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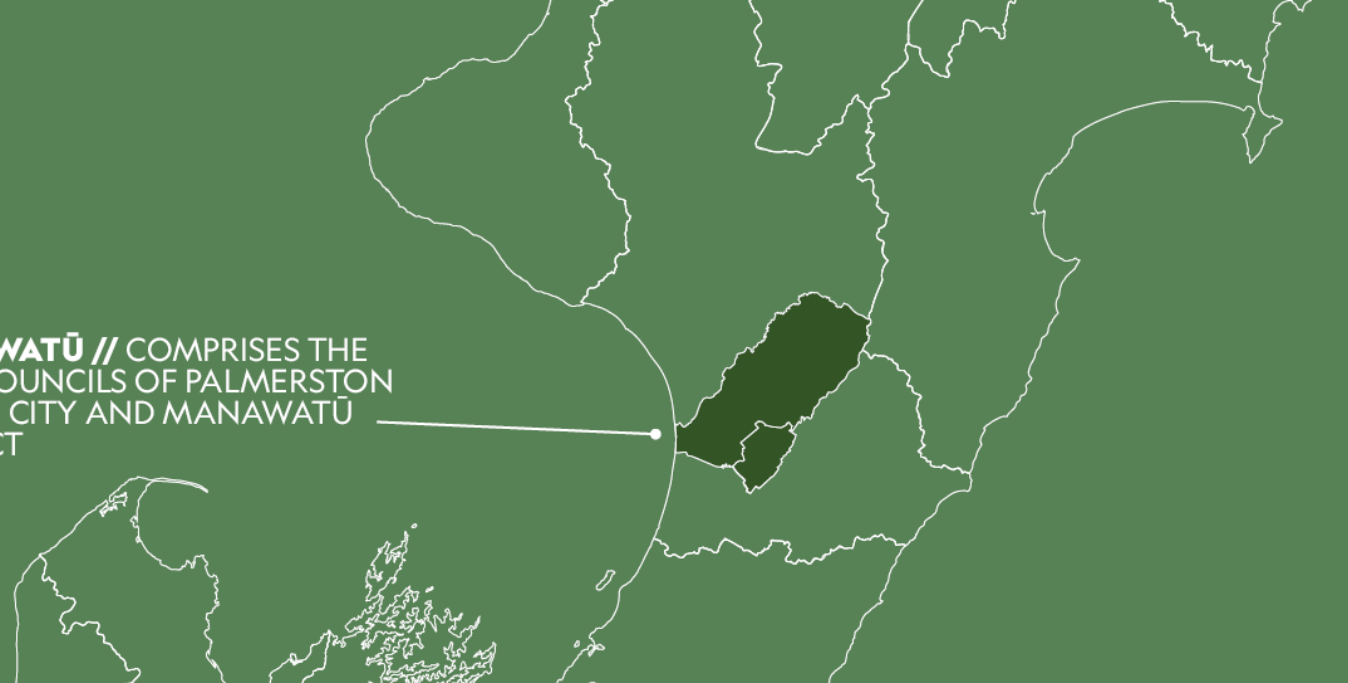
MANAWATŪ

GARLIC

IN MANAWATŪ

A GROWER GUIDE

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MANAWATŪ // COMPRISES THE
TWO COUNCILS OF PALMERSTON
NORTH CITY AND MANAWATŪ
DISTRICT

GARLIC // A HIGH-VALUE ANNUAL CROP WITH PREMIUM MARKET POTENTIAL AND STRONG REGIONAL SUITABILITY

Garlic has been identified as a key opportunity for farmers in the Manawātū region through our Diversification of Farm Systems report published in September of 2024.

This guide supports landowners and growers interested in diversifying into garlic production in Manawātū. Developed by the Central Economic Development Agency, this guide was created as part of the [Manawātū Regional Food Strategy](#).

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SUITABLE GARLIC VARIETIES + CHARACTERISTICS

Manawatū is considered to have a cool winter climate, optimal for garlic growing which comes with a unique set of considerations for commercial growing.

Climate conditions of the region are further defined in the Diversification of Farm Systems report.

Choosing the variety of garlic you wish to grow is vitally important as each have different characteristics that will have an impact on market entry and the viability of your venture.

CHARACTERISTICS OF GARLIC

- > **Long storing:** These garlies can keep for 12+ months if stored in a cool and dry place out of sunlight.
- > **Plentiful cloves:** These garlies generally have 8+ cloves per bulb giving a good number for replanting and eating.
- > **Great tasting:** These garlies are known for their great taste for a range of cooking methods.
- > **Easy peeling:** These garlies have thick or papery skins making them easier to peel.
- > **Plait/Braiding plants:** These soft neck garlic stalks, can be plaited for storage.

While some varieties will possess multiple of these characteristics, they may be impacted by harvesting and storage restrictions that should also be considered.



Garlic varieties that are likely to suit the Manawatū region due to the cool climate are:

SILVERSKIN:

Late Season – Long Storage – 10-30 Cloves

Silverskin is a soft neck, late-season garlic. It can be grown in a good range of climates but favours mild to cool winter climates like that of the Manawatū region. Silverskin is also considered to be the longest storing garlic.

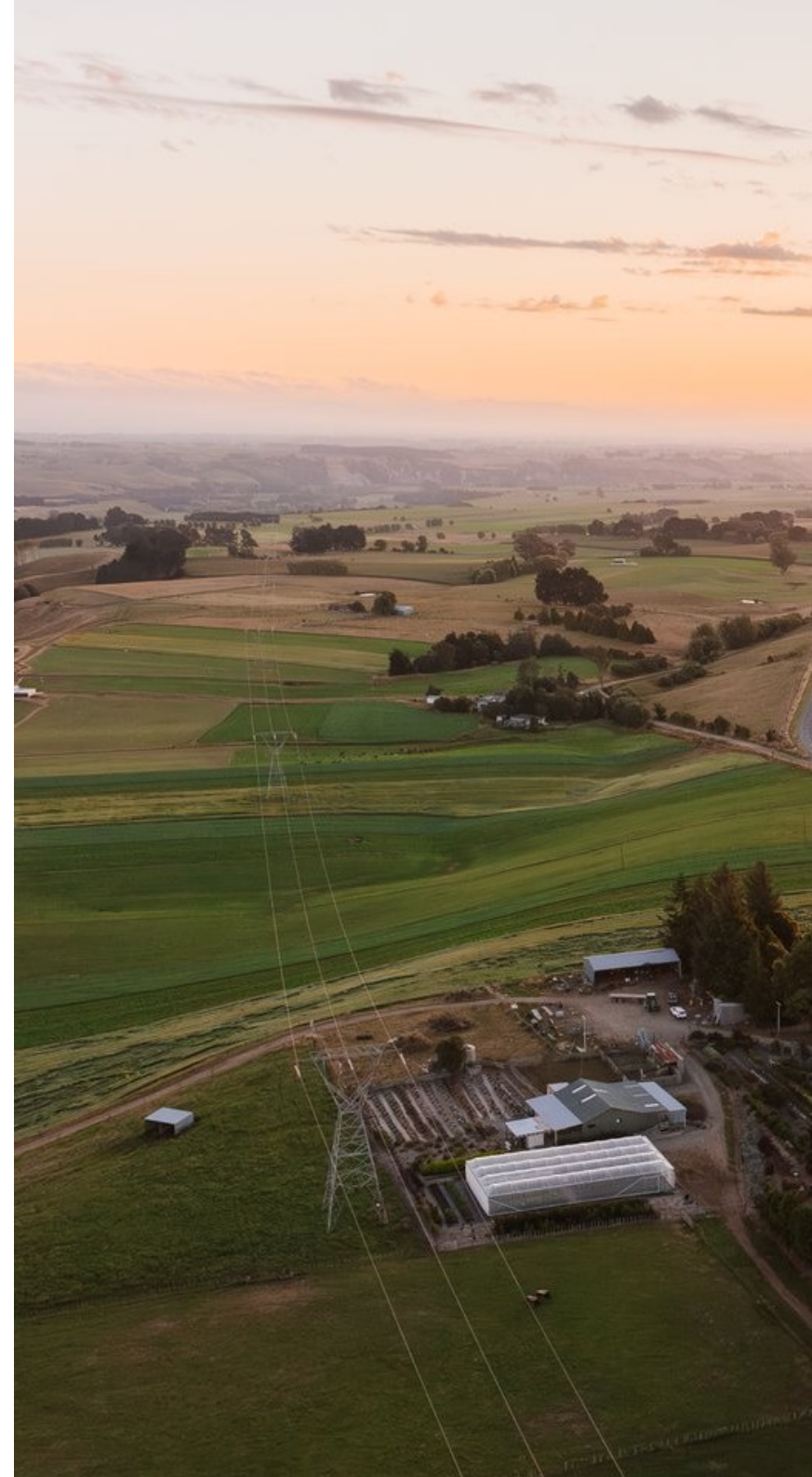
Favoured amongst commercial growers due to the high number of cloves per bulb, and long storage life. This garlic type is also the easiest to plait due to it's long, thin, and sturdy leaves that are highly pliable. Silverskin is also known as a non-bolting type. This means unless the crop is placed under stress it will not send up a flower stalk known as a scape. This is beneficial for commercial growers as they will not need to remove this prior to storage. Visually the bulbs have multiple layers of cloves with tight, thin skins that make peeling more challenging

ARTICHOKE:

Mid Season – Medium Storing – 8-12 Cloves

Artichoke is a softneck, mid-season garlic that is highly adaptable for most soil and climate conditions but does favour a mild to cool climate.

This garlic type is commonly used by commercial growers due to the high number of cloves produced per bulb, relatively long storage life and absence of scape. Despite having wide leaves, artichoke can be plaited making storage easier. Despite being a non-bolting garlic, a scape will be sent up if the crop is placed under stress as well as produce neck bulbils. Visually, the cloves present in a layer patter which looks similar to its namesake, the artichoke flower.



STANDARD PURPLE STRIPE:

Late Season – Medium Storage – 8-12 Cloves

Standard Purple Stripe (SPS) is a hardneck, late season garlic that favours cool to cold climates.

Growers may be inclined to grow SPS due to the presence of plentiful cloves and reputation of being great tasting. SPS is a strongly-bolting type meaning it sends up a solid stem flower scape which is not braidable, therefore storage considerations will need to be made. In addition, SPS is considered to have a medium length storage life so identifying access to market prior to harvest is important. This garlic is the most closely related garlic to the original wild garlic and visually produces tan coloured cloves with a purple hued wrapper.

MARBLED PURPLE STRIPE:

Late season – Medium Storing – 4-9 Cloves

Marbled Purple Stripe (MPS) is a hardneck, late season garlic that grows best in a cool to cold climate.

Known for its exceptional taste, MPS is a strongly-bolting garlic with a solid stem meaning it is not braidable and is considered as having a medium storage life. This garlic is known for its consistently large cloves and produces several tan and purple coloured cloves on a purple marbled hue cream bulb wrapper.

GLAZED PURPLE STRIPE:

Late Season – Medium Storage – 6-12 Cloves

Glazed Purple Stripe (GPS) is a hardneck, late season garlic that grows best in cool to cold climate.

GPS is another strongly-bolting garlic that is not braidable with a medium storage life and known for its cloves that appear to have a sheen of purple, bronze, silver and a hint of gold colours on a silvery coloured bulb wrapper.





SELECTING A SITE

Prior to selecting the site where you wish to grow garlic, is it important to understand what will produce the best results for both yield and taste.

Garlic requires a well-drained soil with a high concentration of organic matter. The ideal soil conditions for garlic are considered to be a loamy soil or sandy loam with a pH range of 6.0 to 7.5. There are many useful guides on how to engage in soil testing, such as [Ballance's soil testing guide](#) which can assist in this process.

As garlic plants require full sunlight to thrive, for a successful venture the site selected a site will need at least six to eight hours of direct sunlight per day. Adequate sunlight promotes photosynthesis and ensures healthy bulb development while planting in shaded areas can reduce bulb size by up to 30%.

Additionally, proper drainage is crucial to prevent waterlogged conditions, leading to root rot and other diseases that will negatively impact yield and quality. Planting garlic in raised beds or mounds can improve drainage and overall soil structure.

Garlic is a long-period root crop. Unlike many seasonal crops taking three months to grow, garlic is in the soil for 7-9 months. So, the soil must be healthy and in an optimal state before planting and during the seasons for leaf development and bulbing stages.





PLANTING INSTRUCTIONS



Ideally, soil preparation should begin 1-2 years before planting, although this can be mitigated with proper nutrient boosting such as compost, with an absence of any Allium species being planted within this time frame.

In order for the garlic roots to penetrate well into the ground, the soil should ideally have a depth of over 40cm. The consistency of the soil should be friable looking crumbly. Before planting it is advised to loosen the soil to break up clumps, reduce compaction and aerate. This will assist with the penetration of water, oxygen and nutrients. However, be care to avoid turning over the soil as this will mess with the horizons of the soil profile.

Garlic needs to be planted to send out roots before being struck with the winter extremes of driving wind, generally drier cooler air and chilling exposure. Depending on the variety of garlic will impact the planting schedule.

Spacing is vitally important when planting garlic. As a general rule, the more space that can be given between cloves the better. This

will allow maximum exposure to sunlight, root mass and air

circulation. The generally accepted method is 10-15cm apart in rows that are 15-30cm apart. However, it is important to note planting cloves only a few extra centimetres further apart makes a massive difference to plant health and bulb size.

Given the cool winter climate of Manawatū, cloves should be planted at a depth of between 2-5 cm. If the clove is large then consider placing it slightly deeper to allow for the longer length of the clove. While it is not an exact science, the top of the clove should have a covering of at least 2cm.

The planting process itself is straightforward but must be done with care:

1. Ensure the soil is moist, to avoid drying out the cloves.
2. Make holes for the cloves at the relevant depth using a jig.
3. Cloves should be planted with the wider base pointing down.
4. Once a row is completed, gently cover the holes with soil.

Mid to late harvesting garlicks can take six weeks to show leaves as they rely on cold soil temperatures to trigger leaf development.



FERTILISING + CARE

Garlic requires a significant amount of nutrients for optimal growth.

Phosphorus and potassium are essential for bulb formation, while nitrogen is crucial for foliage development.

To ensure the nutritional needs of garlic are met, growers could consider applying a balanced, all-purpose fertilizer with a ratio of 10-10-10 or similar before planting and during the growing season.

Another option is to complete fertilising in two phases. Firstly, Nitrogen rich fertiliser should be applied monthly until the maximum leaf number is grown. An exception to this is if temperatures are below 12°C as cold soils do not aid in nutrient uptake.

The second phase is during bulbing which occurs once the plant nearly reaches the maximum number of leaves before maturing. The fertiliser focus should switch to potassium here as it is important for root development during bulb growth.





WEED, PEST + DISEASE MANAGEMENT

Garlic are incredibly susceptible to weeds due to only producing a few slender leaves that can be easily overshadowed.

In addition, weeds compete for the nutrients in the soil which will already be in high demand by the heavy feeding garlic.

Once planted, growers may consider covering the soil with mulch to retain moisture and add nutrients in the soil as well as suppress weeds. However, due to the cool winter climate and potential for wet conditions, growers should be careful when considering mulching to avoid the ground become waterlogged. In addition, it is important to ensure the mulch used is not too heavy as this will hinder the garlic shoots. Mulch should be removed by spring to allow the soil to warm up, otherwise the garlic growth during the bulbing stage will be impacted.

Regardless of whether mulch is used or not, the soil should be regularly checked and weeded to give the garlic the best chance to grow.



In addition to weeding, another nutrient drain to garlic can come from the scape. Typically only hardneck garlics produce a scape, however as previously stated softneck varieties will as well when under stress. Prior to harvesting, hardneck garlic typically sends up a scape which normally curls then straightens. Growers often remove the scape to allow the garlic plant to focus on greater bulb development, with scape removal having a 10-30% impact on bulb size. Scape removal should be done on a dry day to ensure infection or disease is not introduced to the plant while the break is healing.

Common pests that can impact garlic are Nematodes, Black Aphids and Bulb Mites.

Prior to using the soil to plant garlic, growers could consider planting brassica or another member of the mustard family (or using this as mulch) as these plants release a compound that greatly reduce the presence of Nematodes and Black Aphids.

Bulb Mites are more likely to impact garlic during the harvest season as they tend to thrive in more humid conditions. Therefore, growers may find a more accelerated curing process using fans rather than a passive drying of the crops to be the most effective way to control these pests.





COMPLIANCE

For growers aiming to supply garlic to export markets or domestic supermarkets, it is essential to meet strict compliance standards.

These standards are often a prerequisite for entering commercial supply chains.

Key compliance areas:

While garlic is not currently subject to the same level of regulation as some export horticultural crops, growers entering commercial channels should still follow best practice standards. These include:

- > **Spray diaries and agrichemical record:** If any pest or disease control products are used, full documentation of application timing, rates, and withholding periods should be maintained. This supports food safety and market assurance.
- > **Post-harvest hygiene protocol:** Garlic intended for sale should be handled in clean environments with minimal contamination risk. This includes curing in well-ventilated areas and avoiding contact with soil or pests during drying.
- > **Traceability systems:** Even for domestic markets, being able to trace garlic from paddock to packhouse is increasingly expected. Labelling by batch or harvest date can support this.
- > **Food safety audits:** Growers supplying supermarkets or processors may be asked to participate in on-farm or packhouse audits. These typically assess hygiene, handling, and documentation practices.



Export considerations:

While most New Zealand-grown garlic is consumed domestically, there is growing interest in export opportunities. For these channels, additional requirements may apply:

- > **Phytosanitary clearance:** Garlic must be free of soil, pests, and diseases. Inspections may be required prior to export.
- > **Residue testing:** If agrichemicals are used, testing may be needed to confirm compliance with importing country standards.
- > **Cultivar identification:** Some markets may require confirmation of garlic type or origin, particularly for premium or processed products.

Growers are encouraged to engage with industry bodies and market partners to stay informed of evolving compliance expectations. As demand for locally grown garlic increases, maintaining high standards will support both market access and consumer trust.





HARVESTING + STORAGE

Harvesting time frames depend heavily on the type of garlic plants, climate and sunlight hours.

As seasonal variations can have a major impact, particularly heading into the harvesting season, growers should evaluate plantings closely around this time.

The best way to know when garlic is ready to harvest is by counting the remaining green leaves left as the leaves begin to brown off. As each leaf represents one outer skin of the bulb, leaving the garlic harvest too late can mean the cloves lack protection during the curing and storage process. Harvesting too early, in contrast, can result in underdeveloped bulbs lacking flavour and colour characteristics.

In the Manawatū region, the general harvest calendar is as follows:

- > **Softneck garlic:** Such as the silverskin and artichoke varieties are harvested when 6-7 green leaves remain on the plant
- > **Hardneck garlic:** Harvested when 4-5 green leaves remain on the plant.

This will ensure the bulbs have at least three bulb skin layers after cleaning the bulbs to protect the cloves from drying out during storage.

When harvesting, take care not to bruise the bulb when removing the plant from the soil or while transporting them to be dried. It is important to keep the bulbs out of direct sunlight to prevent sun damage, this can take place after less than an hour of exposure.



Once harvested, post-harvest handling is critical to maintain quality and shelf life:

- > Garlic should be cured in a dry and low humidity environment, shaded, out of rain and with some air flow. Commercial growers use fans to circulate air but a well-ventilated shed will also work.
- > Ideally daytime temperatures should be greater than 20°C at less than 55% humidity, with 1m/sec air speed.
- > Best practice for drying garlic is hanging the whole plant in groups of up to 10 plants. Hanging the whole plant allows the bulbs to draw final nutrients from the leaves as well as protects the bulbs from infection like mold.
- > Larger commercial growers may choose to remove the leaf material and roots to save on drying space.
- > Typically, the curing process takes around a month but the longer a grower allows for curing the longer the garlic can be stored for.
- > Prior to storage, it is necessary to remove the roots and dirty bulb wrappers, try to keep as much of the bulb wrapper on as possible to reduce airflow and moisture reaching the bulb.
- > Growers will also need to remove the false stem, except for softneck types when they are to be plaited.
- > While removing the dirty bulb wrapper and trimming, watch for any bulbs with damage or disease. Any in poor condition should be destroyed.
- > The necks of the garlic should be kept as long as possible to reduce air and moisture entering the bulb.





FINANCIAL INFORMATION

Growing garlic commercially in the Manawatū region presents a viable opportunity for growers seeking to diversify their operations.

While garlic is a long-period root crop requiring careful planning and management; its market potential, particularly for larger, high-grade bulbs, can offer strong returns.

Yields and production:

Garlic yield is influenced by variety, soil health, spacing, and seasonal conditions.

While exact figures vary, well-managed crops can produce between 7 to 12 tonnes per hectare, with higher yields possible under optimal conditions.

Bulb size plays a critical role in profitability. Garlic is typically graded by width using a commercial sizing system:

- > **Grade 3:** 30-35 mm
- > **Grade 4:** 35-40 mm
- > **Grade 5:** 40-45 mm
- > **Grade 6:** 45-50 mm
- > **Grade 7:** 55-55 mm

Larger bulbs attract premium prices, especially in retail and food service channels. Producing bulbs in the Grade 5-7 range can significantly improve revenue per kilogram, making spacing, nutrition, and scape management key factors in financial success.



Indicative market prices (2024-25):

Garlic is generally sold by weight, with prices varying based on grade, market channel, and presentation (e.g., fresh, cured, plaited). While prices fluctuate seasonally, the following ranges offer a general guide:

- > **Standard market grade:** \$6.00–\$12.00/kg
- > **Premium large bulbs (Grade 6-7):** \$12.00–\$20.00/kg
- > **Processing grade or small bulbs:** \$2.00–\$5.00/kg.

Direct-to-consumer sales, export premium, New Zealand branded, farmers markets, and boutique retailers may offer higher margins, especially for well-presented, cured garlic with strong flavour and visual appeal.

Establishment costs:

Estimated costs range from \$15,000 to \$30,000 per hectare, depending on:

- > Soil preparation and amendments
- > Irrigation infrastructure
- > Seed garlic (which can be a significant upfront cost)
- > Mulching and weed control
- > Curing and drying facilities



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