

1. Growing Industrial Hemp

A Practical Guide for Home Growers and NZHIA Seed Project Participants

Introduction

Industrial hemp is a fast-growing annual crop with an extraordinary range of uses. Depending on the variety grown and the intended end use, almost every part of the plant can be utilised.

Industrial hemp may be grown for:

- stems for fibre and hurd - construction materials, absorbents, textile and cordage
- seed for food, oil protein and industrial uses, lubricant detergents, paints
- leaves, flowers and roots (biomass) for research and industrial applications
- phytoremediation to help improve contaminated and compacted soils
- crop rotation benefits and biodiversity improvement
- education and scientific research
- future primary and secondary processing opportunities.

This guide has been prepared specifically for **home growers, lifestyle block owners, trialists, researchers etc, as participants in the NZHIA Seed Project.**

It introduces the fundamentals of successfully growing industrial hemp on a small scale. It is intended for educational purposes and complements the other publications in the NZHIA Knowledge Series

Industrial hemp remains a regulated crop in New Zealand. Growers should ensure they understand the current legislation and industry responsibilities before planting or handling hemp plants or plant material. Good planning, careful crop management and accurate record keeping help protect both individual growers and the wider industry.

MPI would like to stress that industrial hemp can not be feed to companion or production animals, this means it should **not** be used in grass/regen seed mixes if it is to be used as a fodder crop.

1. The NZHIA Seed Project

The NZHIA Seed Project has been established to encourage practical experience with industrial hemp while supporting education, encouraging best practice and highlighting industry risks such as pollen drift.

For the 2026 season, the project is supplying **Kompolti** seed sourced from a reputable New Zealand grower. The seed was produced in Canterbury and is supplied with a batch number and harvest date to support traceability and future crop evaluation.

Kompolti is suitable for both seed and fibre production and performs well across a wide range of New Zealand growing environments.

Kompolti is a **dioecious** variety, meaning male and female flowers are produced on separate plants. Under normal growing conditions, approximately half of the plants will be male. Male plants produce pollen before naturally dying back, (60-90 days) while female plants continue developing seed, (100-120 days.)

This is an important characteristic to understand because it influences sowing density, final plant populations and harvest planning.

Understanding this natural growth cycle helps growers appreciate how hemp develops and assists with planning, planting and harvest.

2. Choosing a Growing Site

Selecting an appropriate growing site is one of the most important decisions affecting crop performance.

Industrial hemp grows best in:

- fertile, well-drained sandy or loam soils
- full sun throughout the day
- sites with good air circulation, but not windy
- areas with reliable moisture during establishment
- paddocks or garden beds free from prolonged waterlogging.

Although hemp is adaptable and can grow across much of New Zealand, it performs best where soil structure and drainage are good.

Heavy clay soils often benefit from additional cultivation and organic matter to improve drainage and aeration, while light sandy soils may require more frequent watering during dry periods.

Local climate also influences crop performance. Soil temperatures should be consistently above **10-12 °C** before planting, and spring frosts should have largely passed.

Hemp dislikes "wet feet". Poor drainage can reduce plant establishment, restrict root development and increase disease pressure.

Wind exposure should also be considered. Strong winds may cause lodging in tall crops, particularly when plants are growing rapidly or carrying mature seed.

3. Preparing the Soil

Healthy soil is the foundation of a healthy hemp crop.

A soil pH, around **5.8 to 6.5** is considered the optimum range for most growing conditions

Before sowing:

- prepare a fine, firm seedbed
- remove established weeds
- incorporate compost or well-rotted organic matter where appropriate
- avoid soil compaction
- undertake a soil test if nutrient levels are unknown.

During establishment, young plants require consistent soil moisture for successful germination and root development. Where rainfall is unreliable, supplementary irrigation may be beneficial.

As a general guide, nutrient requirements are approximately:

Nutrient	Typical Requirement
Nitrogen (N)	100–120 kg/ha
Phosphorus (P)	50 kg/ha
Potassium (K)	60–80 kg/ha

These figures should be used as a guide only. Actual requirements will vary depending on soil type, previous land use, intended end use and seasonal growing conditions. If the soil tests are good, then there isn't much demand for fertilizer.

Legume crops grown before hemp may help improve nitrogen availability, while regular additions of compost and organic matter contribute to long-term soil fertility.

Grower's Tip

Feed your soil first. Healthy soils full of humus generally produce healthier, more resilient hemp plants.

4. Planting Your Hemp Crop

Industrial hemp is generally planted during spring, from October through November once soil temperatures have warmed above **10-12°C** and growing conditions (temperature and weather) are favourable. Depending on location, planting may continue up to Christmas day, although earlier sowing generally produces better crop establishment and higher yields.

Seed should be planted into moist, well-prepared soil at a depth of approximately **10–20 mm**, with **approximately 1.5 cm** being ideal under good soil conditions.

Good seed-to-soil contact is essential for rapid, even germination.

Small demonstration plots and garden beds can be sown by hand or with a simple garden seeder, while larger areas are commonly planted using conventional agricultural seed drills or precision planters. Regardless of the equipment used, consistent planting depth and even seed placement are more important than the planting method itself.

During the first month after planting, the crop may require around **75 mm of water**, depending on soil type and weather conditions. If there is plenty of moisture at planting, then be careful of excessive watering as it can easily drown the seed or cause weed strike.

Plant Population and Seeding Rates

The number of plants established has a major influence on crop performance.

For **fibre production**, hemp is planted at relatively high densities so plants compete for sunlight, producing tall, straight stems with minimal branching.

For **seed production**, lower plant populations allow individual plants to develop more branches and produce a greater number of flowers and seed heads.

Typical commercial sowing rates are:

Intended Use	Typical Seeding Rate
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Fibre production	50–75 kg/ha
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Seed production	25–40 kg/ha
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The Kompolti cultivar supplied through the NZHIA Seed Project has a **germination** around 85% and **thousand-seed weight of approximately 18 grams**. As a dioecious variety, around half of the mature plants are expected to be male. These characteristics should be considered when estimating seed requirements and expected plant populations.

Before sowing larger areas, carry out a simple germination test using approximately **100 seeds**. This provides a useful indication of seed viability and helps estimate likely field establishment.

The amount of seed required depends on:

- the size of the planting area desired plant spacing
- seed germination percentage
- expected seedling vigour
- the characteristics of the cultivar being grown.

These parameters should be considered when estimating sowing rates and final plant populations.

5. Crop Growth and Flowering

Industrial hemp is primarily **wind pollinated**.

As the crop matures, male plants release large quantities of pollen that may travel considerable distances under favourable weather conditions. This is a natural part of the hemp life cycle but may influence neighbouring hemp crops, seed production programmes and outdoor medicinal cannabis operations.

Kompolti is a dioecious variety, producing separate male and female plants. Male plants usually flower first, releasing pollen before naturally dying back. This stage is often referred to as technical maturity and typically occurs between **60 and 90 days** after planting, depending on seasonal conditions.

Following pollination, female plants continue developing seed. Seed maturity generally occurs between **100 and 120 days** after planting, although this will vary depending on cultivar, planting date and local growing conditions

Because hemp is naturally wind pollinated, pollen may travel considerable distances under favourable weather conditions. This is an important consideration where other hemp seed crops or outdoor medicinal cannabis crops are located nearby.

Throughout the growing season, continue monitoring crop health, moisture levels, weeds, pests and disease. Early identification of problems generally results in better crop outcomes.

Detailed information on pollen movement and protecting neighbouring crops is covered in [**Pollen Drift & Industry Responsibility**](#).

6. Harvest Basics

Harvest timing depends on the intended use of the crop.

Seed crops are harvested once the majority of seed has matured. Mature seed should be dried promptly after harvest to maintain quality and storage life.

Freshly harvested hemp seed contains a relatively high moisture (over 20%) content and must be dried as soon as possible after harvest. Delays in drying can quickly reduce seed quality and may result in heating, mould growth or spoilage. Store seed in a cool, dry space below 15 °C at 7-9% moisture

Fibre crops are usually harvested earlier while stems remain suitable for fibre production and may undergo field retting before processing. Aim for less than 15% straw moisture content when bailing.

Successful harvest also depends on careful handling to minimise seed loss and maintain product quality.

Participants in the NZHIA Seed Project are encouraged to record harvest dates, seed yields, observations and any challenges experienced during the season. These records provide valuable information for future cultivar evaluation and help improve practical knowledge of growing industrial hemp in New Zealand.

Detailed information on harvesting, drying and storage is provided in the companion publication [Harvest & Storage Basics](#)

Industry Responsibility

Every grower contributes to the future of New Zealand's industrial hemp industry.

Whether growing a few plants in a home garden or managing a larger planting, responsible growing practices help maintain confidence in industrial hemp and support the industry's long-term development.

Growers are encouraged to:

- understand and comply with the Industrial Hemp Regulations
- maintain good crop records
- use quality seed with known provenance
- follow good growing and harvesting practices
- communicate with neighbouring growers where pollen movement may be a consideration
- share knowledge and support industry development.

Industrial hemp cultivation remains the responsibility of the grower. While NZHIA provides educational information and practical guidance, every grower is responsible for complying with current legislation and ensuring their crop is managed appropriately.

Working together helps build a professional, collaborative and respected hemp industry for the benefit of all participants.

Further Reading

This publication introduces the fundamentals of growing industrial hemp.

More detailed information is available in other publications within the [NZHIA Industrial Hemp Knowledge Series](#), including:

- **Publication 1 – Introduction to Growing Industrial Hemp:** Planning, site selection and crop establishment.
- **Publication 2 – Harvesting and Storage:** Maintaining crop quality after harvest.
- **Publication 3 – Seed Integrity, genetics and pollen management,** cross pollination risk
- **Publication 4 – Growing for Food Markets:** Producing high-quality food-grade hemp seed.
- **Publication 5 – Growing for Medicinal Supply:** Understanding regulated medicinal cannabis supply chains.

Together, these publications provide a practical guide for small scale growers, NZHIA Seed Project participants and anyone interested in understanding and contributing to New Zealand's industrial hemp industry.

Disclaimer

This publication has been prepared by the New Zealand Hemp Industries Association (NZHIA) as general educational information for home growers, participants in the NZHIA Seed Project and members of the industrial hemp industry.

The information is intended to support good growing and harvesting practices but should not be relied upon as legal, regulatory, agronomic, food safety, medicinal cannabis or commercial advice. Requirements may vary depending on the intended end use of the crop, applicable legislation and processor specifications.

Growers remain responsible for complying with all relevant legislation, licence conditions and contractual obligations. Readers should consult the Ministry for Primary Industries (MPI), the Ministry of Health and other relevant authorities for current regulatory guidance.

NZHIA encourages all participants to contribute to a professional, innovative and trusted industrial hemp industry that delivers lasting economic, environmental, health and social benefits for Aotearoa New Zealand.
