**Genoa Engineering Limited**

# Cultivation Facility

Security and Standard Operational Procedures for soilless media facility

# Introduction

These Security and Standard Operational Procedures have been designed by Genoa Engineering to be portable, flexible, but also sufficiently instructional that it all but guarantees success for a Cultivator in one of our specifically designed facilities.

Where a Cultivator has prior experience, a love for the plant, a willingness to learn and a desire for consistent improvement, these procedures in tandem with our intentional design and thoughtful automations should empower greatness. The result will be incredible outcomes regardless of the cultivar used.

Our goal is that a “mom and pop” can make an honest living from cannabis cultivation, providing this incredible medicine for their local community, all while remaining on the right side of the law and having minimal ongoing effort for paperwork or compliance upkeep. The focus is on independence, and small niche / artisanal cultivation, arriving fresh to domestic consumers.

It is not just the Cultivators who are expected to continuously improve and grow in knowledge / efficacy, but also this document will too with time. It will be refined, with feedback and new learnings about the plant and best-practices, both for cultivation and facility management.

The facilities are specifically designed with adequate security for high THC cultivation. With this in mind, a declaration of illicit seeds / plants is presumed to have been filed at the time of the independent license for each facility.

# Cultivation

## 1. Growth process overview

1.1. Cultivation begins with a mothering plant(s) that generates sufficient clones every 2- 8 weeks, depending on the circumstances of the facility layout and requirements.

1.2. Germination through seed is not the recommended “standard” process, cloning should always be utilized as the primary means for cultivation as seeds are never uniform enough.

1.2.1. Where seeds are to be germinated, they should be placed in a “Germination Tower” and watered 3x a day in accordance with the manufacturer instructions.

1.2.2. The germinated seeds are to then he transplanted into rockwool/coco coir /jiffy peat pellets as with cloning under §3

1.2.3. Failure of any seeds to germinate must be recorded appropriately as with any plants/clones.

1.3. Clones are taken from the mother plant, placed into a clone-dome where they are expected to root within 10-14 days, though allowances may need to be made for this to take up to 3 weeks depending on the cultivar and age of the genetics.

1.4. When the clones have taken root and hardened off, they will be removed from the clone dome, transplanted into a larger capacity container of coco or rockwool cube, and be moved into a new area for vegetative growth. The plants may need further movement in the future from this vegetative growth area into a flowering-specific area depending on the facility layout.

1.5. If required, once the plants have grown to a sufficient size to complete a canopy-space of flowers, the photoperiod will be changed and the flower cycle commences. The plants may be repotted again or stacked on top of a larger rockwool cube / slab, if required, at this time.

1.6. The plants will be harvested approx 8-13 weeks after their flower photoperiod has changed, in accordance with the cultivars unique and specific requirements.

1.7. If there is a dedicated drying area, they are to be hung upside-down in this dedicated drying area, or alternatively hung in the area in which they were growing.

1.8. Once dried, a curing process should be undertaken as-per any offtake requirements, such as through the use of Grove Bags.

1.9. The dried flower can then be stored ready for collection by the offtake buyer. The process starts over.

1.10. There may be multiple growth cycles occurring concurrently within the facility, depending on the size and nature of the floorplan.

## 2. Plant introduction into the facility

The Standard Operating Procedures only ever expect known-good clones to be brought into the facility, either purchased from another Medicinal Cannabis license holder, or declared from an underground / illicit source. Germination from seed falls outside the scope of these SOPs.

2.1. New Mother plants or clones to be used as mother plants are to be purchased only from Approved Suppliers, keeping in compliance with the Misuse of Drugs (Medicinal Cannabis) Regulations 2019.

2.2. Approved suppliers of cannabis plants must hold a “Medicinal Cannabis License – Nursery or Cultivation” activity in New Zealand. Evidence of the license held by the supplier is kept in the Record Book.

2.3. Only cultivars listed on the Medicinal Cannabis license are approved for purchase. If a new cultivar is to be grown, Responsible Personnel will submit an amendment to the medicinal cannabis license. The amendment must be approved before the plants are procured.

2.4. Alternatively, plants may be procured from an illicit source if declared in advance. Up to 20 plants from an underground / illicit seller may be declared per-consignment notice filed with the Ministry of Health. The plants must be of a cultivar already “known” in Aotearoa New Zealand.

2.5. An initial consignment should be submitted during the first Medicinal Cannabis license application. If a new cultivar is to be grown, Responsible Personnel will submit an amendment to the medicinal cannabis license. The amendment must be approved before the plants are procured.

2.6. If more than 20 plants are to be procured from an illicit source at one time, multiple declarations may be made if needed to declare the total number of plants obtained.

2.7. On receipt, record the number of plants received in the Record Book.

2.8. Pre-assemble a grow-tent in an area designated for cultivation, so it is ready to use for quarantine purposes prior to the expected arrival of new plants.

This is to ensure that no outside contaminants such as insects are cross-contaminated onto the other plants in the facility.

2.8.1. This tent can be disassembled at the completion of the quarantine period and is not expected to be a permanent fixture

2.9. This quarantine tent should be confirmed to be operating at a negative pressure to ensure that internal air is not pushed outwards into the remainder of the Secure Facility. The air should be internally recirculating as much as possible, such that no contaminants will escape.

2.9.1. The exhausted air should have a HEPA filter for environmental contaminant controls, rather than a carbon filter, with the external rooms carbon filter being used for odor control.

2.10. Receiving personnel are to confirm the number of plants received matches the number of plants expected. Any discrepancies are addressed immediately through review of video footage and contact with the supplier and transporting personnel.

2.11. Where available, plants should be received through a Loading Bay area and taken to the quarantine tent immediately. Where a loading bay is not available, induction of the plants should be as discreet as possible in accordance with the Sending / receiving parcels procedure, and immediately taken to quarantine.

2.12. All newly received plants are to be labelled with their cultivar name, and a plant number starting from 1. If applicable, they may also be labelled with the date received.

2.13. All plants are to be foliar sprayed or washed with an anti-bug solution, made from components such as:
- Distilled / RO water: 8-12%
- Sodium citrate: 2%
- Soybean oil: 50%
- Isopropyl alcohol: 35%
- Potassium chloride: 35%
- Peppermint oil: 2%
- Citric Acid: 2%

Alternatively an approved pesticide product, or product consisting of approved active ingredients, may be used in accordance with Misuse of Drugs (Medicinal Cannabis) Regulations 2019 for NZMQS. A list of acceptable pesticides is published on the Ministry of Health website.

2.14. Plants will remain in the quarantine tent for a period of 2+ weeks under observation to monitor for any infection, insect infestation, or other undesired occurrence.

2.15. Any surplus / non-viable plants to be disposed of are to be treated as Discarded Biomass and disposed of safely and securely in accordance with Disposal of Biomass processes.

# 3. Cloning Process

The Mother Area contains one or more plants in a permanent vegetative growth state for the sole purpose of taking cuttings to create new plants.

Cuttings are taken with an expected 80% retention rate, with 20% expected to either ‘die off’, not take root, or be disposed of as part of genetic selection in accordance with the Disposal of biomass process. Therefore, if an expected 40 plants are desired for a season, a minimum of 50 cuttings would be taken. However, more can be taken for genetic selection purposes and consistency of size etc.

3.1. Prepare the clone rockwool cubes / root-plugs / jiffy pellets in accordance with either the growing medium manufacturer instructions, or the nutrient vendor instructions. Alternatively, if available, the nutrient manufacturers feed-chart preparation instructions may be followed.

3.2. Sterilize the clone dome base, tray and lid with a sanitising agent such as peracetic acid or hypochlorous acid.

3.3. The clone dome should then be fully dried with a single-use disposable / paper towel, ensuring no extra nutrients / water remains in the bottom tray. This includes underneath the grid-insert tray if one is being used. The dome lid should also be completely dried.

- 3.3.1. A regular towel should not be used, as it may contain microbial contaminants.
- 3.3.2. The lid / dome etc may be shaken to remove excess water first prior to drying with a paper towel.

3.4. Prepare a small 30-50mL glass, jar or plastic container with rooting hormone / compound such as Clonex.

3.5. The following variables are to be used as guideline targets during the cloning process:

- 3.5.1. Temperature: 23C (Dome via temperature probe)
- 3.5.2. Dome Humidity: 80 - 95%
- 3.5.3. Dome VPD: 0.4 - 0.6 kPa
- 3.5.4. PAR: 100 - 150 µmol/m2/s
- 3.5.5. Input EC: 2.5 - 3.0 (“Bloom” nutrients)
- 3.5.6. Input pH: 5.0 - 5.5
- 3.5.7. CO2: 1200 - 1500ppm
- 3.5.8. Alternatively the nutrient / growing medium manufacturers recommendations may be used.

3.6. An additional sensor should be placed inside of the cloning area (such as tent / room), but not the dome itself, to ensure the conditions are accurate.

- 3.6.1. Portable sensors may be used in the dome itself for remote observation and monitoring of the dome, however care should be

taken to ensure that the device can function in humidity levels as high as 99%RH

3.6.2. If a small sensor is to be placed inside of the clone dome, it should be appropriately cleaned / sanitized first.

3.6.3. The room itself should never exceed 23C as this will impact the domes ability to be controlled by the heat mat

3.7. The clone dome that the cuttings are to be placed into should be labelled with the cultivar name and the date that the cuttings were taken. This label may take the form of tape / sticker attached to the dome, or permanent marker directly labelling the outside of the clone dome.

3.8. Using a sterilized scalpel or cutting scissors, take the required number of clones from the mother-plant(s).

3.9. As the cuttings are taken, they are to be placed into an appropriately sterile cup / jug containing RO water or similar cloning solution if recommended by the nutrient line manufacturer.

3.9.1. If a 500mL cup is used, 100-125mL of water / solution should be in the bottom of it to keep the clones fresh during the cloning process.

3.9.2. If a 2L jug is being used, approx 1000mL of solution should be in the bottom of it to keep the clones fresh during the cloning process.

3.9.3. The bottom 1.5 - 4cm should always be submerged in solution until the cutting is plugged to prevent drying up and wilting

3.10. Cuttings are to be taken from a mother plant no more than 185 days old (half a year). Cuttings should only be taken from a healthy / vibrant mother plant.

3.11. Should a mother plant be suffering from stunted growth, or suffering from unhealthy signs of nutrient deficiency / environmental stress / pests or pathogens, another mother plant should be selected or the cloning process delayed.

3.12. Cuttings should be taken from the middle and upper part of the plant.

3.13. Cuttings should be approx 15cm long, avoiding the bent branches on the lower part of the plant, and should be at least 3mm thick at the stem.

3.14. Cuttings should be evenly taken from around the entire mother plant to create a balanced and uniform shape both of the mother plant, but also as well with the cuttings being taken.

When a sufficient number of cuttings have been taken, the following preparations should be undertaken for each clone, one at a time, prior to placing it into the cloning medium:

3.15. Using a scalpel or scissors, manicure the cuttings by trimming the lower nodes and fan leaves flush with the stem.

3.16. Hold the top of a cutting by making a loose fist around it, exposing the blade tips. Cut these with scissors to prevent further growth in those leaves and promote rooting.

3.17. Using a scalpel to cut through the bottom of the stem, apply a cut approx 20-45 degrees from the stem, such that as much plant tissue is exposed over a ~1cm area
The cutting should be approx 12 - 13cm tall at this stage

3.18. Dip the cut end of the stem into the rooting hormone solution. Coat the bottom 2.5cm of the stem by slowly rotating it in the compound for 5 seconds.

3.19. Delicately stick the cut end of the stem, coated with the rooting compound, into the growing medium, approx 2 - 2.5cm deep. Care should be taken not to force the stem into the growing medium and / or break the stem.

3.20. Cuttings should then be placed into the clone dome. Where a rockwool tray is being used, only every-other cell should be used to avoid overcrowding.

3.21. Cuttings should be placed into the dome in a pattern similar to how the 5 dots would be shown on a dice or on dominos.

3.22. Where a tray holds 72 cells, only 36 clones should be placed into that tray.

3.23. Record the number of cuttings taken in the Record Book.

3.24. Place the clone dome into the cloning tent, ensuring that any vents on the dome are closed, and that the lid for the dome tightly covers all edges with no leaves being trapped between the lid and the tray.

3.25. If the clone trays were pre-soaked sufficiently, the clones in rockwool should require feeding again on days 5, 7, 9 and 11 (if applicable), and can be done with the same nutrient solution feed that they were originally soaked in. Application should be of 10-20mL nutrient feed through a syringe on top of each of the individual growing mediums. This may vary for rapid-rooters or jiffy plugs and may not be required, in accordance with manufacturers directions.

3.26. Lighting should remain on 24/7 during the cloning process.

3.27. The clone dome should be left untouched for the first day, but cleaned and “burped” daily afterwards until the 10th day.

3.27.1. This involves removing the clone dome from the clone tent for a period of 5-10 minutes to ensure sufficient CO2 is in the ambient space around the clones.

3.27.2. The lid should then be dried from any excess moisture that has accumulated on it, through the use of a paper towel. Several paper towels may be required to ensure the moisture is completely removed from the dome lid.

3.27.3. Although not required, a further spray with a sanitising agent of the dome lid may be undertaken, using peracetic acid or hypochlorous acid. The dome lid must then be completely wiped clean again afterwards with a paper towel.

3.28. Clones should be checked daily by lifting the grid-insert tray up to inspect for roots and ensure there is no additional nutrient solution trapped underneath. Alternatively if rapid-rooters or jiffy peat pellets are being utilised these should be inspected daily to ensure roots are protruding.

3.29. When a sufficient number of the clones have taken root, a process of hardening off should then take place by leaving the vents open on the lid of the dome. This should take place over approx 2-4 days.

3.29.1. Start with the vents on the top of the dome lid. There should be two, each should be half-open.

3.29.2. The following day the vents on the top of the dome should remain fully opened.

3.29.3. The 3rd day the side vents should then also be half opened. There should be a vent on each end of the dome-lid.

3.29.4. On the 4th and final day, all the vents should be fully opened.

3.30. The clones are now rooted and hardened and ready to be moved into a grow area for vegetative growth.

3.31. Select the required number clones to be kept, choosing the healthiest and most vigorous ones. Note the number to be destroyed according to the disposal process.

# 4. Vegetative growth

The rooted clones are now ready for vegetative growth. This process is expected to take approx 1-2 weeks depending on the desired density of plants in the growspace, the growing medium, and how steady environmental controls are. However, this may take up to 3-4 weeks also depending on the strain, vigour of the clones etc

4.1. Prepare the growing medium for receiving the new clones by pre-soaking it with an appropriate strength feed of vegetative growth nutrients, in

accordance with the manufacturers feed chart.

4.2. Where coco coir is being used, it should come initially dehydrated such that there is no possibility of fungus gnats or other such contaminants being brought into the facility.

4.3. The smallest “safe” size of growing medium should be selected, such as a 6” (Hugo) rockwool cube, or a 1-2 gallon fabric pot for coco coir.

4.3.1. Supplementary perlite should not be added to the coco, as this can cause erratic readings with sensors, and is not necessary.

4.3.2. Where rockwool cubes are used, ensure that the outer plastic wrap is NOT removed.

4.4. Lay out each of the pots / rockwool cubes on the drain trays in the position where they will be growing.

4.4.1. If the plants will be moved in future from a vegetative growth room to a flowering room, the layout can be further condensed.

4.4.2. If the plants will be growing from veg to harvest in the same area, care and consideration should be given to the layout, allowing each plant approx between 400x400mm of canopy space, up to 600x600mm

4.5. One by one, the rooted clones should then be re-placed into their new growing medium. Care must be taken with any roots coming out of the bottom of the clones to ensure they are not pinched during this process.

4.5.1. Where rockwool is used the clones should be inserted into the hole in the top of the cube, and then lightly pressed into place.

4.5.2. Where coco is used, a small hole that is slightly larger than the clone growing medium should be dug out into the coco. The clone should be placed into the hole and then the additional coco lightly moved back over the top of it. The clone should then be lightly pressed down into place to ensure the top part of the coco is sufficiently “packed” around the newly transplanted clone.

4.6. The watering “cap” for rockwool, or “ring” for coco, should then be placed on top of the clone. This should be as central as possible, and where applicable the cap should cover as much of the cube as it can. Where two watering rings are used per-plant, with one smaller inside of another, the innermost ring should be as close to the base of the plant as possible.

4.7. Ensure that any pressure compensating drippers are appropriately attached to the main feed line, or tubing is attached to a pressure compensator and

then onto the watering rings.

4.8. Plants should have a minimum of two drippers / feed lines each, or alternatively the use of a netbow. The target should be as close to 2L/hr as possible to ensure no channeling occurs, and allow ample time for runoff to purge any higher EC nutrients from the medium.

4.9. If the plants are going to be flowering in the same growspace as they are currently, a plastic / non-fibrous / non-porous netting solution may now be installed approx 30 - 50cm from the top of the growing medium, depending on the strain and unique cultivar requirements for training.

4.10. A manual watering dose should be done at completion of the transplanting. This should consist of dosing through an automated watering system. Each pot / cube should then be inspected to ensure that nutrient water has adequately been dosed as a final precaution, with remedial actions taken if not.

4.11. The following environmental targets should be used during the vegetative growth phase:

- 4.11.1. Day Temperature: 24 - 29C (room)
- 4.11.2. Night Temperature: 20 - 21C
- 4.11.3. Room Relative Humidity: 70-75%
- 4.11.4. Initial Room VPD: 0.7 - 0.8 kPa
- 4.11.5. Final Room VPD: 0.9 - 1.0 kPa
- 4.11.6. Initial PAR: 300 - 400 µmol/m2/s
- 4.11.7. Final PAR: 900 - 1000 µmol/m2/s
- 4.11.8. CO2: 1200 - 1500ppm
- 4.11.9. The initial targets should be for transplant, and the final targets for as the plants move into their flowering photoperiod.

4.12. Lighting should be increased daily, ideally at a rate of 50-100µmol/s per day, roughly averaging to 75µmol/s per day

4.13. Plants should have a nylon / plastic netting placed over them after approx 1 week of vegetative growth, to allow training of the plant. This is likely to be approx 30cm from the top of the rockwool cube / pot, depending on the cultivar.

- 4.13.1. Elastic / fabric netting / rope is never to be used, as this is a magnet for microbial contamination.

4.14. As growth takes place, training through the netting should too, such that the Apical dominant branch is woven through the trellis to create an even and full canopy cover.

- 4.14.1. The process of “topping” a plant and removing the apically dominant growth with scissors or a scalpel should ***not*** be undertaken as a general practice, as this significantly slows the growth to the remainder of the plant.

4.14.2. Instead of topping a plant, increasing plant density and shortening vegetative growth time should be used instead.

4.14.3. Some genetics will perform best with “multi-topping”, where each plant is topped twice. Although permitted, an increase in plant density is still preferable.

4.15. Any leaves / cuttings that may need to be trimmed, or resulting biomass from any topping, is to be disposed of in accordance with the appropriate disposal process, ensuring that all cannabis biomass stays separate from general waste.

## 5. Flowering

During the flowering process is where a lot of the yield and potency is derived.
Plants that are well defoliated and canopy trained in accordance with the process below should expect to see 40-120%+ useable yield compared to when the plants are left to their own devices. In addition, we’ve observed a 30-50% increase in cannabinoids on well defoliated plants, as they are better able to make use of a “finishing fade”, and the increased stress from lack of nitrogen**. It’s this removal of nitrogen that pushes up overall cannabinoid levels in the final week(s) of flowering.**
Defoliation should also be undertaken to ensure a more harmonious application of light to the flower bud-sites, helping ensure a consistency of potency across the flower from top to bottom.

5.1. The plants should move to a 12/12 or 13/11 (Lights on / Lights off) photoperiod at the completion of their vegetative growth phase.

5.2. The following environmental targets should be used during the flowering growth phase:

5.2.1. Day Temperature: 21 - 25C (room)
5.2.2. Initial Room VPD: 1.0 - 1.1 kPa
5.2.3. Final Room VPD: 1.3 - 1.4 kPa
5.2.4. Initial PAR: 800 - 1100 µmol/m2/s
5.2.5. Final PAR: 1200 - 1300 µmol/m2/s (Depending on the cultivar requirements)
5.2.6. CO2: 1500 - 2000ppm
5.2.7. The initial targets should be for the first day of each photoperiod phase, and the final targets for the plants as they are ready for harvest.

5.2.8. The plants should progressively be acclimated to the PAR targets as quickly as is possible during the flowering period, and are not just a final-day goal.

5.3. On the first day of flower photoperiod commencing (Or potentially the few days prior depending on the cultivar), an initial defoliation should take place of the plants. This is likely to include the following:

5.3.1. The lower half of the plant being stripped bare
5.3.2. Removal of any branches that have not grown up to reach the netting
5.3.3. Removal of any fan leaves
5.3.4. Removal of any leaves / prospective bud-sites that would be blocked by another part of the plant (or is blocking another)
5.3.5. Provided the high CO2 environment is in-place, the plants should not need any further ‘recovery” time.
5.3.6. Care should be taken to allocate sufficient time such that the full defoliation can be completed within 2 working days (ideally all within the same day). This is to ensure that the growth, and subsequently the nutrient feed requirements, for all the plants are relatively similar.

5.4. Any leaves / cuttings are to be disposed of in accordance with the appropriate disposal process, ensuring that all cannabis biomass stays separate from general waste.

5.5. During the first 3 weeks of the flowering photoperiod (The “stretch” phase), the plant will need regular guidance through the netting to ensure that the branches are not too close to one another, such that when the buds begin to form and grow they will not be packed too tightly and end up with budrot / botrytis.

5.6. The process of “tucking” and training the plant should take place regularly, and the plant monitored ideally daily to ensure it is well structured and an even canopy.
5.6.1. Tucking the plants through the netting during approx the first 10 days of the flower cycle will allow the plant canopy to be more unified prior to the “stretch” phase of flower growth.
5.6.2. Anticipating this, cultivators should use the opportunity to ensure the canopy is as uniform as possible such that when the branches stretch upwards they should all be receiving equivalent levels of PAR and are spaced well throughout the netting structure

5.7. On or around the 21st day since the change of photoperiod to the flowering phase, a secondary defoliation should take place. This will require the following:
5.7.1. Removal of any lower bud-sites that are forming that are underneath where the plant was previously defoliated
5.7.2. Removal of any fan leaves
5.7.3. Removal of any sugar leaves that are growing trichomes that have a stem longer than approx 1cm
5.7.4. Removal of any branches that have “fallen behind” and are not keeping up with the growth of the others
5.7.5. The secondary defoliation will likely require more time than the initial defoliation and consideration for the time taken should be afforded to ensure it can take place within 2 working days. This is to ensure that the growth, and subsequently the nutrient feed requirements, for all the plants are relatively similar.

5.7.6. Care MUST be taken during defoliation to leave as little additional “stem” on fan-leaves as possible, as these are a leading cause of botrytis growth as the plant dries.

5.7.7. During defoliation, any watches or bracelets should be removed to prevent being caught on netting, even if long-sleeved protection is being utilized.

5.8. No further IPM / foliar spraying should take place after the 21st day of flowering when buds have begun to form, with the possible exception of a light PAA antimicrobial treatment.

5.9. The VPD should be the primary number that is watched / monitored, with temperature to a certain extent being secondary, and the humidity only used as a measurement to calculate VPD.

5.10. Perform checks daily of trichome ripeness levels throughout the last 14 days of *expected* flowering cycles, making plans for harvesting.

5.11. Where possible, a “finishing fade” should be undertaken during the last 7-14 days (cultivar dependent). This finishing fade contributes to the final “stress” of the plant to increase cannabinoid content as well as other secondary metabolites.

5.11.1. This should be the removal of only nitrogen from the feed while maintaining consistent ratios of other micro and macronutrients

5.12. A “full flush” with just water should never be undertaken, as this is one of the leading causes of botrytis and bud rot.

# 6. Harvesting and drying

6.1. When the plant has approx 15-25% amber trichomes, the plants should be harvested.

6.2. Clean any shears / scissors to be used in advance with bleach, isopropyl alcohol or similar cleaning + sterilising agents.

6.3. Run new lines of plastic thread / coathangers / hooks above the cultivation area, so that the plants can be hung to dry. If there is a separate drying area, the preparations can be done there.

6.3.1. These thread and coathangers should be plastic or metal only, never wooden / fabric, as that encourages microbial contamination.

6.4. Dim the lights to make working while hanging easier.

6.5. Set the room temperature to be as close to 16C as is possible, and set the dehumidification to a target of 30-50% RH.

6.5.1. After 1-2 days, adjust the target RH levels for the room to be 60-65% to allow the plant to slowly finish drying out for the remainder.

6.6. Disable any “photoperiod start / end” automations that would turn lighting on, or would adjust any AC and dehumidification settings.

6.7. Any oscillating fans should be turned off or ensure they are facing away from the dring flower while providing air movement. Other fans that are not used as carbon filtration, should be temporarily disabled to ensure they do not over-dry the plants.

6.8. Cut the plant to be harvested as close to the rockwool cube / growing medium as is reasonably possible with the use of shears.

6.9. Remove the plant from the trellis netting, and hang it upside down on the hooks or coathangers.

6.10. Any large fan-leaves that have re-grown may be removed at this point as part of a “bucking” process. These are to be disposed of safely and securely in accordance with the relevant Biomass disposal process.

6.11. Plants should be checked regularly to ensure they do not over-dry. Initially this may happen on a “daily” basis, but after a couple of days this may need to be several times per-day.

6.12. The dehumidification should then move automatically from the dehumidifiers as the setpoint is reached, to just dehumidification through air conditioning. This

6.12.1. While checking dryness, if the plants are found to be close enough to 60%$a_w$ towards the end of the work-day, then all dehumidification should be disabled overnight so that the plants do not over-dry.

6.12.2. Air conditioning should then be set to heat / cool mode, rather than a dry setting.

6.13. Prior to any trimming, 5 plants should be marked and used as a representative sample. The biomass from each of these plants should be separately weighed, and noted down both independently before trimming, and after trimming, and as part of the final harvest result.

6.14. If the plants are unable to be trimmed / packed for a period of time, they should go into large Terploc packages and stored inside of large totes.

# 7. Trimming

7.1. During the trimming process, ensure that the lights are not at full brightness so as not to damage the flower, while also maintaining adequate visibility in the trimming area.

7.2. If there is no dedicated area, the room in which cultivation took place, or drying took place, can be utilised.

7.3. Ensure that the temperature / humidity targets are set as close as possible to 16C and 60% RH.

7.4. Any scissors should be cleaned prior to use. Ideally scissors that are used for trimming / manicuring should not also be used as part of the day-to-day maintenance and cultivation processes.

7.5. If the offtake agreement requires that the plants be “stem on”, then cut the branches with shears, such that there is approx 10cm of stem still from the lowest bud on the branch, or in accordance with any specific requirements of the offtake agreement.

- 7.5.1. The resulting branches with bud can then be weighed, and placed into a PVC-lined or Terploc-lined tote, and the lid placed on each respective tote.
- 7.5.2. Ensure that the branches from the representative sample plant weights are noted down separately.

7.6. If the offtake agreement requires that the plants be manicured, then it will need to be decided if the plants are to be hand-trimmed, machine-trimmed, or a combination of the two.

- 7.6.1. If applicable, set up the trimming machine, ensuring it has been appropriately cleaned and calibrated prior to use.
- 7.6.2. Take the representative sample plants and trim them first
  - 7.6.2.1. If they are being passed through a trimming machine, ensure only one at a time is completed.
  - 7.6.2.2. If they are being hand-trimmed, ensure that only one at a time is being worked on and that it is kept independent from all others.
- 7.6.3. If a trimmer is being used, cut off the bud from the main stem to be fed into the Hopper. The majority of larger fan-leaves should have already been defoliated during cultivation so only sugar leaves should be remaining.
- 7.6.4. When all of the bud has gone through the machine, if applicable, they may be either further hand-trimmed, or if required individual buds can be fed through the trimmer machine a second time to ensure a good cut.

7.6.5. As the bud comes out of the machine, it should fall into a PVC lined tote.

7.7. When the flower has been appropriately trimmed (stem on or off) then preparation should be made for packaging in accordance with the offtake agreement requirements.

7.8. Until the flower is ready to be packed according to buyers' requirements, it should be stored for curing. The use of Grove Terploc two-way breathable bags, tote-liners or drum-liners should be used to ensure the flower is cured and maintains an appropriate level of moisture (~61%).

7.9. Should an incident arise, and a flower bud is dropped during the Trimming process that is rendered unsuitable for final sale or transportation, the unusable flower material is to be disposed of in accordance with the relevant Biomass disposal process. This is due to microbial contamination and the flower should not be sold.

# 8. Packaging

8.1. Where the offtake requires 1lb or 500g lots, arrangements should be made for smaller bags. Where offtake requires 2lb or 1kg lots, arrangements should be made for slightly larger bags.

8.1.1. If an offtake agreement is fine with whole-totes or drums being used without further packaging, the number of totes should be ascertained and the weight of each noted.

8.2. Trade-scales must be utilized for accuracy of weighed product.

8.3. Trade-scales calibration certificate should be checked to ensure that they are still accurately calibrated. The surface should be level, and the indicator confirms the scales are sufficiently level.

8.3.1. If the scales are outside of their calibration accuracy period, Wedderburn should be contacted, or the manufacturer of the scales, to have them calibrated prior to any further work commencing.

8.4. Each individual package should be appropriately weighed out, and then vacuum-sealed. This means the package should be air-tight, but should not be vacuum packed and all the air removed from it.

8.5. Where possible, Modified Atmospheric Packaging (MAP) should be used with a nitrogen back-flush, to prolong the shelf-life of the flower.

8.6. Label each container / bag with as “Medicinal Cannabis”, with the company name, the cultivar name, date of harvest, net weight, date of packaging, and the bag number for the pack starting at 1. Once labelled, move it to be

appropriately stored until it can be delivered to the offtake buyer.

8.7. Should an incident arise, and a flower bud is dropped during the Packaging process that is rendered unsuitable for final sale or transportation, the unusable flower material is to be disposed of in accordance with the relevant disposal process. This is due to microbial contamination and the flower should not be sold.

8.8. Transfer the packaged cannabis into the safe / vault area as applicable, until it is ready for transportation.

## 9. Testing

Following a harvest, the dried and cured biomass will need to be tested to ensure that it meets the requirements for any offtake agreement, such as THC / CBD levels.

Where the offtake agreement requires NZ MQS testing, testing laboratories must be GMP accredited or accredited to ISO 17025 for the test methods specified in the NZ MQS and hold a license that entitles the laboratory to receive cannabis i.e., a Controlled Drug license or a Medicinal Cannabis License with Possess for Manufacturing Activity in New Zealand.

If NZ MQS testing is not a requirement for the offtake agreement, final testing may be carried out by the recipient of the starting materials specified in the offtake agreement, or by an entity of their choosing.

Laboratories performing “critical” tests for assessment for compliance with the NZ MQS must be GMP accredited, and should be appropriately vetted prior to sending samples for testing.

Approved Laboratories are included in the list of Approved Recipients.

9.1. Record the weight of all samples taken.

9.2. Cannabis sent to a testing facility in the greater Auckland area such as Cannalytic Profiling or Hill Laboratories may be driven by staff, with the appropriate shipping procedures undertaken.I trave

9.3. Use a 3rd-party courier company to transport cannabis samples sent to a laboratory outside of Auckland, or internationally.

9.4. Take a sample from the smaller bag containing part-pound/excess amounts For initial indicator testing.

9.5. Take a sample representative of the batch to meet the requirements of the New Zealand MQS, following the sampling plan in Chapter 2.8.20 Herbal Drugs: sampling and sample preparation of the European Pharmacopeia Volume 10 to meet the requirements of the NZ MQS.

9.6. A sample representative of the batch is taken as follows:

9.6.1. Calculate the size of the bulk sample required for the size of the batch of flowers.

| Mass of Cannabis in batch (kg) | Bulk Sample Size as % of the batch |
|---|---|
| < 50 | 1.00* |
| 50 - 100 | 0.50 |
| > 100 - 250 | 0.25 |
| > 250 - 500 | 0.20 |
| > 500 - 1000 | 0.18 |
| > 2500 - 5000 | 0.15 |
| > 5000 - 10000 | 0.10 |
| >10000 - 25000 | 0.08 |

9.6.2. If the batch size is greater than 250,000kg, divide into sub-batches < 250,000kg and sample each sub-batch as above

9.6.3. The sample size must be at least 125g.

9.6.4. For example:

Sample size for a 25kg batch = 25kg x 1%

= 0.25kg

= 250g

Sample size for 600kg batch = 600kg x 0.18%

= 1.08kg

= 1080g

9.6.5. Calculate the number of containers to sample:

| Number of containers in batch (N) | Number of containers to sample (n) |
|---|---|
| 1-3 | all |
| > 3 | n* = √N+1 |

9.6.6. * where n is rounded up to the nearest integer

9.6.7. For example:

25 bags in batch = √25 + 1

= 5 + 1

= 6 bags to sample

300 bags in batch = √300 + 1

= 17.3 + 1

= 18.3

= 19 bags to sample
(rounded up to nearest integer)

9.6.8. Divide the total sample size from I by the number of containers to be sampled from ii to calculate the amount to be taken from each container.

9.6.9. For example:

25kg batch in 25 bags of 1kg = 250g ÷ 6 bags

= 41.67g per bag

= 42g per bag

600kg batch in 300 bags of 2kg = 1080g ÷ 19 bags

= 56.84g per bag

57g per bag

9.6.10. Randomly select the required number of containers from throughout the batch.

9.6.11. Take one sample from each selected container. The sample is taken from the upper, middle and lower sections of the container so that the sample is representative of the different parts of the container.

9.6.12. Place a Sampled label on each container and record the date sampled and the amount taken.

9.6.13. Prepare the bulk sample by combining and thoroughly mixing the samples from each of the randomly selected containers.

9.6.14. Prepare the testing sample by reducing the size of the bulk sample by quartering if required. To quarter the bulk sample, place the mixed bulk sample in a level, square shaped heap and divide the heap diagonally into 4 equal sized parts. Take 2 opposite quarters and remix. Repeat the process as many times as needed until the minimum sample size for testing is obtained. The minimum test sample size for flowers is 250g or the entire sample if the bulk sample is less than 250g.

9.6.15. Keep the remaining bulk sample as a retention sample.

9.6.16. Pass the test sample through a 1mm sieve ONCE. A maximum of 10% of the test sample may be left on the sieve, and a maximum of 2% of the total test sample may be bigger than 1.5mm in size.

9.6.17. Remix the sieve and retained portions of the sample, then send to the laboratory for testing.

9.6.18. The testing sample may be split to send to different laboratories for testing if required.

## Hop Latent Viroid Testing

9.7. Testing for HLVd should be undertaken regularly to ensure no contamination of plant materials has taken place. Regular testing ensures an early warning of any issues that may take place.

9.8. This shall be undertaken either:

9.8.1. Within a minimum of 1 month prior to sending any live clones to another license holder if purchased

9.8.2. Every 3-6 months otherwise

9.9. DNA samples shall be tested in accordance with testing laboratory specifications, but should include:

9.9.1. DNA samples taken from the top-most sugar leaf

9.9.2. DNA samples taken from the lower fan leaves

9.9.3. DNA samples taken from the rootmass

9.10. This ensures that a broad range of samples are taken, as the viroid can be difficult to detect even with qPCR and similar testing methodologies. This is due to how the viroid moves around the plant.

9.11. Should a test result come back positive, the genetics may be sent off for Tissue Culture sterilization of at least 3x Tissue Culture runs.

9.12. All other live plants should be destroyed immediately, any and all surfaces that may have come into contact with any form of human touch cleaned with Bleach concentrate + Peracetic Acid.

9.12.1. This includes scissors, measuring equipment etc

9.13. Prior to receiving in new / clean genetics, the genetics shall be tested for HLVd and a negative test result returned.

## 10. Cleaning / room reset

There are two stages the grower should think of for every aspect of “cleaning”:
1. Scrubbing / removing debris / cleaning
2. Sanitize / sterilize
At all times when cleaning, it is important to be mindful that both steps take place to ensure that additional bio-burden is not present which may impact the plants / flower.

Post-harvest, each cultivation room should go through a full “reset” of the room, cleaned such that it is as-new.

10.1. Cover any sensors that are not able to get wet. Use a ziplock bag or similar over them, with the cables coming out of the bottom of the bag.

10.1.1. Ensure that there is a loop of any cable coming out of the bottom of the bag, such that if it gets water on it, gravity will take the water away from the sensor.

10.1.2. If needed, tape the bag temporarily to something nearby to secure it and prevent it falling.

10.2. Clear larger debris away, such as any leaves / stems that may be remaining.

10.3. If necessary, remove loose irrigation items such as netbows or rockwool caps.

10.3.1. These can be cleaned and then steralized in a large tub or sink.

10.3.2. A brush may need to be used to appropriately remove any debris, at the staffs discretion.

10.4. Ensure there are no other materials in the room which will be impacted if they get wet.

10.5. The room should be sprayed down at pressure, such as with a low pressure sprayer, using an attachment with a cleaning agent. This includes the walls, floor, flood / tray tables etc.

10.5.1. This cleaning agent may be Sugar Soap, Osmoslay or similar.

10.5.2. Ensure that appropriate PPE is used such as overalls, gloves, mask etc during this process.

10.6. Once the room has been sprayed down, spot-clean any remaining marks with a cloth, scrubbing brush, or scouring pad as required.

10.7. Ensure any remaining water / runoff from the cleaning has been appropriately mopped up or disposed of.

10.8. The room should then be sprayed with something such as Peracetic Acid at 0.3% dilution rate, in order to sanitize the room.

10.8.1. Ensure that appropriate PPE is used such as overalls, gloves, mask etc during this process.

10.9. Ensure any surplus water has been appropriately mopped up or disposed of, and then allow the room to dry out prior to moving in any new plants. This is to ensure that the humidity levels are not adversely impacted by any water remaining.

10.10. Run a solution of Hypochlorous Acid through any feed-lines, measuring the runoff to ensure that the EC is as expected and there are no remaining nutrients from a previous growth cycle coming through.

10.10.1. Start by removing the nutrient reservoir supply and feeding straight RO water through the pipes.

10.10.2. Measure runoff by selecting the location furthest from the pump, fill a small measuring cup with 100mL runoff then check the EC.

10.10.3. Empty the measuring cup and repeat until the EC measures =< 0.2 EC. This accounts for any salts that may be being purged with the RO feed.

10.10.4. Then fill a reservoir / bucket with RO water and a concentrate of Hypochlorous Acid. If this concentrate is at 0.4 EC you will know when the Hypochlorous Acid has reached the drippers. This feed of Hypochlorous Acid mix will ensure the removal of any salt buildup.

10.10.5. Repeat again with RO water until it measures =< 0.2 EC, then repeat the previous step with Peracetic Acid to sterilize the lines.

10.10.6. Reattach the main reservoir feed with the appropriate nutrients (Vege / Flower etc) and continue to purge the lines until they show the correct EC.

10.11. Remove any coverings from sensors, re-apply any growing medium probes, and check each sensors readings for consistency and updates.

10.12. If required, a mix of nutrients should be placed in a large bucket / tote to prepare rockwool cubes or rehydrate coco, in accordance with manufacturer specifications. This is to prevent channelling of liquid through a completely dry growing medium.

10.13. Rockwool cubes / coco coir may then be placed on the trays and any caps setup again, with the intention of preparing them for a new growth cycle. A top-down feed of nutrients can then be flushed through them to reach saturation point.

10.14. A heat treatment may also be conducted whereby the Air Conditioning is set to maximum heat and lights turned on to full, for a period of 30-60 minutes. This will assist with drying out the room but also killing specific types of mites once a room temperature of 40C+ is reached.

10.15. If applicable, any automations for Photoperiod Begin / End may now be re-enabled.

# 11. Pest Management / IPM

The Integrated Pest Management plan is aimed at most pests and diseases; however plants may still come with a variety of conditions, such as fungal / bacterial infection, or bug / mite infestation. These will require treatment of any individually affected plants with an approved pesticide product in accordance with Misuse of Drugs (Medicinal Cannabis) Regulations 2019. A list of acceptable pesticides is published on the Ministry of Health website.

## Foliar spray

11.1. All pesticides will be used in accordance with manufacturer instructions, including any withholding periods, to ensure harvested cannabis meets the pesticide residue requirements of the NZ MQS and/or customers.

11.2. Plants shall only be treated during mothering, cloning, vegetative growth and up until the 21st day of flowering. No further treatment should take place after that.

11.3. IPM / Foliar should be undertaken weekly as a preventative measure

11.3.1. It may be undertaken 3x per-week when acting curatively, with small / low pest levels

11.3.2. For serious infestations that occur after that timeframe, the plants / season should be pulled and destroyed in their entirety.

11.3.3. Where Sulfur is used, it should be at 1-3 tablespoons per litre, preferably 3 tablespoons, and should only be applied a maximum of once every 2 weeks.

11.4. Foliar spray should be undertaken when the growing media is fully saturated, such as the transition from P1 to P2 irrigation, to ensure that the IPM is not absorbed through the leaves.

11.4.1. When done during lights-off during flower to avoid burning, it should be done at the transition from P2 to P3 and the growing media specifically fully saturated with nutrients again to prevent absorption of the IPM through the leaves.

11.5. When done by hand, foliar spray should always ensure that the top of the media is first sprayed, then up the stalk, underside of the leaves, then the top of the plant.

## Beneficial bugs

Beneficial bugs may be used, as they are harmless themselves to the cannabis plant at all stages of growth. This can be done instead of, or in addition to regular IPM spraying at the cultivators discretion.

11.6. Beneficial bugs can also be released regularly into the environment, in accordance with the suppliers instructions for bug management / pest control. This may be proactively undertaken, or reactively.

11.7. Should there be no Aphids, Spider Mites or similar for the beneficial bugs to feed on, they will simply die off and fall to the ground as part of their life cycle and leave the plant unharmed.

11.8. Care should be taken to ensure that any treatment / application of beneficial bugs will not get into the irrigation system. Release-boxes or similar that can be hung on a plant leaf should be utilised to minimise the amount of bugs and

their accompanying media that falls into the trays / irrigation / wastewater system.

### Supplementary pest control measures

11.9. Alternative measures such as sticky traps may be used. These are especially useful as an early visual indicator of aphids / gnats, and can be placed at the base of the plant stem, above the canopy, or both.

11.10. Further measures may be taken outside of the growspace, such as rodent traps.

11.11. In order to preserve the integrity of the flowers, the Pest Management solution shall not include fumigators or other such airborne methods of control anywhere in the facility, which may inadvertently end up reaching the cultivation rooms.

## 12. Mixing nutrients

12.1. Staff should ensure that gloves are not torn and provide adequate protection prior to commencement of the nutrient mixing procedures. When handling nutrients, additional protection may be required over the standard nitrile gloves.

12.2. At all times, a feed chart should be posted on the wall, or within easy access of staff for following.

12.3. Nutrients shall always be kept in a labelled bottle, container, jug, tub, tote or barrel with a lid firmly affixed, to prevent any contamination / evaporation.

12.4. Ensure there is a dedicated measurement device for each, so as to not cross-contaminate (for example, between Part A vs Part B, or Core vs Bloom nutrients), any excess concentrate can be returned to the nutrient supply container.

12.4.1. This applies to measuring jugs, syringes, as well as any concentrate containers.

12.5. RO water must always be used, to ensure no heavy metal contaminants come through on the water.

**12.6.** Care must be taken when mixing to ensure the vendors guidelines are followed regarding the mix-order. Often Silica / pH Up should be added first, followed by the Part B / Bloom / Grow nutrients, and the Part A / Core / Fade added last. **This is to prevent calcium being added to a high pH solution which**

**can cause precipitation.**

12.7. Nutrients may either be mixed into an existing batch tank, provided any feeding automations are temporarily disabled, or mixed into a secondary batch tank to then be pumped into the main tank afterwards.

12.8. After all interactions with nutrients, fresh gloves should be put on to ensure that no contamination from nutrient concentration / feed mixes interacts with the plants.

12.9. Pouring of nutrients should never be physically done “over top of” any reservoirs or stock mixes, for example when pouring from a pH Up bottle into a measuring cup. This should be done over top of a level bench or similar, to ensure that in the event of any spillage it does not contaminate the nutrients physically below it.

12.10. Should any amount be spilled, this is to be cleaned immediately with a disposable cloth and wiped down with additional cleaning solution. This includes clothing or skin contact.

# Disposal & record keeping

## 13. Cannabis record keeping

13.1. Records of cannabis in / out shall be kept to ensure regulatory compliance and aid with tracking / diversion prevention. These records should not be kept in an easily manipulated spreadsheet or other form.

13.1.1. It is recommended to use GRACe portal by Genoa Engineering for plant / flower tracking.

13.1.2. Alternatives such as Canix or OpenTHC may be used.

13.2. Monthly reports of any cannabis materials (dried flower, plants) sent out from the facility shall be emailed to the Medicinal Cannabis Agency to ensure adherence with Regulation 70. This shall include:

13.2.1. the date the items were sent

13.2.2. description of cannabis type

13.2.3. quantity / volume

13.2.4. receiver details (name + address)

13.3. This shall be sent to the Medicinal Cannabis Agency within 7 days of the end of each month to medicinal_cannabis@health.govt.nz

13.4. This report is to include all cannabis sent domestically to another person / company authorized to receive it (such as through a Medicinal Cannabis License with Cultivation / Manufacture activity specified), or any exported

product.

13.5. A Chain of Custody document shall be kept for all materials in / out.
- 13.5.1. One copy shall be kept by the receiver
- 13.5.2. Another copy should be photographed / scanned and sent to the sender.

13.6. An additional annual stock-take of all cannabis biomass (wet / dry / seeds / plants / mothers etc) shall be conducted by, or reported to for sign-off by, a named Responsible Person on the License. This is to take place as of 1st January each year, reported by 31st Jan to the Agency. A template that can be used is available under §38 - Additional Items.

13.7. A printed copy of the version of these SOPs that has been authorized for use by the Medicinal Cannabis Agency is to remain on-site at all times

13.8. Documents such as SOPs, Floorplan etc shall always include a version number. This may be in the form of Semantic Versioning (Major.Minor.Patch) format, or as described in ISO 8601.

## 14. Incident management

14.1. If an incident relating to the security of the facility such as a security camera being obstructed / non-operational, an attempted break-in is noticed, the exterior of the Facility is defaced or unauthorised activity inside the Secure Facility is identified, the Incident Registry shall be completed immediately by the staff who noticed the incident.

14.2. Enter the details of the Incident in the Incident Registry and report the Incident to the named Responsible Person on the Medicinal Cannabis License immediately.
- 14.2.1. Include as many details as possible. As a minimum, the date and time the incident was found, who reported the incident and a detailed account of what happened is required.

14.3. Take immediate corrective action to resolve the incident and limit any further exposure, such as clearing the obstruction from the security camera, requesting an electrician visit site to repair the non-operational device, or a builder to repair any attempted break-in damage.

14.4. Review CCTV footage to establish the cause of the incident. Several days footage may need to be reviewed to establish if the premises are under surveillance in preparation for an attempted break-in.

14.5. Review door access logs to determine if there has been any unauthorised access. Record review in the Incident Registry.

14.5.1. If any unauthorised access has been detected, complete a stocktake of all cannabis materials, including plants / clones and details noted in the incident.

14.6. Identify and implement actions to prevent a re-occurrence of the Incident if possible.

14.7. Report any incidents such as an attempted break-in or other similar event that may involve the attempted removal / diversion of restricted cannabis biomass from the Facility, to the Director General of Health, Ministry of Health, and the New Zealand Police.

## 15. Record adjustment

Every time a discrepancy or disposal of biomass occurs, the staff must record an entry to ensure accurate accounting of any and all seeds, cuttings, clones, plants, wet harvest materials and cured / dried flowers.

15.1. If the adjustment being made is for dried materials, adjust the quantity of cannabis in the Record Book.

15.2. Reconcile seeds and packaged cannabis in the vault, noting the variety of seeds, date of harvest of cannabis material etc.

15.3. If any cannabis is missing, the Responsible Personnel shall log an incident in the Incident Registry and immediately notify the Director General of Health, Ministry of Health, and the New Zealand Police.

15.4. Review CCTV footage and Access logs to try to identify how and when cannabis was diverted. Record the investigation in the Incident Registry.

15.5. Identify and implement preventative actions to prevent a recurrence.

## 16. Recall / return of biomass

In the event a recall or return of biomass is deemed necessary, a manifest will be provided by the returning body with the weighed amounts, season details, and information regarding the requirement for the return / recall of the biomass.

Recalled / returned biomass is expected to have remained within New Zealand for the purposes of this document, until such a time as a Medicinal Cannabis Agency - Supply license is obtained. If the cannabis has been exported by another license holder, any recall of the exported material will be the responsibility of the exporter. This process will be

followed once the cannabis is returned to New Zealand. As such the Recall / return of biomass process should be viewed through that perspective.

16.1. Recalled / returned biomass will have Transporting Personnel arranged by the sending entity. However this may require Authorized Personnel to attend a 3rd-party location and escort the Transporting Personnel.

16.2. A shipping manifest should always be obtained prior to leaving the 3rd-party site by the Transporting Personnel.

16.3. Staff shall be available for receiving the returned / recalled materials to the Secure Facility in keeping with the Sending / Receiving biomass process.

16.4. Weigh the biomass immediately once received at the Secure Facility and reconcile against the shipping manifest.

16.5. Sign the manifest and send a copy to the sender if required.

16.6. The recalled / returned biomass shall need to be assessed by staff upon return to the Facility, prior to being accepted back into any stock stored in the Vault, or alternatively disposed of immediately in accordance with the Disposal of biomass process.

## 17. Disposal of biomass

Any clones or seedlings that fail to take root, die off for any other reason, or are simply discarded after the seedlings for a season have been chosen, will need to be disposed of. When disposed of, any applicable rockwool must also be included for disposal.

This same procedure applies to biowaste taken from the plants in the middle of a growth season, such as to fan leaves that are removed, or branches that are pruned.

17.1. Place discarded biomass in a marked bio waste bin that is inside of the respective room (Cloning Area, Flower / Vege room, or Mother Area), and the lid placed back on top of the bin at all times. This bin is lined with a bag to assist with transport of the discarded biomass. Only biomass that is to be securely disposed of is to be placed into this bin.

17.2. No discarded biomass is to be placed in the bins marked for general rubbish disposal.

17.3. Record all clone / seedling / plants that are disposed of in the Record Book following the Record Book adjustment process for proper accounting of all plants.

17.4. Take the bag out of the secure bin. Put a replacement bin liner in the bin as soon as the previous bag has been removed.

17.5. If the discarded biomass is being shredded, take the contents of the bag containing the discarded biomass and put it through the mulcher. The shredded biomass is collected on the other side into a new temporary bin / bag.

17.6. Add an additional 100% mass of soil / coco coir / kitty litter to the biomass to the shredded biomass and mix.

17.6.1. If the substrate is rockwool, the use of coco coir is permitted as an additive. If the substrate was coco coir, then an alternative such as soil, kitty litter, kitchen food scraps, oil etc must be used instead so that the rendered substrate is not recognizable by any parties that would attempt diversion

17.7. Place the resulting shredded and mixed biowaste in the waste for disposal and transfer to the Disposal Area. This bin should remain locked while on-site until such a time at which it is able to be put out for collection with general waste.

## 18. General rubbish disposal

18.1. General rubbish materials that do not consist of Discarded biomass (Such as staff lunch, packaging etc.) are to be placed in rubbish bins separately in keeping with the regional council rubbish collection.

**18.2. Rubbish placed in general rubbish bins must not ever contain any cannabis biomass.**

18.3. Recycling may also be undertaken in separately marked bins.

18.4. Any bin that is not marked for General Rubbish or for Recycling is presumed to be a Discarded biomass bin and should be treated as such, to ensure that no cannabis biomass is ever put out for a general rubbish collection. In the event an issue with a label occurs, at the soonest possible time this should be replaced and the bins clearly marked.

# Maintenance

## 19. Cleaning

19.1. Cleaning of the facility may only be undertaken by staff with access clearance to the relevant areas.

19.2. Where specialist cleaning is required, external contractors may be engaged. All attempts should be made for in-house cleaning as a priority, before engaging these external contractors.

19.2.1. They will need to be supervised appropriately during their time on-site.

19.2.2. Site access should be minimized along with exposure to any cannabis materials.

19.3. When emptying any vacuum / rubbish bag, ensure it is placed into the appropriate bin inside the current room, depending on if the contents contains cannabis materials or not.

19.4. Additional care should be taken while cleaning the floor, walls, carbon / HEPA filters etc such that no contaminants / bacteria could come into contact with the plants.

# 20. Scheduled / unscheduled maintenance

There are items such as CO2 canisters that need to be replaced as / when they are running low, or batteries in IoT Sensors need changing.

20.1. **At no time shall security cameras be battery operated. Cameras must be cabled, with power provided through PoE.**

20.2. Batteries on UPS should be checked regularly to ensure they hold capacity.

20.3. Act on and remedy alerts as soon as possible. Key staff should be notified through an alerts system to their cellphone that the sensor batteries are getting low (<10%). Additionally alerts may be given if a sensor provides the same reading consecutively too many times.

## Battery replacement

20.4. Ensure the correct battery types are ready and available prior to commencing maintenance.

20.5. Remove the devices' battery protection, take the old batteries out of the device and place them to one side so they are not mixed up with fresh batteries.

20.6. Install new batteries immediately, then replace the protective cover.

20.7. Confirm that the device has shown it is operational again.

20.8. Dispose of the old batteries in a general waste bin.

### $CO_2$ maintenance

20.9. For $CO_2$ bottle replacement, the Authorized Personnel shall ensure that there is sufficient stock ready for use and make arrangements for a replacement order if the stock levels are getting low.

20.10. Bring the new bottle into the applicable room and place it next to the existing empty $CO_2$ bottle.

20.11. Decouple the regulator from the empty $CO_2$ bottle, and place onto the new $CO_2$ bottle.

20.12. Turn on the new $CO_2$ bottle to visibly confirm that it is showing a pressured feed through the regulator.

20.13. Remove the old bottle from the area and place it ready for removal from the premises.

## 21. Instrument and sensor cleaning / calibration

21.1. There are a variety of sensors and instruments such as pH / TDS sensors that need to be regularly calibrated, including but not limited to:
* pH probes
* TDS / EC metres
* CO2 sensors
* CO2 regulators / valves
* Flowmeters
* Peristaltic pumps
* Float sensors
* Reservoir pumps
* Reverse osmosis filtration

21.2. Visually inspect all equipment weekly

21.3. Calibrate all sensors where possible on a seasonal basis as is required, with pH and TDS / EC metres potentially being recalibrated more frequently (monthly) in accordance with manufacturer guidance.

21.4. Additional care shall be taken to ensure that the temperature of calibration liquid is also maintained during calibration in accordance with manufacturer guidance.

# Site access / security

## 22. Inspections and testing

22.1. Daily perimeter checks should be undertaken to ensure that there has been no attempted break-ins.

22.2. Inspect all security lights and CCTV cameras at the perimetre to ensure these are operational. This may be done remotely through the CCTV system.

22.3. Regular checks should take place to ensure there is nothing stored outside of the premises (such as a ladder) that may give access to the roof.

22.4. Check doors and windows to ensure these are operational and undamaged.

22.5. If anything is noted, immediate remediation should take place to ensure the minimization of any potential for diversion of cannabis materials.

22.6. In the event of any issues relating to access to cannabis materials, this will need to be logged appropriately, with the New Zealand Police being notified immediately, and the Director General of Health shall be notified within 3 days as required by Regulation 57.

22.7. Conduct a review, test, and audit of the site security principles every 3 months to ensure that all security devices are operational (such as door sensors, locks, key fobs etc.) and take immediate action to resolve any arising issues.

22.8. Annual inspections by MOH are facilitated by escorting the visiting officers throughout the facility. Inspecting officers are classed as Guests for the purposes of adherence to SOP.

22.9. Stock takes are to occur quarterly, of all cannabis biomass (wet / dry / seeds / plants / mothers etc). Should any discrepancies arise, the Incident Management / Record Adjustment process is to be followed. This may be completed by any appropriately authorized staff member.

## 23. Backups / remote access

23.1. All video surveillance is stored on-site at the facility on a server with at least RAID-5 drive-failure redundancy.

23.2. Remote access may be available for authorized staff only, at the discretion of the named *Responsible Person* on the license. This remote access shall only ever be “view only”, with no capacity to delete / remove / alter video.

23.3. A regular backup regime should be conducted with off-site backups for critical data, such as records of cannabis materials. This is to permit a full and complete restore of records in the event of a catastrophic “cloud” failure.

23.4. All cannabis tracking related records shall be kept for a minimum of 5 years time, with the expectation of longer record-keeping being possible. This includes any digital documents, as well as scanned / photographed records.

## 24. General site standards / expectations

24.1. Personal belongings should be left off-site where possible, such as in your vehicle. Any bags or other items taken into the secure areas may be searched before you exit the building.

24.2. Replace shoes or use overboots where possible before entering the growrooms, to ensure no external contaminants / pests are walked in.

24.3. Hands should be immediately washed with soapy water when entering the facility, or after every exit / break.

24.4. Nitrile gloves are to be worn at all times.

24.4.1. Additional care should be taken to ensure the gloves have not broken and are also clean / sterile when handling seeds, clones, plants and harvested biomass.

24.4.2. Gloves should be replaced after every exit / break as well as after handling cleaning solutions and nutrients. This is to prevent chemicals ending up near plants, and especially to ensure that nutrients / cleaning products do not come into contact with skin.

24.4.3. Where staff are unsure if they should change gloves, assume they should always be changed

24.5. Use knives, scissors and other cutting utensils for the plants from one room only. They are not to be used elsewhere, or on plants of another room. Similarly for the care of the Mother plants, the knives, scissors and other cutting utensils are not to be removed from the *mothering tent or nursery area*.

24.6. When completed, the scissors shall be returned to their storage container, to be cleaned with an alcohol-based disinfectant solution such as isopropyl alcohol / bleach.

24.7. Use a different set of tools for trimming / manicuring during harvesting. This

may simply be secateurs for cutting the trunk of the plant.

24.8. Any staff suffering from illness or cold-like symptoms such as coughing, sneezing, are temporarily prohibited from working at the Secure Facility, so that any airborne or touch-based disease is not transmitted through the cannabis biomass. This is especially important with sneezing as the primary manner in which bacteria may come into contact with plants and contaminate a growroom, which may cause a failure of microbial load on the finished product.

24.9. All utensils, tubs, barrels, buckets, and measuring equipment is to be cleaned after use to ensure a high standard of hygiene. Where practical this should be immediately actioned, however sometimes it may be necessary to complete this at the end of the day.

24.10. The site shall be operated in a manner such that smell does not escape to bother nearby neighbours or businesses. This may involve operating the facility at a negative pressure and / or carbon filtration for any venting of air.

24.10.1. To further combat odor escaping, all rooms where cannabis materials are held should be sealed with a silicon-based beading (Such as Sikaflex AT-Facade) along any gaps in wall-panels, joins, edges, skirting boards, and around drainages. This will minimize odor escape while maximizing CO2 injection efficiency.

24.10.2. Similarly, doors to those rooms should also be fitted with an edge / automatic door bottom sealer, such as Ravenseal RP10Si frame-seal / RP8Si door bottom automatic sealer, to prevent further odor escaping or CO2 leaking.

24.11. Air inside any rooms where cannabis materials will be held shall also be internally scrubbed with a carbon filter in order to remove as much odor as possible.

24.11.1. Although filters may be “free standing”, their location shall be noted on any floorplan sent through to the Medicinal Cannabis Agency.

24.12. Each INTERNAL room shall be labelled with a sticker / poster or similar, indicating its purpose (Flower1, Flower2, Nursery etc) and this should align with labels on any floorplan. This may be on the door, or immediately adjacent to it such that it is immediately visible prior to entering the room.

## 25. General site security principles

25.1. The *Facility* is not to have any signage, logos, emblems or markings anywhere relating to the company or business conducted onsite.

25.1.1. If required as part of body corporate signage etc, a decoy name should be used, or that of a separate / unrelated business.

25.2. Generic and unidentifiable alarm / security stickers are permitted for the purpose of deterring diversion attempts / unauthorized access.

25.3. PINs are not to be written down anywhere, nor any identifying marks made on the key fobs that would pertain to the company (such as name or address) or any other such references to the site / location.

25.4. All external doors, as well as any internal doors to rooms that may contain cannabis materials, must have an automatic closing mechanism installed plus an automatic locking mechanism. Doors are expected to relock immediately upon closing.

25.5. An alarm will sound in the event the external personnel doors remain open for a period of more than 60 seconds. A siren will sound inside the Facility acting as a deterrent to any attempted diversion, should a break-in be attempted.

25.6. Responsible Personnel will also be automatically notified electronically of the security breach so that security footage can be reviewed and appropriate remedial actions can be taken including calling of the Police if required.

25.7. Keys are not recommended for physical access to any locations of the site due to easy cloning and copying. Where no other alternative is available (such as for a gate or fence), keys may be used and should marked as “DO NOT COPY”.

25.8. Access to any parts of the site which *may* contain cannabis biomass must employ a method of *2-factor authentication* (Two separate factors of authorization) in order to reach any room where cannabis materials may be. This means one door may require a fingerprint whereas another requires a PIN.

*2-factor authentication* methods may include but are not limited to a combination of a PIN + fingerprint, PIN + key fob, fingerprint + key fob, PIN + NFC authentication method or other similar security arrangement. This ensures that should a Key Fob / cellphone be lost, stolen, or go missing, it's use would not permit any unauthorized access to the site.

25.9. Take care to ensure that no “shoulder-surfing” occurs with any Guest(s) or

unauthorized personnel seeing the PIN being entered to open any door.

25.10. Take care to ensure that no tailgating occurs whereby an unauthorized person could enter the Secure Facility by quickly entering through a door as it is closing.

25.11. If staff are coerced to open the door by force or threat of violence, they must take into account their own safety and not resist. They are to comply, open the Cultivation Facility under duress, and allow the intruder in. If possible to do so safely - press the first available distress button. Pressing of the button activates the silent alarm which notifies all responsible staff, who are to contact 111 emergency services immediately.

25.12. All windows on any ground floor should be barred so that in the event of an unauthorized person attempting to gain entry to the site, they would still be unable to do so.

25.13. All PIN locks automatically lock the keypad after a maximum of 5 incorrect attempts in a row, and do not unlock for a period of 3 minutes to deter any brute force attempts.

25.14. Locks must remain operational at all times. A battery UPS must remain in place to maintain the things such as mains-powered maglocks in the event of a power failure.

25.15. All digital locks shall have an expected battery life of 12+ months, with the intent that even at critical battery levels they will remain operational for a period of no less than 1 week. This is to ensure that in the event of a fire / power outage the locks will always permit staff to exit the *Secure Facility*.

## 26. Staff access

26.1. Key staff that have a direct need to access the site (such as cultivation technicians) will be issued with their own unique set of credentials to access the facility. These access credentials may take the form of one or more unique + private PIN numbers for access to the Secure Facility, key fobs / NFC tags / HID Prox cards, and may also employ fingerprint identification.

26.2. At no point should any unauthorized person be able to access the facility by the use of a single access method such as finding a lost keycard.

26.3. Access to the facility is only to be provided to staff who must have regular / unattended access, and not to other general supporting staff such as

accounting personnel etc.

26.4. It must be immediately reported if a unique PIN is forgotten / becomes known by someone else, as well as if any key or keyfob / NFC tag lost, missing or stolen.

26.4.1. The affected access credentials are to be revoked without delay, and new credentials issued. The access permission is cancelled in the Security System.

26.4.2. In the event a physical key is impacted, the lock or lock barrel shall be replaced.

26.4.3. Alternatively if the padlock is a combination lock, the code shall be changed.

26.5. The security access logs will be reviewed by staff, to confirm that no unauthorized access has taken place with their access credentials, such as reviewing video footage of the last time their credentials were used.

### Staff termination / departure

26.6. In the event of a staff termination or resignation, at the completion of any notice-period or on the final day of employment, all credentials shall be revoked

26.7. Credentials may include (but are not limited to) any door PINs, keyfobs, automation software credentials, or fingerprint access as applicable.

26.8. In the event that the staff member has physical keys (for example to a gate lock), these are to be returned. In the event that the staff member is unable to return the keys, the lock barrel should be replaced immediately.

26.9. Any padlocks, such as that for gates or internal waste disposal bins, shall be proactively replaced in the event of staff termination / departure

26.9.1. The keys for any padlocks that secure waste bins internally shall always be replaced as part of staff termination / departure. Any combination locks should have their combination changed.

## 27. Guest / other visitor access

27.1. Contractors, Couriers, Builders, Electricians, MOH Inspectors or other such unauthorized personnel who temporarily need to enter the Facility are

considered to be *Guests* while on-site.

27.2. All visits by Guests should be scheduled in advance to ensure appropriate staffing is available to escort the guest as required.

27.3. *Guests* are to sign in on arrival, noting date and time of their arrival as well as a contact phone number in case they need to be contacted later.

27.3.1. It is recommended to use a digital sign-in form such as an open-source visitor database from Genoa Engineering.

27.4. All *Guests* are informed that items taken into the Facility may be subject to search before they leave the premises.

27.5. Guests must be escorted by staff whenever they access the Facility, unless there is NO cannabis biomass on site (e.g., during the initial build / setup of the premises).

27.6. Guests are not permitted to be issued any form of security clearance such as PINs or key fobs.

27.7. If applicable, it is recommended that Contractors bring their vehicle inside the Loading Bay and load / unload any applicable work tools and materials for use during any maintenance being carried out.

27.8. Where a Guest / Contractor needs to perform maintenance inside an area such as a Growroom when there is cannabis present, the escorting staff member must remain with them for the duration of the visit. In the event the staff member needs to leave the room, the Guest / Contractor must also leave with them and wait in an area that does not have any access to cannabis *biomass* (such as a lunchroom / kitchen).

27.9. Contractors that need to take tools into the facility to perform maintenance are encouraged to take a minimum of tools needed to perform the job. Contractors are permitted to take toolboxes etc into the facility but will be informed these may be subject to search before they exit the premises.

27.10. It is expected that guests will maintain the same high level of health and hygiene standards as any staff member would. The escorting staff must brief the visiting guests on health and hygiene standards and ensure that gloves and other PPE items are worn and all other health / hygiene measures are being followed at all times.

27.11. Before guests leave the premises, they are to sign out of the premises and date and time of their departure from site.

27.12. A search of any toolboxes or bags or other items taken into the Facility that may conceal cannabis is to be conducted if appropriate before the guest departs. The need to conduct a search will be assessed based on the duration of the visit, the potential access to cannabis, and any other relevant circumstances.

## 28. Access logging and surveillance review

28.1. Records of access to the Facility are kept for a period of 30 days and will be produced at the request of the Directory General of Health, Ministry of Health or New Zealand Police. This includes visitors and video footage.

28.2. All records are maintained through electronic locks with unique identification methods for all staff. These records are stored on the access control server and are periodically backed up off-site.

28.3. Lock states are recorded and stored for the staff who opened the lock / door. This is done by uniquely identifying the PIN that was entered, or the key fob / fingerprint that was scanned.

28.4. A review shall be conducted on a weekly basis of video surveillance with the primary objective of detecting any other observers and behaviour that may need a proactive response, as well as detecting any anomalies with the cameras.

## 29. Encryption levels

29.1. All security related wireless / IoT devices are to utilize at least 128-bit AES encryption or similar equivalent.

29.2. Unsecured devices are not permitted on the network, with unencrypted communications.

29.3. This includes Z-wave, Zigbee, and 802.11x wireless devices.

## 30. Video surveillance

30.1. Video cameras are to be operational in every room where cannabis biomass is handled, along with additional cameras in the loading bay area (if

applicable) and other external access areas for further monitoring of the perimeter.

30.2. All areas that may contain cannabis biomass must have video surveillance at a resolution of 1280x720 or higher, a framerate of at least 2fps, and footage stored for no less than 30 days.

30.3. Video surveillance is to be stored on a server with at least one hard drive's worth of redundancy, such as a RAID-1 / RAID-5 method.

30.4. The surveillance system is physically secured in such a way that the video surveillance and storage server is not easily removable from the Facility, for example being elevated off the ground out of general reach or behind further lock and key.

30.5. The surveillance system is to be operated on a UPS Power Supply such that in the event of a complete power failure to the site the relevant equipment is able to continue to operate for a period of no less than 60 minutes.

30.6. All cameras must be able to continue to operate and record to the video surveillance system during this time.

30.7. Staff shall be notified automatically in the event of a power failure so that staff can immediately attend the Secure Facility and ensure the operation of a backup generator with the intention of providing power to the surveillance system.

30.8. Video surveillance is only accessible for review by authorized staff. In the event that a request from the New Zealand Police, Ministry of Health or Director General is received to review the footage, the named Responsible Person on the license or other nominated staff is to review the footage by plugging in a laptop / keyboard / mouse (as applicable) and connecting to the Network Video Recording server. Footage can then be provided to the New Zealand Police, Ministry of Health or Director General via a USB drive.

30.9. Video cameras are to record 24/7. Additional metadata may be used to assist with motion detection, but should never be a substitute for continuous recording.

30.10. Video cameras are to have the capacity to clearly record in darkness. This should take the form of supplementary IR that turns on automatically when the ambient light level (such as from sunlight, or the grow room lights being turned off) is dimmed.

30.11. Video cameras are to be present above any interior roof systems, such as fake-ceilings for any cultivation rooms. This is to provide an “early warning” of any attempted break-ins from the roof.

30.12. Video cameras should also have the capacity to detect motion and immediately notify the appropriate staff, if separate PIR sensors are not utilised.

## 31. Staff onboarding and policy upkeep

31.1. Prior to any access credentials being issued, staff shall go through a Ministry of Justice Criminal Record and credit checks, to confirm they are suitable to work with a controlled substance.

31.2. All company directors and named Responsible people will undergo a Criminal Record check as part of the license renewal process annually.

31.3. Due to the expected size of the Facility where restricted cannabis biomass is located, any staff that are not specifically required (for example, accounting staff) would not be permitted unattended access to the Facility.

31.4. Any staff that do not have their own credentials / unattended access (such as accounting staff) are to be treated as Guests should any unforeseen circumstances arise that requires them to attend site, in keeping with the visitor access procedure.

31.5. Newly onboarded staff that are to be provided with their own credentials for unattended access to the facility will be provided with a copy of this document to read and acknowledge.

31.6. Newly onboarded staff will undergo training in these Security and Standard Operational Procedures. Staff will work under supervision until assessed as competent.

31.7. All cultivation-related staff will be notified of amendments / changes made to this document, and an annual training will be conducted with all relevant staff to ensure policies and procedures remain at the forefront of their attention.

31.8. Any changes to SOP/Manual affecting day to day procedures and/or workflows or processes will necessitate a training session. These training sessions are over and above the regular annual training sessions. All staff are to be assessed on competency and understanding of the changes at the end of every such session.

31.9. Any staff members found to be in need of further training as a result of the competency assessment will get an additional, one-on-one, training session scheduled with appropriate senior staff.

# Inward / outward goods

## 32. Approved suppliers

Potential suppliers of Medicinal Cannabis seeds, plants, or flowers must meet minimum requirements to be approved as a supplier.

32.1. New Zealand suppliers must hold all appropriate licences as follows:

- Medicinal Cannabis **Seeds** and **Plants** - Medicinal Cannabis License with Nursery Activity or Medicinal Cannabis License with Cultivation Activity.
- Hemp **Seeds** and **Plants** – Industrial Hemp License

32.2. Overseas suppliers must be able to legally export Medicinal Cannabis products to New Zealand and guarantee that seeds are not pelleted. To ensure supply, a raw material may have more than one approved supplier.

32.3. Once all evidence has been provided, the potential supplier's ability to meet requirements is assessed.

32.4. Factors to be considered before approving a supplier for any materials shall include:

- The capability of the vendor to fulfil the requirements of the proposed purchase order.
- Previous experience of the vendor’s ability to produce the product at the required quality level, within the necessary time frame and price.
- The supplier holds all required licences.

32.5. A supply agreement may be sent to the new Approved Supplier, to document the agreed product requirements and any conditions of purchase.

32.6. A copy of the agreed specification is saved to the product specification folder for easy reference.

## 33. Approved recipients

A list of all individuals and organisations authorised to receive medicinal cannabis is to be maintained.

33.1. Approved recipients include:

- waste contractor details and the employees authorised to collect medicinal cannabis for destruction and disposal
- external laboratories and/or research organisations, and the relevant employees authorised to receive the medicinal cannabis for research activities or testing
- Customer purchasing biomass (Offtake buyer)

33.2. In order for an individual recipient or organisation to be added to the register, the staff must first assess the eligibility of the potential recipient to take possession of cannabis by collecting information from the potential recipient.

33.3. Staff must review the provided evidence of eligibility and detail any additional information, pre-requisites, or conditions that must be satisfied prior to approval being granted. This may include:

- approval of a technical agreement and/or contracts
- obtaining evidence of the relevant licences/permits for the organisations intending to receive medicinal cannabis (e.g., Medical Cannabis License with Cultivation, Possession for Manufacture, Supply or Research Activity, Controlled Drug License etc.)
- the supporting documentation for their authorised/nominated recipients (e.g., name, contact details, photo ID if applicable, etc.).

33.4. Once the relevant information has been provided, the staff may add to the approved recipients list with the details of the new approved third party, including the expiry date of the license.

33.5. **NOTE**: Individuals and organisations may be removed from the register due to non-compliance with license and/or security requirements, or after a security incident.

33.6. A Medicinal Cannabis Agency - Supply license is not currently being sought, for exporting of cannabis starting materials. As such the business will operate within the boundaries of the Cultivation regulations regarding national cultivation and sale to Medicinal Cannabis Agency license holders.

## 34. Purchasing of cannabis materials

34.1. All cannabis related materials are expected to be domestically sourced or distributed.

34.2. Until such a time there is a requirement for any international importing of seeds or other such restricted materials, all seeds / cuttings will be sourced from within New Zealand in accordance with existing legislation.

34.3. When required, an Import Permit must be obtained for every shipment of Cannabis seeds from an overseas supplier before the seeds are shipped to NZ.

34.4. All suppliers of seeds to be imported must be legally entitled to export the seeds with the required export documentation.

34.5. The seeds must be accompanied by a Phytosanitary Certificate that meets the requirements of IHS 155.02.05 Seeds for Sowing and a Certificate of Origin itemising all seeds in the shipment.

34.6. A signed Importer Declaration for Seeds Imports must be provided, declaring there are no pelleted seeds in the shipment before the seeds will be released.

34.7. The Importer Declaration on Page 3 of the Import Permit must be completed and returned to Medicines Control once the seeds have been received.

## 35. Sending / receiving parcels

35.1. Small parcels are light packages that can be reasonably held in a single hand, such as letters or small courier packages. These may be brought to or removed from the Facility through any standard access way.

35.2. Large items are packages that cannot be held in a single hand, such as large buckets, growing medium, or water reservoirs. These items should be received through a Loading Bay / access gate as applicable, where the vehicle has been reversed in such a way as to minimize or completely obscure any visibility from the outside.

35.3. Small parcels should not be opened in view of anybody not legally admitted to the Facility, including being opened while visible through any exterior facing windows.

35.4. Small parcels that are leaving the facility must not have any signage, logos, emblems or markings anywhere that relates to the company or business conducted at the Facility. Should there be any such logo or emblem, it should be covered before leaving the Secure Facility.

35.5. Details should be noted for any small parcels scheduled to be received with the details of the contents, the date it was ordered, and the scheduled delivery date.

35.6. Instructions should be provided to any courier company that packages are not to be left unattended.

35.7. Staff are to be scheduled to be on-site for the expected date of delivery.

## 36. Sending wet / dry biomass

36.1. Sending of wet / dry biomass is only to be done by staff at the implicit instruction of a named Responsible Person on the Medicinal Cannabis license, with the shipment scheduled in advance.

36.2. Prepare the order as required by the purchaser. This may include weighing out individual bags to appropriate sizes or packing into totes a specific number of pre-packed bags.

36.2.1. Tamper-evident packaging such as vacuum sealing under inert pressure shall be undertaken as a method to validate any tampering.

36.3. The cannabis materials are to be placed into a large tote as applicable for shipping with a lid.

36.4. Lock the shipping containers with a PIN-based padlock or similar security mechanism. The staff packaging the materials will disclose the PIN to the authorized personnel only. The authorized personnel will then disclose the PIN to only the intended recipient, and only once the wet / dry biomass has reached the destination.

36.5. Label the shipping container(s) with their manifest details such as weight, but not any identifying information or company logos. Leave the containers ready for dispatch in the vault area until the transporting vehicle has arrived for collection.

36.6. Create a shipping manifest of either a plant / clone count and initial weight for wet / dry biomass.

36.7. The shipping manifest must detail the name of the person the cannabis is sent to, the address of the recipient, the name of the controlled drug, i.e., cannabis and the quantity being sent and the intended method of delivery, e.g. the name of the courier company, is to accompany every shipment. Upon receipt, the manifest is to be signed by the receiver and a copy returned to confirm delivery.

36.7.1. An example is included in the appendix of this document

36.8. Details of the dispatched wet / dry biomass are to be saved, and the partially completed shipping manifest to be stored alongside it, prior to any cannabis materials leaving the facility.

36.9. Transporting vehicles and any other 3rd party personnel are to wait outside the premises.

36.10. Staff will then enter the vault area and verify the shipping container(s) are locked, and the shipping manifest is complete and accurate with transportation details matching. This manifest must accompany the shipping container(s).

36.11. Move the locked, labelled shipping containers from the vault to the applicable area for exit, such as a loading bay / gate area or if applicable through the front door.

36.12. Load the locked transportation container(s) into the vehicle. This is to remain in a separate area from the driver, such as a locked rear of a van.

36.13. Staff are to accompany the biomass until it has arrived at the destination facility, to ensure live monitoring / tracking of the cannabis materials.

36.13.1. This may be a single authorized staff member from either the sending or the receiving company.

36.14. Contact the *Responsible Personnel* for the PIN number to access the transporting container so it can be unpacked once arrived at the final destination. The *Responsible Person* will send the PIN only to the Approved recipient, not to any transportation provider.

36.15. The transporting vehicle is not to have any signage, logos, emblems or markings anywhere that relates to the company or business conducted at the *Secure Facility*. Should there be any such logo or emblem, it should be covered before leaving the *Secure Facility*.

36.16. Notify the Responsible Person immediately of any unexpected delays during the journey. Delays are any event that requires an alteration to the planned route or vehicle, such as:

36.16.1. Mechanical breakdown

36.16.2. Flat tyre

36.16.3. Car crash

36.16.4. Signposted Detours

36.16.5. Attempted robbery

36.17. *Responsible Personnel*, together with the *Transportation Provider* will decide on appropriate corrective action. The security of Cannabis must be maintained at all times.

36.18. *Responsible Personnel* will notify the Police of the contents of the shipment in the event that the cannabis must be transferred to another vehicle for any reason, including mechanical breakdown or car crash.

36.19. Give the shipping manifest to the recipient at delivery and get a copy of the signed manifest for internal records.

36.20. Compare the weight of the biomass when received and branch count (if applicable) to the weight/count at the time of dispatch. Wet biomass weight is expected to change by a maximum of 5% during transport. Any change in weight greater than expected will be actioned as an incident.

36.21. No significant change is expected in the weight of *dry* biomass during transport.

# 37. Document history

- v2.4.0 - 20241108
- Modified document formatting - Easier to print now
- Added additional information on §5 Flowering
- Added §5.11 & §5.12 on flush / fade
- Modified §5.2.5 for final flower PAR
- Added §5.7.6 for care during defoliation - Impacts microbial
- Added §5.7.7 to help ensure hands don't get caught
- Modified some header formatting to tidy up TOC
- Modified §4.14, added subsections, clarifying topping during vege and plant density
- Modified CoC for easier license # placement, changed the name to indicate any company can use it
- Added §24.10.1 / 24.10.2 about sealing of rooms and doors for odor control / preventing CO2 escaping
- Removed §5.3.4 re: sugar leaves, this is handled under §5.7.3
- Added §5.6.1 and §5.6.2 to clarify further the tucking/training through netting
- Changed §1.2 to highlight where seed germination is used they must be noted when failure to sow when obtained under §34

- v2.3.5 - 20240914
- Added 36.13 with the requirement of approved staff to escort shipments
- Clarified 36.14 regarding providing the PIN only to the destination, not to the staff doing the transporting.
- Added 36.2.1 to confirm vacuum sealing is used as tamper evidence.

- v2.3.4 - 20240827
- Removed §17.6 + §17.6.1 for incineration and tidied references. Nobody has been using incineration
- Clarified two-step process in §10 - Cleaning
- Swapped §4.11.1 and §5.2.1 for Vege vs Flower target temperatures
- Added link to §27.3.1 for visitor sign-in database
- Added link to §13.1.1 for GRACe database for plant and product tracking

- v2.3.3 - 20240822
- Version number is now on the front page, same as all other pages
- Added §24.11.1 detailing that carbon filters must be stipulated on the floorplan
- Added §30.11 and §30.12 detailing motion-detection & location requirements for security cameras
- Clarified versioning requirements for SOPs & floorplan in §13.7 & §13.8
- Added §24.12 room labelling requirements after discussion with Agency for on-site auditing purposes etc
- Added 17.7.1 clarifying requirements for disposal mixing with additional components

- v2.3.2 - 20240807
- Inserted §13, now Record Keeping information
- Includes monthly materials-out to Agency

- §21.10 regarding annual stocktake is now §13.6
- Several minor spelling changes

- v2.3.1 - 20240705
- Fixed version numbering and page numbers in footer
- Replaced §2.6.3 with information about the room temperature
- Clarified “staff name” in shipping manifest

- v2.3 - 20240515
- Added testing for HLVd in §9.7 -> §9.13
- Tidied formatting

- v2.2 - 20240308
- Removed §3.5.2 for Room Relative Humidity (irrelevant)
- Amended §3.5.5 & §3.5.6 to match industry standard inputs for rockwool, and Dome temp
- Improved §25.4 to mention "key", in relation to any waste disposal bins
- Removed §25.8.1, replaced with §25.4.2, §25.4.3 and §25.9
- §21.9 is now §21.10 and noted details about sending through to MCA
- Added §21.9 for quarterly stock takes

- v2.1 - 20240305
- Amended §18.4 for grow room cleaning
- Added §25.8.1 re: waste padlocks
- Footers now contain document version number

- v2.0 - 20240125, Initial version submitted to Medicinal Cannabis Agency for review

# 38. Additional items

See following page(s)

# Genoa Engineering Universal Shipping Manifest

**Sending party:**

- Staff name preparing shipment _____
- Sending company name + license # _____ / _____
- Email address to be notified upon arrival _____
- Date / time prepared for shipment ____ / ____ / ____ ____ : ____
- Product (Dried flower, cuttings etc) _____
- # of items sent _____
- Shipment weight, net / gross _____ / _____
- Recipient staff name _____
- Recipient company + license # _____ / _____
- Destination address _____

_____

_____

- Staff signature _____

**Transit chain of custody (if applicable):**

- Collected from facility by: _____
- Date / time shipment collected ____ / ____ / ____ ____ : ____
- # of items collected _____

- Collection signature / tracking number _____

**Receiving party:**

- Received by (staff name) _____
- Date / time of receipt ____ / ____ / ____ ____ : ____
- # of items received _____
- Shipment weight (if applicable) net / gross _____

- Signature of receiving party _____

Please scan / photo upon receipt of goods, and send a copy to the senders email above.

## Annual Stock Take reporting

- Stock take to take place as of 1st January each year, reported by 31st Jan to the Agency
- The following template may be used for each of Seeds, Plants, and Flower.
    - Note: Cultivators should not be in possession of oils / extracts, so this document does not take into account those types of products
- If there are discrepancies between this stock take and expected numbers, report them to the Agency at once and follow the appropriate Incident Management process.
- The “In” field is for any received / bred / cloned or purchased
- The “Out” is used to determine any stock sent off, including flower for testing / sold genetics
- The “Die / Destroyed” includes any clones that don’t root, are killed off, or aren’t harvested

**Seed stock:**

| Cultivar / Variety | Open: 1 Jan 23 | In | Die / Destroyed | Out | Close: 31 Dec 23 |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

**Plant stock:**

| Cultivar / Variety | Open: 1 Jan 23 | In | Die / Destroyed | Harvested | Out | Close: 31 Dec 23 |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |

**Dried flower stock:**

| Cultivar / Variety | Open: 1 Jan 23 | In | Die / Destroyed | Out | Close: 31 Dec 23 |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

**Example:**

*Company declares 2 White Widow plants during the license application. They take 64 clones. Of those 64 clones, 54 are kept for flower / harvest, and two of them go on to become new mothers. The remaining 8 are destroyed, alongside the original two mothers. The stock take would look like this:*

| Cultivar / Variety | Open: 1 Jan 23 | In | Die / Destroyed | Harvested | Out | Close: 31 Dec 23 |
|---|---|---|---|---|---|---|
| White Widow | 0 | 66 | 10 | 54 | 0 | 2 |