VARIETAL CATALOGUE



CULTURE
PLANT CULTURE
IN THE GENES

A PLANT
WITH MANY
USES

INNOVATION, SECURITY AND DEVELOPMENT DEVELOPMENT RESPONSIBILITY
SOCIAL AND
ENVIRONMENTAL





Industrial hemp (Cannabis sativa L.) has great potential as a sustainable source of textile fiber; yet, to develop a viable European hemp-for-textile chain, agronomic practices and primary processing need optimization to current industrial standards. A straightforward approach is to process hemp using existing, modern equipment for flax (linen). Here we extensively evaluated the quantity and quality of fiber extracted from field-retted hemp stems, scutched on the industrial flax processing line. Varieties from diverse European origin (USO 31, Dacia Secuieni, Bialobrzeskie, Futura 75, Carmagnola Selezionata, Santhica 27 and Santhica 70) were sown in randomized field experiments in Belgium, which has a rich long-standing tradition in high-quality linen production. Biomass yield and the quantity of long fiber processed were assessed across three growing seasons (2017-2019; plot size: 15-45 m2). In 2018, we also determined the quantity of tow (short fiber) and, the quality of long fiber in terms of fiber tenacity and elongation. The quantity of total fiber extracted (i.e. long fiber plus tow) accounted for 36.2% of the initial straw yield, indicating high processing efficiency. Approximately equal amounts of tow and long fiber were extracted. Mean long fiber yield approximated one ton per hectare; yet vield variation between varieties was considerable (range long fiber yield: 0.6–1.4 ton/hectare).

Despite significant variation between harvest years in straw yield, the quantity of long fiber extracted held relatively constant. Fiber tenacity of long hemp was overall high and comparable to flax (range: 37.6–45.3 cN/tex). Results indicate that field-retted hemp has potential to be processed into quality fiber on the industrial flax line and, that fiber yield can likely further be improved by genotype selection. Harvest mechanization, focused on the collection of parallel hemp stem portions of appropriate length for the flax scutching line (ca. 1 m), seems warranted to make this approach economically viable. Additional research on the fiber properties following hackling and wet-spinning will be needed to fully explore the potentiality of long hemp as a flax supplement for textile applications.

Elsevier - Industrial Crops & Products 158 (2020) 112969

THE COOPERATIVE'S,

STORY

Located in the heart of Anjou, HEMP-it is an agricultural cooperative specialising in producing and marketing industrial hemp seeds.

Located in the heart of Anjou, HEMP-it is an agricultural cooperative specialising in producing and marketing industrial hemp seeds. We breed, produce and market our partner producers' seeds to develop sustainable, competitive and responsible agriculture in line with our values: commitment, enthusiasm, durability, boldness and quality.

Led by a network of 155 propagator farmers and 30 employees, on an 8,000m2 production site, and more than 500 plots of growing area, we offer our customers in France and worldwide a vast selection of certified industrial hemp seed varieties.

Since our creation in 1964, we have developed our business in the heart of Maine et Loire, a region historically recognised as a production basin for hemp seeds thanks to its climate and proximity to the Loire Valley. Polyculture, livestock farming, horticulture, and seed production have built the region's solid reputation, guaranteeing highly competitive production in the area.

DISCOVER OUR BUSINESSES

SUPPORT OUR PRODUCERS

We provide support to our partner producers by supplying them with high-quality seeds, adapted to today's challenges and emerging markets. We offer them innovative solutions in terms of technical itineraries and agricultural machinery to optimize their production while safeguarding natural resources and the health of humans and animals.

CULTIVATE INDUSTRIAL HEMP SEEDS

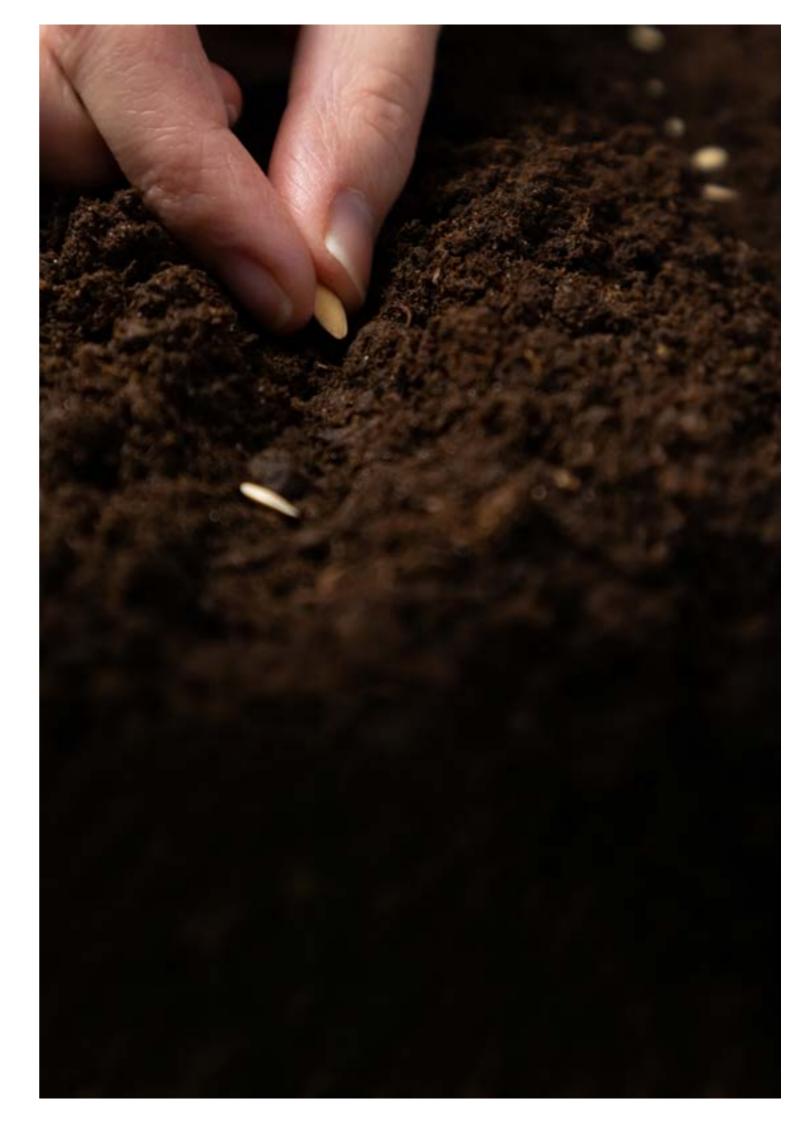
In April-May, our partners propagate seeds on their farms July-August is the period for roguing to eliminate dioïc males and plants that clearly do not possess desired traits. Harvest is performed in September.

PRODUCTION

Propagated seeds are then delivered to the cooperative. Here they are dried, then transferred to the production site's machines for sorting and cleaning our seed production facilities sort and package the seeds before storing them in a cold room for optimal preservation.

MARKETING

With the support of our sales team, we advise our customers on their varietal selection (seed, straw, fibre, etc. purposes) according to local production conditions. We ship and track goods until they are delivered.



VALUES THAT UNITE

COMMITMENT

We act ethically, with respect and integrity towards our employees, our members, our customers and all our stakeholders. As responsible corporate citizens, we are committed to a model of agriculture that respects people, land and plants.

ENTHUSIASM

Because we believe in what we do, we are involved, committed and positive. We work in a spirit of cooperation and reciprocity, with passion and pride.

PERMANENCE

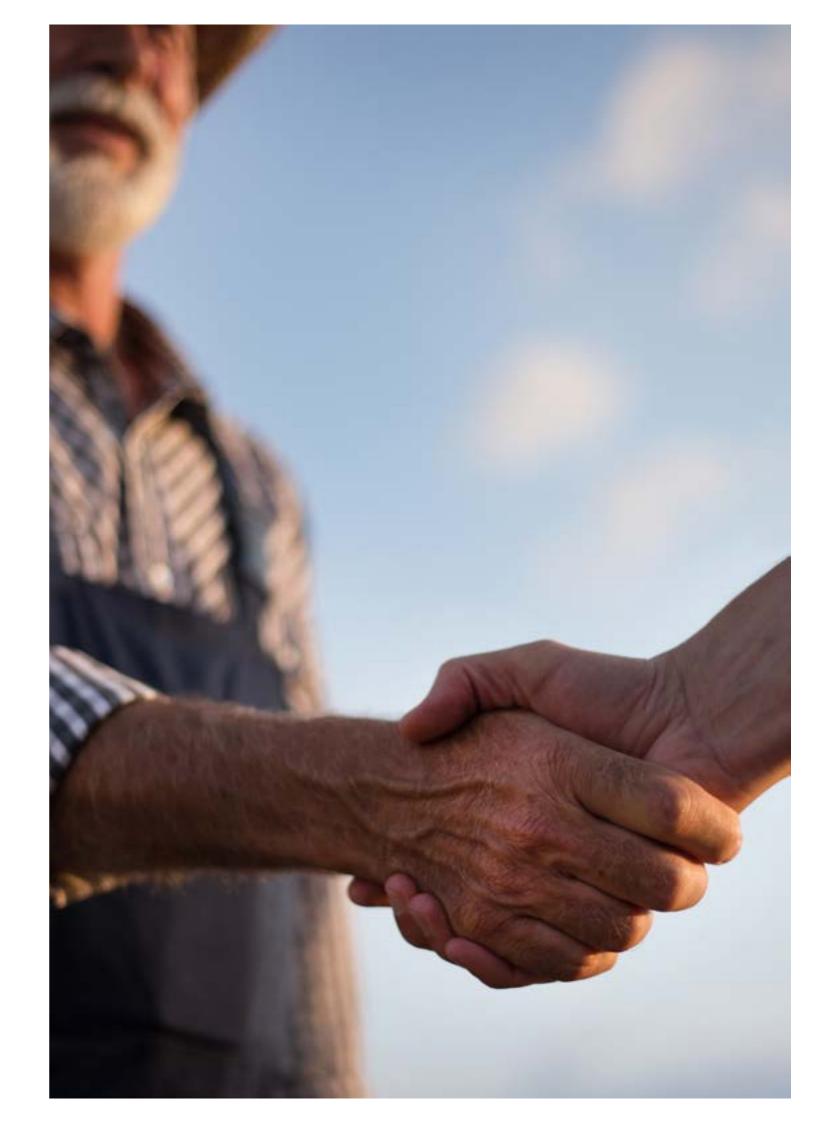
We take a long-term view of our business model to ensure the future of industrial hemp, our members and future generations.

AUDACE

We cultivate curiosity, diversity, entrepreneurship and innovation. We think outside the box to imagine the seeds of tomorrow.

QUALITY

Customer satisfaction is the cornerstone of our business, which is why we strive to maintain a high level of quality throughout our production.





HEMP-IT ADN, UNIQUE INNOVATION STRUCTURE AND VARIETY CREATION

Launched in 2017 and created in 2019, HEMP-it adn is the HEMP-it cooperative and Fédération Nationale des Producteurs de Chanvre's (FNPC) brand dedicated to varietal innovation.

This new work, supported by a dynamic and experienced team with a strong scientific understanding of the land and the plants, aims to strengthen, accelerate and refine hemp variety creation.

As a source of diversity and value creation, innovation and varietal creation are strategic to the heart of our development project. This is why we invest more than 15% of our turnover in innovation and the creation of hemp varieties. These investments have resulted in the creation of a new scientific unit: HEMP-it adn and continue today with the introduction of new tools.

HEMP-IT ADN'S OBJECTIVES ARE TO:

- Select our plants to create varieties that meet new quality criteria and the expectations of producers, industrialists and consumers,
- Accelerate the plant breeding process through the use of innovative plant biotechnologies,
- Ensure the quality of French industrial hemp by promoting the production of high-quality, highperformance seeds,
- Enrich our plant knowledge through partnerships with research centres and competitiveness centres.

R&D - A RESPONSE TO THE NEEDS OF PRODUCERS, INDUSTRIALISTS AND CONSUMERS

In response to the needs expressed by producers, industrialists and consumers HEMP-it adn employees aim to work on and improve genetic resources by creating new hemp varieties that are better adapted to the latest industrial processes.

HEMP-IT ADN'S MAIN RESEARCH FOCUS IS:

- Adaptation to new trends in production techniques and industrial processes: for more uniformity and quality
- Better yields
- Industrial schedules adapted to each production method
- Adaptation to regulatory constraints
- Better parasite resistance

DISCOVER SEARCH



A NEW INNOVATIVE TOOLS

Research and Development is a strategic element of the breeder's work: helping to anticipate needs and imagine varieties for tomorrow's challenges.

Existing and emerging hemp markets require varieties with increasingly precise and complex biological and agronomic characteristics.

At the end of 2022, HEMP-it adn launched its first research and breeding programs in its new facilities. As well as developing new varieties and biotechnological tools, this controlled environment will enable us to gather information more rapidly on the potential performance of our germplasm with a view to approaching new markets, both in France and internationally.

The high-potential germplasm that emerges from these climatic chambers will be more stable and reliable, and will ensure the renewal of varieties for tomorrow.

of history

1964



CREATION OF THE CCPSC

Coopérative Centrale des Producteurs de Semences de Chanvre

1965



INSTALLATION OF THE CCPSC

The foundation of CCPSC, the production cooperative for industrial hemp seeds, in Beaufort-en-Vallée (Maine-et-Loire, France)

2020



NEW

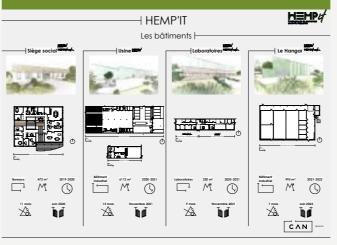
The creation of a protected area for hemp seed production. Creation of Hemp-it adn, which is dedicated to R&D and varietal innovation



NEW HEADQUARTERS

HEMP-it's relocation to its new bio-sourced hemp material head office SOC (Official Service for Control and certification of seeds and plants) certification for hemp seed production

2014



NEW TOOL PROJECT

An increase in the production area and the decision to modernise the production factory

2017



HEMP FOR YOU

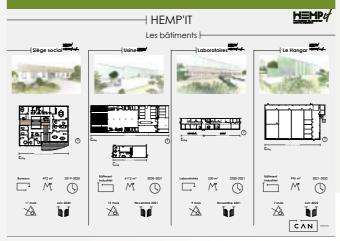
THE COOPERATIVE

IN 2023, HEMP-it continues to be the European leader in certified hemp seed production and marketing.

NEW IDENTITY

The consolidation of all the Beaufort-en-Vallée activities With a new identity, CCPSC became HEMP-it

2021



NEW PRODUCTION SITE

Implementation of a new, 6,500m2 industrial production facility

2022



HEMP-IT INSTALLATION

Culture chamber launch Health analyses laboratory authorisation

ABOUT GROWING HEMP

OF HEMP

Let's start from the premise that it's a very interesting plant in the rotation, thanks to its effects: no phytosanitary inputs, smothering effect, lower water requirements than other crops, soil-structuring effect. However, one must be careful not to neglect certain aspects, otherwise there is a risk not benefit from all these advantages.

CHOICE OF PLOT

Choosing a deep, humus-rich soil with good water retention and loosened compacted soil will favour hemp emergence, as will a light sandy loam or clay loam soil. Conversely, sandy, shallow, gravelly or compacted soil will limit the plant's root development.

PREVIOUS CROP

Prohibit crops whose harvest involves heavy compaction: beet, potatoes, corn. Avoid buckwheat because of its allelopathic effect (especially in dry autumns and winters).

INTERCULTURAL PLANT COVER

Cover crops act both to protect the soil (leaching, runoff, nitrate) and to improve future crops. Their choice will therefore be crucial, especially as they should be destroyed at the start of winter (rolling, ploughing) so that they can be put to full use by hemp in spring. Prefer winter faba bean or mixtures of winter faba bean + phacelia. Phacelia has the advantage of being able to pump the phosphorus absorbed on the complex (otherwise unusable by the crop) and make it available to hemp. This improves emergence density, planting quality and emergence vigour.

SEEDBED QUALITY AND SOWING PERIOD

Ideal soil preparation for hemp:

- Fine preparation to increase the surface area of grain-soil contact (hence moisture),
- However, a few small clods to counterbalance the risk of threshing,
- No structural obstacles at depth to allow good development of the root system.

Moreover, emergence is linked to a sum of temperatures: between 80 and 100°C cumulative. The warmer the weather, the quicker the crop emerges, and the more likely it is that the next stage will be successful (no weeds, good development, good yields). Hemp should mark the row from day 6. Depending on geographical location, the ideal period can start as early as the beginning of April and end in the last fortnight of May. As long as you respect these points, you'll have successfully sown your hemp crop. All that's left to do is to plan the rest of the cultivation with peace of mind. This is no longer a matter for the farmer, but essentially depends on the weather. Poor sowing and poor emergence will undoubtedly ruin your hopes of a good result. Good sowing and good emergence mean that one can look forward more calmly to the crop, but only the harvest can guarantee that it has gone well.

SEEDLING PREPARATION

Soil temperature is the most important factor in ensuring good seedling establishment and emergence. The soil must be fine, dry and warmed to at least 10-12°C. The sowing period varies according to the desired orientation. Sowing can be carried out from mid-April to the end of April for chenevotte and seed markets. For fiber markets, sowing can take place from late April to early May.

Sowing can be carried out if the following 5 to 6 days' weather conditions are suitable: mild weather and no thunderstorms to avoid a crust of threshing soil. Use a disc seed drill with press rollers (max. depth 2 cm and press seed line) to ensure good seed-to-soil contact.

EXAMPLES OF **TECHNIQUES**

These examples of cropping itineraries should be adapted according to soil analysis.

The sowing date can vary immensely, depending on the agricultural region, soil conditions and production purpose. The earlier the sowing, the higher the risk of seed or seedling death. The more periods of rainfall there are, the higher the risk of seed or seedling death.

Consequently, early sowing should be carried out with a higher seeding rate. It is also advised to adapt the seeding rate to the soil conditions, weed pressure, type of crop, type of seeder, type of weed control (mechanical) and the farmer's experience with the crop.

PLANTING

The agronomic conditions required for planting are the same for seed, fibre and shive varieties. Namely:

- Soil temperature of 10°C (within a range of 0-10cm)
- Unpacked and crumbling soil
- No foreign matter on the soil surface
- Plot dried out
- Plot level
- Sowing depth 1cm

FLOWERING

Flowering does not start at the same time and depends on the earliness of the selected variety.

It should be noted that this flowering stage is essential for seed output varieties. The conditions to be adhered to maximise seed production are:

- ullet Temperature: During the filling stage T° > 35 °C is detrimental (loss of PMG)
- Light: The leaves ensure photosynthesis and therefore the plant's nutrition (seed filling)

HARVESTING

As with flowering, harvesting begins depending on the earliness of the selected variety.

The tools used during harvesting vary according to the purpose of the selected variety

Essential tools for seed harvesting: rotor or conventional threshing machine

Essential tools for fibre and shive harvesting: double blade mower or TP 7 mower and rake













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AGRICULTURAL ADVICE AND SUPPORT

Possibility of making use of HEMP-it's agronomic technician to be supported in the different stages of the hemp plant development:

UPSTREAM PREPARATION: in the choice of varieties and preparation of the soil before sowing

IN THE COURSE OF GROWING: to assess and validate the development of the plant

DOWNSTREAM: to make the post culture balance-sheet.

Tailor-made support to be defined on request by the Agronomic Department : b.hurstel@hemp-it.coop

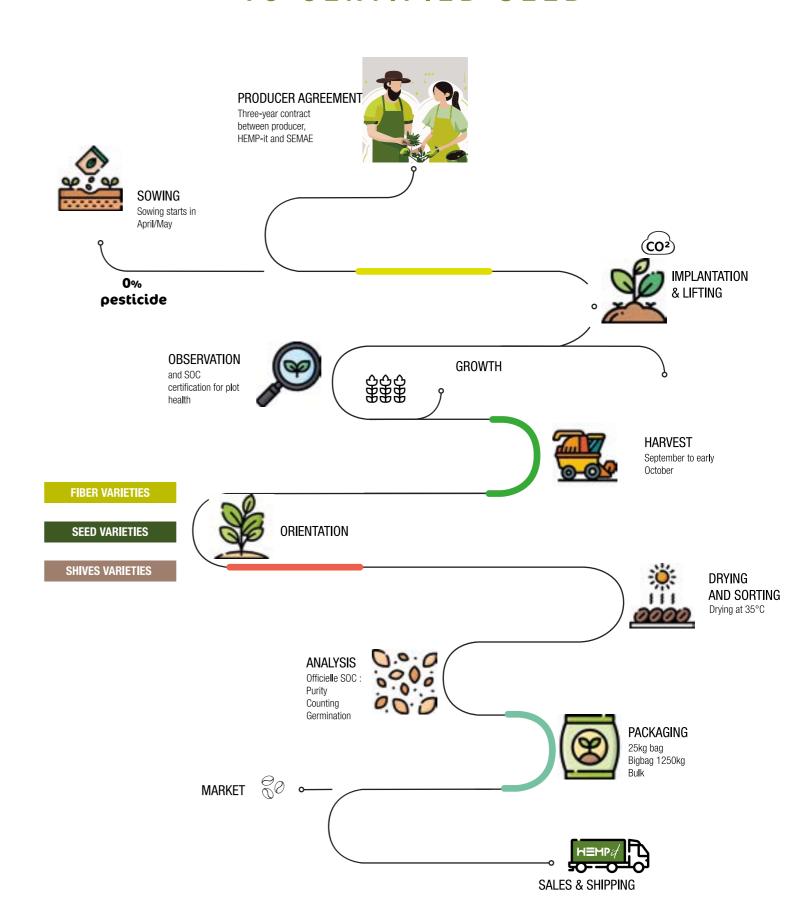
ENVIRONMENTAL QUALITIES

- Soil cleaning ability (Japan)
- Carbon sinks
- Minimal use of crop protection products

AGRONOMIC QUALITIES

- Significant return for the next crop
- Soil-structuring root system
- Limits surface water run-off and leaching
- Enhanced cultivation within a cropping system

FROM SEED TO CERTIFIED SEED



WHAT IS A **HEMP SEED?**

WHY CERTIFY HEMP SEED?

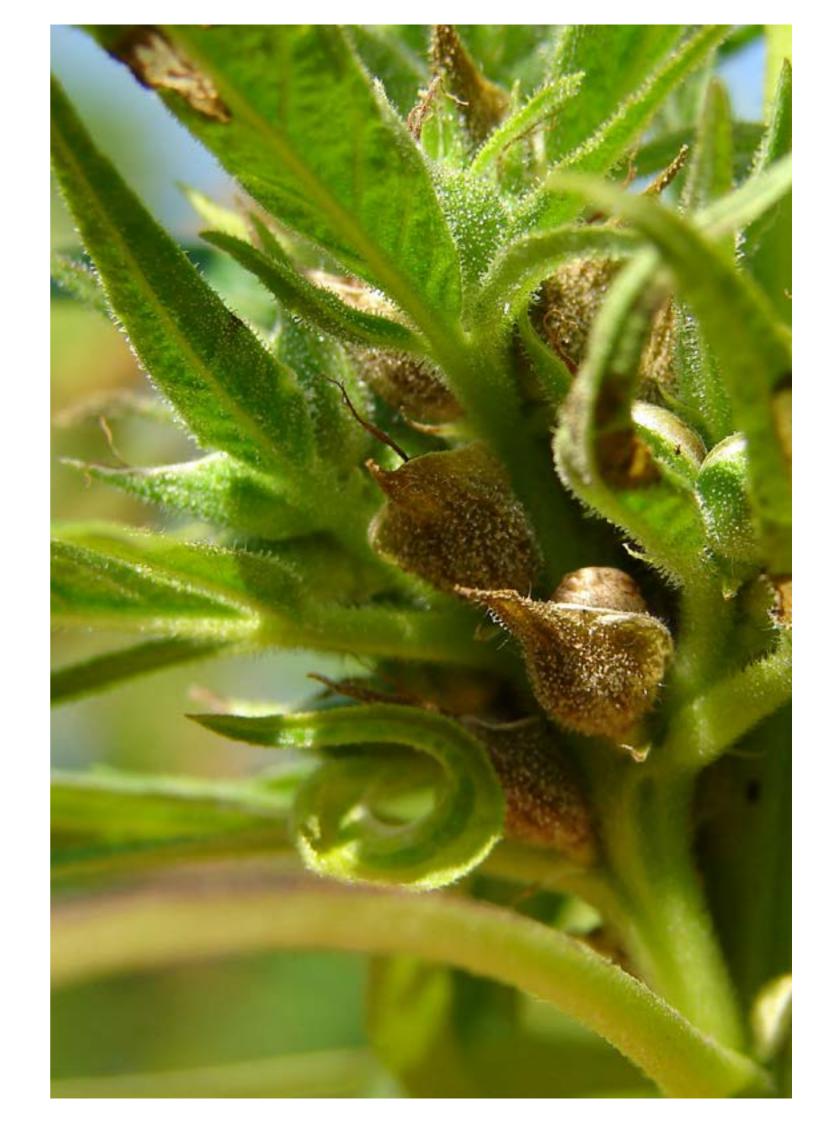
Certified seed is tested to ensure varietal identity, specific purity, germination rate and health quality. The seeds can be marketed when all these conditions have been approved. SOC (Official Service for Control and certification of seeds and plants) is the organisation responsible for the approval of hemp seeds in France. The objective of certified seed is to guarantee the conformity of the variety identity, genetic purity threshold, and physiological and health status as a result of traceability for users

WHAT'S THE DIFFERENCE BETWEEN A SEED AND A SEEDLING?

Unlike industrial hemp seed, which can only be consumed or processed, certified seed is the only seed that can only be used for sowing. It is defined by technical regulations, and provides all the guarantees required to secure users' harvests.

WHAT ARE THE SEED ANALYSIS CRITERIA?

From the field to distribution, checks are performed at all stages of the seed production process. Any non-conformity results in the rejection of the batch. Declaring the production to the S.O.C. is compulsory for seed production. Various criteria must be met to certify a batch lot: approval of the mother seed batch, the production plot's history with regard to compliance with technical regulations, batch traceability and batch approval.



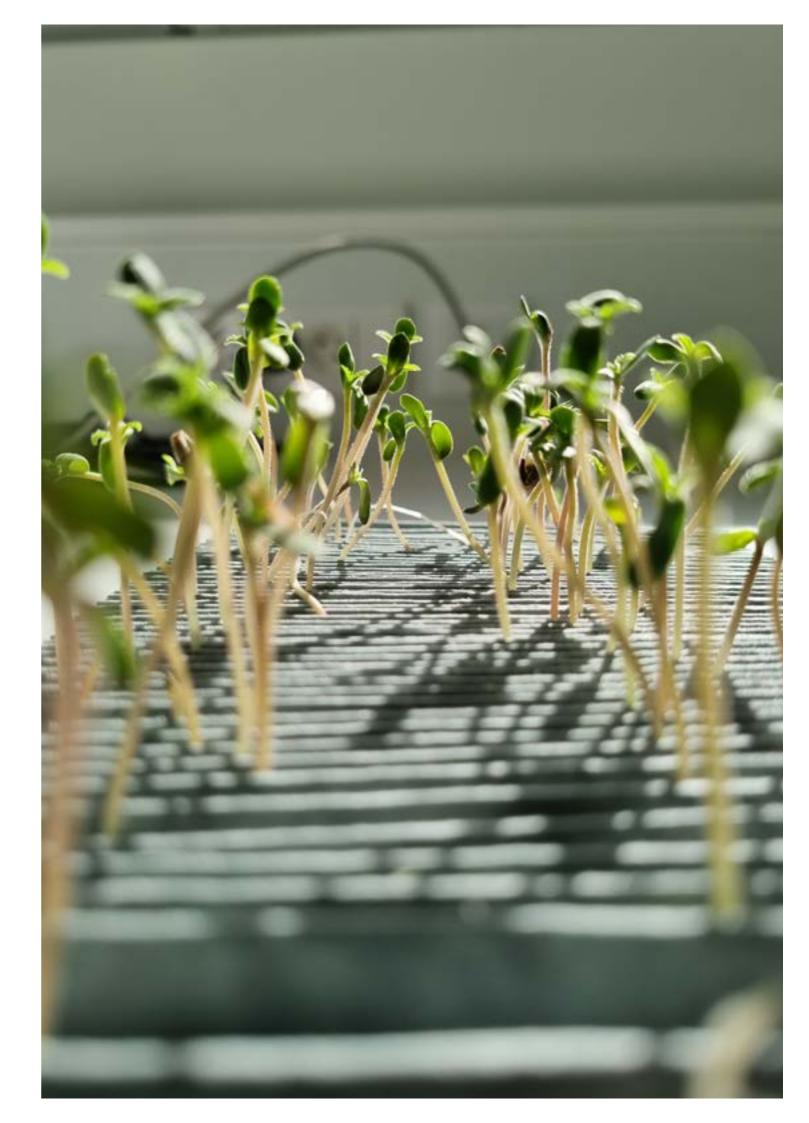
INTERNAL SEED ANALYSIS LABORATORY

The laboratory has been fitted with new technological equipment, making it officially recognised as a seed analysis unit. In our endeavour to constantly improve our seed quality, we wanted to develop our internal skills in order to directly analyse our growers' batches on site. These analyses allow us to monitor our production facility closely and provide unparalleled quality in the hemp seeds we supply globally.

This expertise ensures our performance in the following analyses:

- BATCH APPROVALS USING MICRO-CLEANING
- GERMINATION CAPACITY
- PURITY
- COUNTS
- OROBANCH
- PATHOLOGY

We therefore analyse over 600 batches every year in our laboratory.



HEMP IS A CONTROLLED AND REGULATED CROP

Industrial hemp (sativa L.) differs from medical cannabis, which contains a high level of THC (tetrahydrocannabinol), unlike hemp.

The cultivation of industrial hemp is strictly regulated by both the French Public Health Code and European legislation. In France, only the seed production and marketing cooperative HEMP-it is authorized to issue industrial hemp seed, and only varieties with a THC content of less than 0.3% are authorized for cultivation. To date, 79 hemp varieties are authorized in Europe, of which only 21 are approved by the French authorities. The HEMP-it catalog contains 17 varieties that can be multiplied, certified and registered in the European catalog.

THE REGULATORY FRAMEWORK

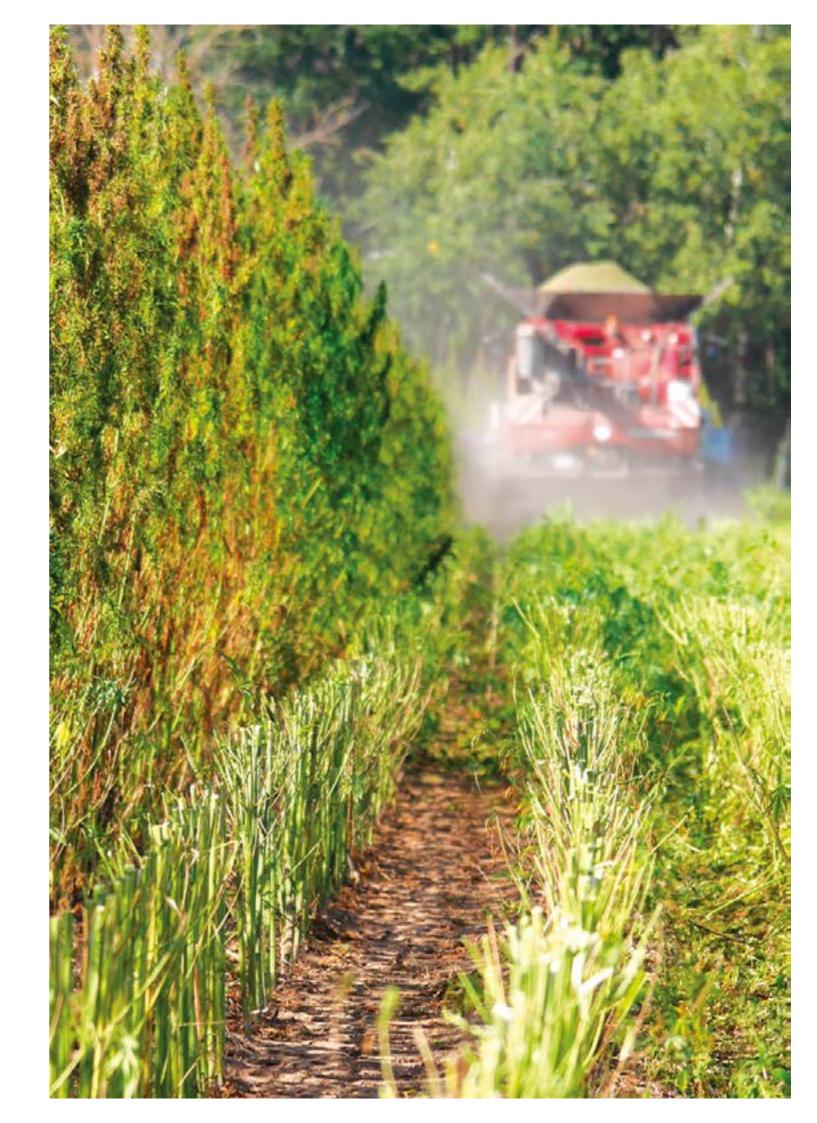
According to the Decree of December 30, 2021 implementing Article R. 5132-86 of the Public Health Code:

Only active farmers within the meaning of current European and national regulations may grow hemp flowers and leaves (Only farmers registered with the MSA may do so on French territory).

Only varieties with a THC content of less than 0.30% and registered in the Common Catalogue of Varieties of Agricultural Plant Species or the Official Catalogue of Plant Species and Varieties may be grown in France (certified).

USEFUL REFERENCES

Ruling of December 30, 2021 implementing article R. 5132-86 of the public health code, available on the website www.legifrance.gouv.fr



PRESENTATION OUR VARIETIES

	OSTARA 9 FOOD & COSMETIC MONOECIOUS	NASHINOÏDE 15 FIBRE MONOECIOUS	MONA 16 FOOD & COSMETIC MONOECIOUS	DJUMBO 20 FOOD & COSMETIC DIOECIOUS	MUKA 76 FIBRE MONOECIOUS	FUTURA 83 SHIVE MONOECIOUS
Height	••••000000	•••••00000	•••••00000	•••••00000	••••••	••••••
Cycle length	•••000000	•••••00000	•••••00000	•••••00000	••••••	••••••
Production potential straw	•••000000	•••••00000	••••••0000	•••••00000	••••••	••••••
Production potential fibre	•••000000	•••••••	••••••0000	•••••00000	••••••	•••••••
Production potential seed	••••••	••••••0000	••••••0000	••••••	••••00000	••••000000
Fibre richness	••••00000	•••••••	••••••0000	••••••	••••••	•••••00000
PMG	•••••00000	•••••00000	••••••	••••••	•••••0000	•••••••
THC level	•00000000	000000000	•00000000	•00000000	•00000000	•00000000
CBD level	•00000000	000000000	••0000000	••0000000	•00000000	•00000000
Lodging resistance	••••••	••••••	••••••	••••••	••••••000	••••••
Broomrape tolerance to broomrape	••0000000	••0000000	••0000000	••0000000	••••••	••••••

HEMP YOURSELF OUR VARIETIES

SALAD ? WHY NOT OSTARA 9





I'VE MADE UP MY MIND: TOMORROW I'M GOING TO CHANGE MY SNEAKERS AND DARE TO WEAR SANTHICA 70

A SURFBOARD FOR THE SUMMER IS GREAT, BUT ONE MADE FROM **MUKA 76** IS BETTER





NASHINOÏDE 15 IS PART OF MY DASHBOARD

I'M WARM WITH MY
FUTURA 83





OF JEANS FIBROR 79
WILL CATCH YOUR EYE

ORION 33 TO KEEP PAPERS Together







PLANT **BREEDING**



VARIETIES FIBRE-ORIENTED

Selected for very specific uses, fiber varieties deserve special attention if they are to express their full potential. When you choose to grow these varieties, we advise you to follow the cultivation recommendations to make the most of their technical qualities.

NASHINOÏDE 15
FIBRE
MONOECIOUS



Height •••••0000 Cycle length •••••0000 Production potential straw ••••••• Production potential fibre •••••• Production potential seed •••••• Fibre richness •••••• PMG •••••00000 THC level 000000000 CBD level 000000000 Lodging resistance •••••• Broomrape tolerance to ••0000000 broomrape

MUKA 76 **FIBRE**



 SANTHICA 70

FIBRE MONOECIOUS



•••0000

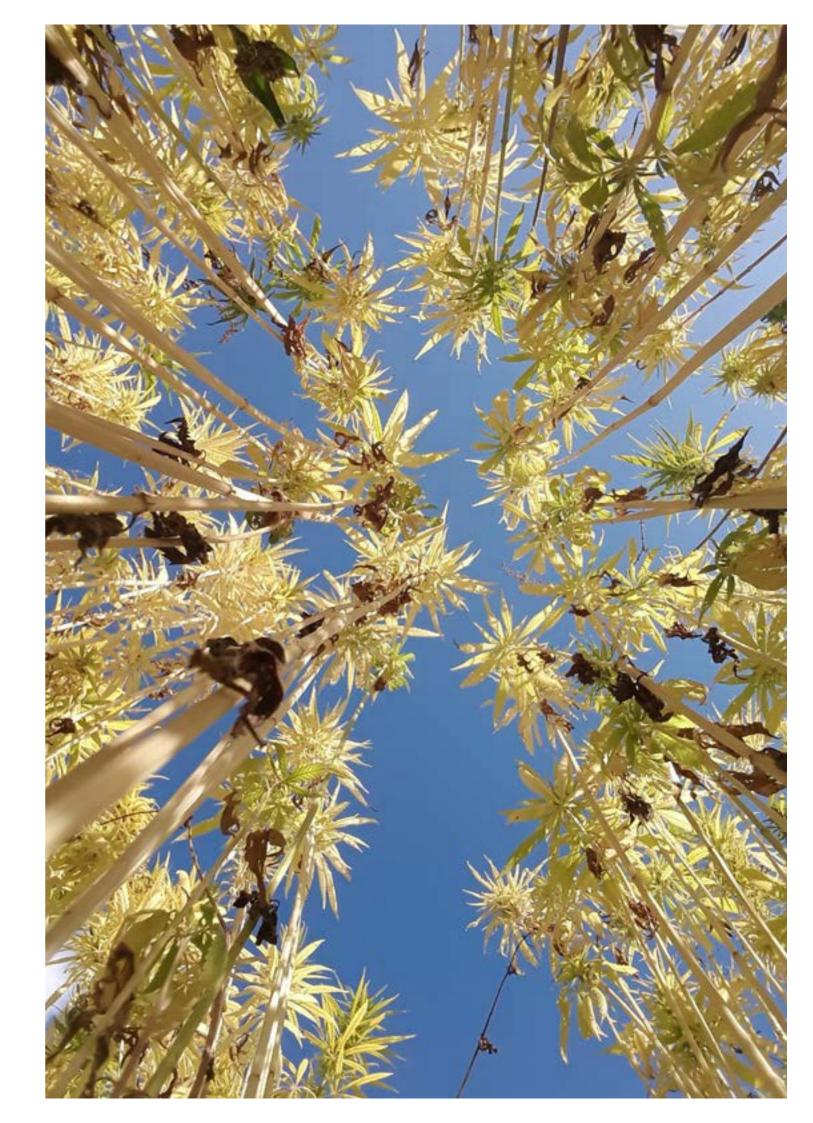


VARIETIES PRE-ORDER

Reservations to be made before December 2024 and confirmed before end of 2024 by downpayement to secure the quantities. Stock allocated in priority to orders placed before 15/03/2024 for delivery in 2025.

All orders are processed in priority order.

Type Height Cycle length Production potential straw Production potential fibre Production potential seed Fibre richness PMG THC level CBD level Lodging resistance Broomrape tolerance to broomrape	SANTHICA 27 MONOECIOUS	FUTURA 75 MONOECIOUS	MONOECIOUS
Type Height Cycle length Production potential straw Production potential fibre Production potential seed Fibre richness PMG THC level CBD level Lodging resistance Broomrape tolerance to broomrape	FELINA 32 MONOECIOUS	FEDORA 17 MONOECIOUS	FERIMON MONOECIOUS



VARIETIES FOOD & COSMETIC ORIENTED

OSTARA 9

MONA 16

FOOD & COSMETIC FOOD & COSMETIC

MONOECIOUS





Height

Cycle length

Fibre richness

PMG

THC level

CBD level

broomrape

Lodging resistance

Broomrape tolerance to

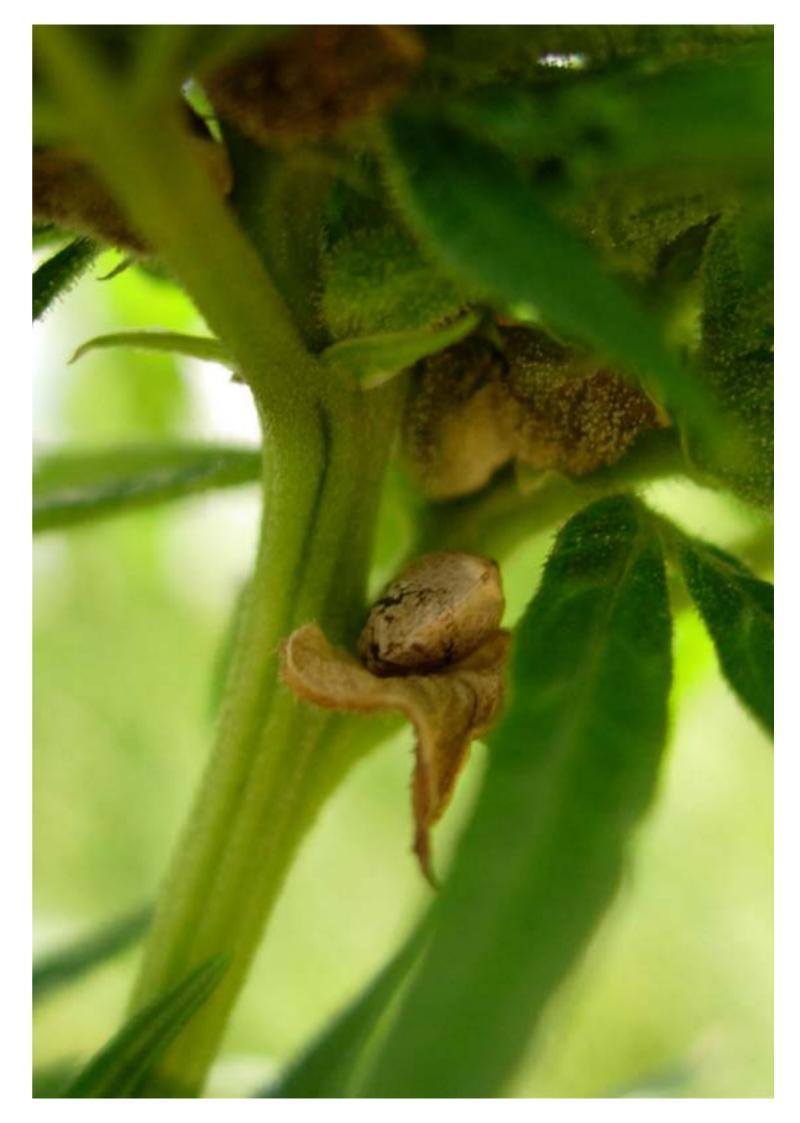
Production potential straw

Production potential fibre

Production potential seed

••••000000 •••0000000 •••0000000 •••0000000 •••••• ••••000000 •••••00000 •00000000 •00000000 ••••••

•••••00000 •••••00000 •••••• •••••• ••••••0000 •••••• •••••• •00000000 ••0000000 •••••• ••0000000 ••0000000



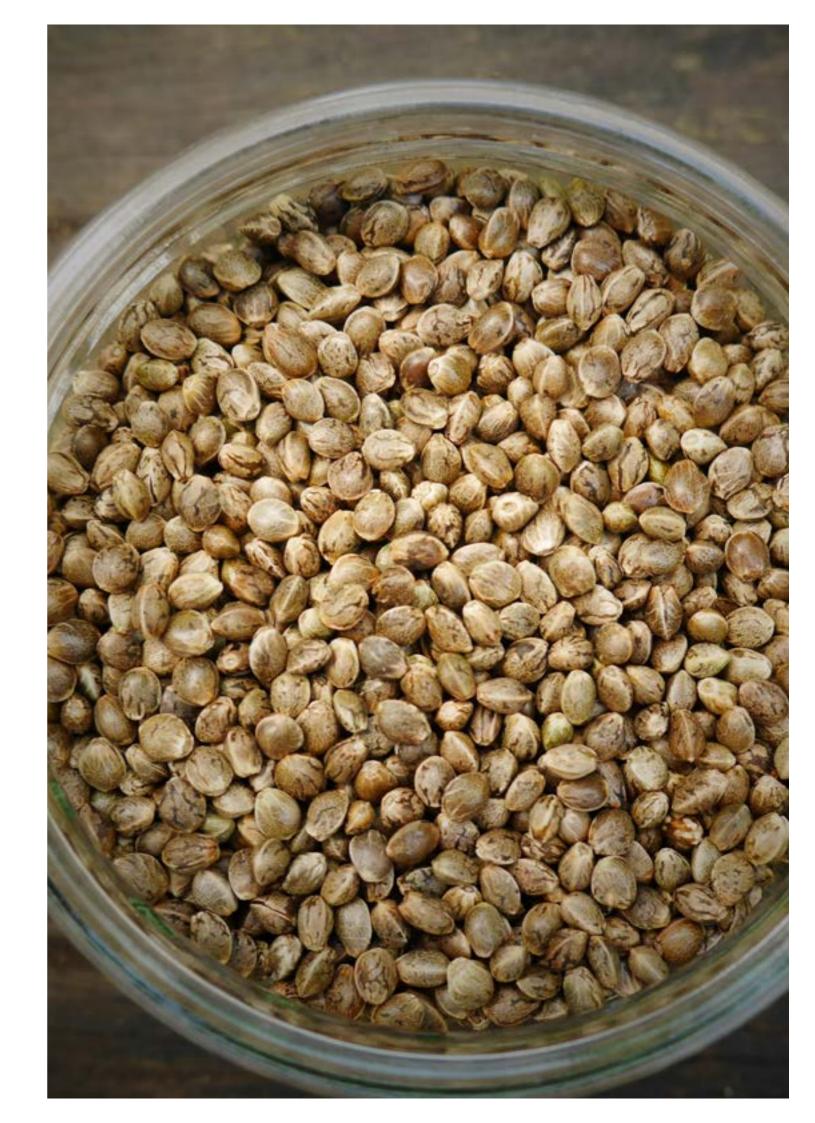
VARIETIES PRE-ORDER

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	EARLINA 08	FEDORA 17	FELINA 32
Туре	MONOECIOUS	MONOECIOUS	MONOECIOUS
Height	•••0000000	•••••00000	••••••
Cycle length	•••0000000	•••••00000	••••••
Production potential straw	•00000000	••••••	•••••00000
Production potential fibre	••0000000	•••••00000	••••••
Production potential seed	••••••	••••••	••••••
Fibre richness	•••••00000	•••••00000	••••••
PMG	•••0000000	••••••	••••••
THC level	•00000000	•00000000	•00000000
CBD level	•00000000	•00000000	••00000000
Lodging resistance	••••••	••••••	••••••
Broomrape tolerance to broomrape	••0000000	•00000000	•00000000

	USO 31	FERIMON
Туре	MONOECIOUS	MONOECIOUS
Height	••••000000	•••••00000
Cycle length	••••000000	•••••00000
Production potential straw	••••000000	••••000000
Production potential fibre	•••••00000	•••••00000
Production potential seed	•••••00000	•••••00000
Fibre richness	••••••	••••••
PMG	•••••00000	•••••00000
THC level	•00000000	•00000000
CBD level	•00000000	•00000000
Lodging resistance	••••••	••••••
Broomrape tolerance to broomrape	••0000000	•00000000

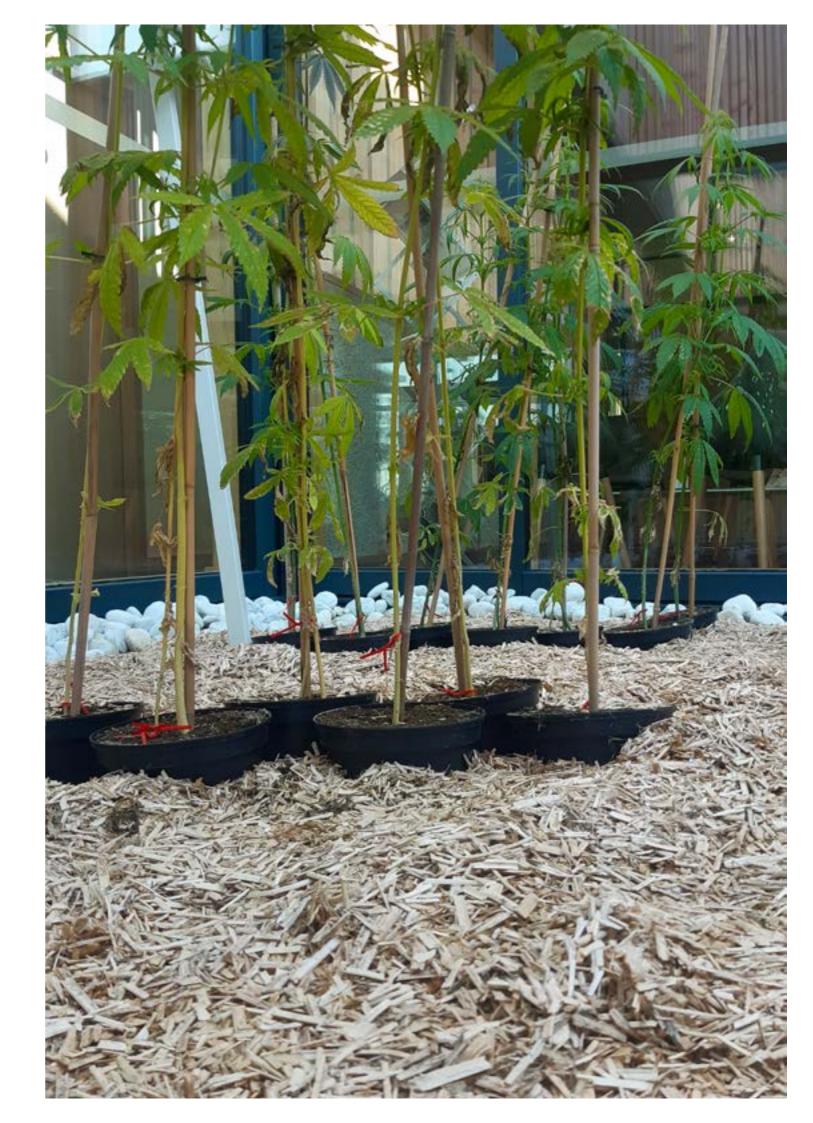


VARIETIES SHIVE ORIENTED

FUTURA 83
SHIVE
MONOECIOUS



Height
Cycle length
Production potential straw
Production potential fibre
Production potential seed
Fibre richness
PMG
THC level
CBD level
Lodging resistance
Broomrape tolerance to
broomrape



VARIETIES PRE-ORDER

Reservations to be made before December 2024 and confirmed before end of 2024 by downpayement to secure the quantities. Stock allocated in priority to orders placed before 15/03/2024 for delivery in 2025.

All orders are processed in priority order.

	FEDORA 17	FELINA 32	FUTURA 75
Туре	MONOECIOUS	MONOECIOUS	MONOECIOUS
Height	•••••00000	••••••	••••••
Cycle length	•••••00000	••••••	••••••
Production potential straw	••••••	•••••00000	••••••
Production potential fibre	•••••00000	••••••	••••••
Production potential seed	••••••	••••••	••••000000
Fibre richness	•••••00000	••••••	•••••
PMG	••••••	••••••	••••••
THC level	•00000000	•00000000	•00000000
CBD level	•00000000	••0000000	••00000000
Lodging resistance	••••••	••••••	••••••
Broomrape tolerance to broomrape	•00000000	•00000000	•••000000



VARIETIES DIOÏC

Production potential straw Production potential fibre Production potential seed Broomrape tolerance to

Height

PMG

THC level

CBD level

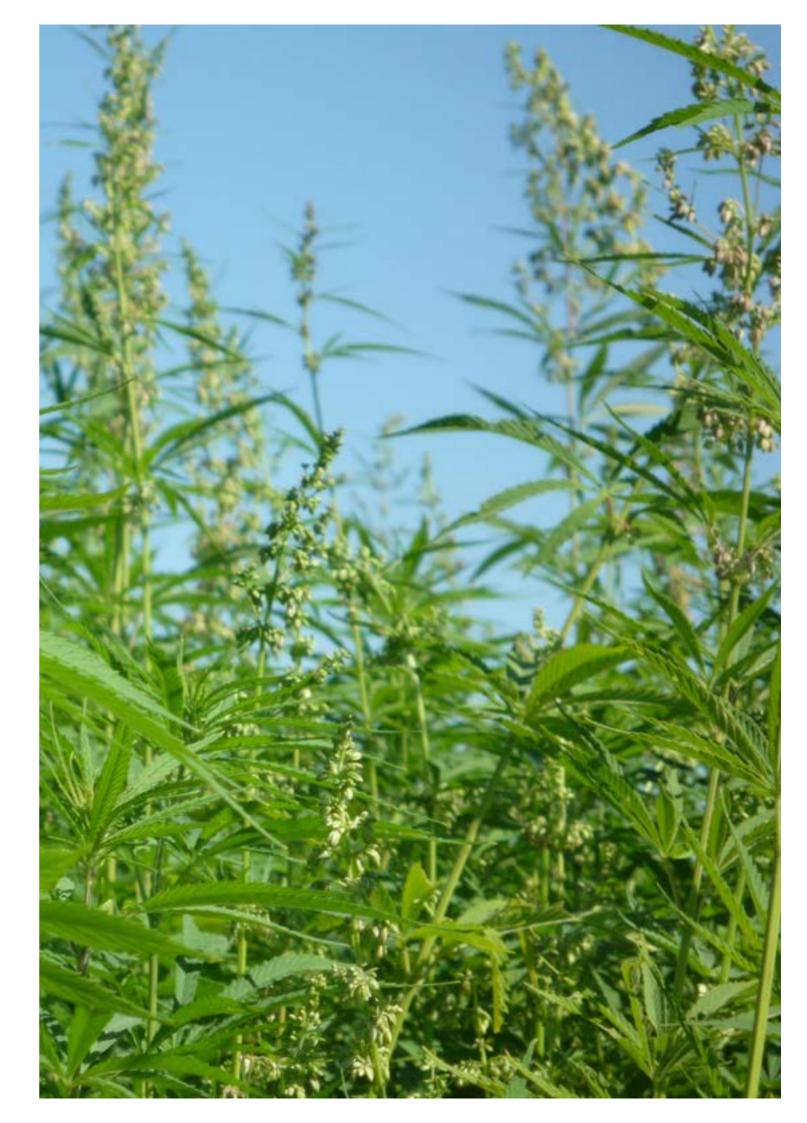
broomrape

Lodging resistance

Cycle length

Fibre richness





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