating secondary infection due to other pathogens
- World over, 12.3% crop losses are attributed to PPNs
- **TIE-BREAK produces compounds to assist in managing specific genera of nematodes and soil pathogens.**
- It has a dual mode of action and produces these compounds in leaf, stem and roots. The production of these compounds in leaf and roots is independent of each other and have separate functions.
- For best results leave the crop grow to 1.6m in height, then cut with a mulcher mower and immediately incorporate into the soil. This fine chopping and incorporation into the soil is the most important aspect to achieve best results.

Pest Control



Region

Well adapted for the EU.



JUMBO

Sorghum-sudangrass Hybrid with Nematodes Bio-control

Description

Maturity	Flowering	Forage Type	Number of cuts	Seed weight (1000 kernels)	Plant Population th/ha (irrigated)	Plant Population th/ha (dryland)
Ultra- Late	**PPS**	**Multi-cut**	**3-4 cuts***	**25-29g**	**200-300**	**180-200**

Features

- **Non host hybrid can be cultivated more than 4 weeks without multiplying nematodes. Suppression of root-knot nematodes**
- Can be used as a normal fodder crop for animals
- **High level of protein content in young plants – 18-19%**
- Ideally suited for all grazing situations, hay, or green chop
- Widely adaptable due to the ultra-late flowering nature
- High leaf to stem ratio
- **Jumbo Star is usually harvested at plant height 0.9-1 m.**
- Suitability to finish cattle
- Soil structure and microbial life of the soil improvement
- No impact on beneficial nematodes

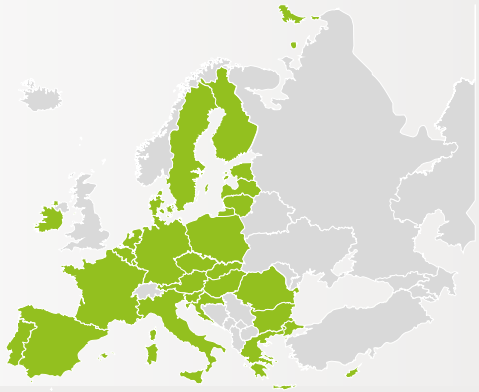
Allelopathy

- Allelopathy: Set of biochemical interactions between plants.
- The goal is to reduce the infectious inoculum: nematodes, for the next crop.
- Sorghum acts by allelopathy by diffusing biochemical compounds in the soil to reduce the populations of bio-aggressors: nematodes below the tolerance threshold, by preventing them from carrying out their infectious cycle.
- Dhurrin turns into hydrocyanic acid (HCN) or prussic acid

* Depends on planting time and local environments

Region

Well adapted for the EU.



NUTRIJET

Pearl Millet Hybrid

Description

Maturity	Flowering *	Forage Type	Number of cuts	Seed weight (1000 kernels)	Plant Population th/ha (irrigated)	Plant Population th/ha (dryland)
Late	**-- ***	**Multi-cut**	**3-4 cuts****	**7-9 g**	**200-250**	**150-180****

Features

- **A Fast growth and high yielding forage hybrid with high nutritive values leading to increased milk productivity.**
- Fast growth and regrowth after cutting – 5-9 cm per day (depends on local climate condition)
- No risk of prussic acid poisoning
- High protein content ~ 15-17 % in young plants at plant height 70-80 cm
- More leaf area
- Suitable for early feeding and excellent for hay, high palatability and metabolizable energy, high nutritional fodder
- Possible to make granulation
- Drought tolerant once stablished
- High tillering – 12-15**

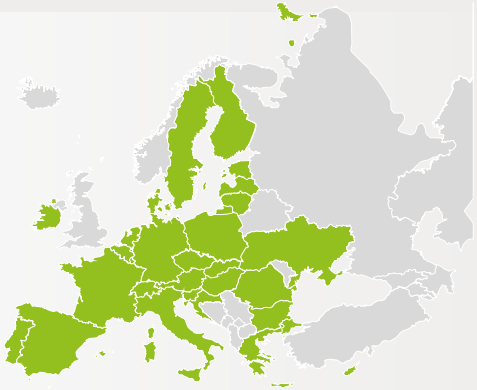
Characteristics

- To obtain high-protein fodder, the first cut is carried out 40-45 days after germination (or 70-80 cm plant height)
- DM – 25-30 %,
- Biomass yield – 70-100 t/ha **,
- Biomass productivity per day – 700-1000 kg/ha **

*Start to flowering, when day length is below 12 hours
** Depends on planting time and local environments

Region

Well adapted for the EU and Ukraine.



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