



Business Investment Profile

Certified Ginger Nursery & Production

Financial and Technical Fact Sheet for Rhizome production & Field production
5 Hectares

BUSINESS OVERVIEW

This business model comprises of 9 months ginger rhizome nursery, 2 months of ginger seedlings nursery and 9 months of ginger field production.

Ginger cultivation is increasing across Jamaica and farmers are in need of certified clean, affordable and quality seedlings. Traditionally, producers exchange planting material, inadvertently spreading ginger rhizome rot which cripples yields. Rhizome rot has been found in all major ginger production areas in Jamaica. This business opportunity employs new multiplication technology at the nursery level to produce certified clean ginger seedlings for certified grow out

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| Product: | Ginger seedlings, Fresh Ginger |
| Seed material source: | Ministry of Agriculture, Montpellier Research Station The mother rhizome for next round of generation is produced from purified tissue culture using single-bud technology. The planting materials are 100% rhizome rot-free of highest quality on the island. |
| Facility & Land Requirements: | Shade house (8500 sqft) + 5 hectares for field production |
| Main production technologies: | Single bud technology (SBT); irrigation systems |
| Annual Production Cycle(2 years): | April – December 2021 Ginger G2 Seedling Production May – December 2022 Fresh Ginger Field production |
| Cycle Output: | 250,000 SEEDLINGS for 5 hectares of field production 110 Metric Tonnes of Fresh Ginger |
| Main buyers: | Local Spice manufactures, Fresh market, Export traders |
| Gross Revenue Range per cycle*: | J\$32.3 Million |
| Net Profit*: | J\$20 Million over a period of 2 years |
| Internal rate of return: | 76% (2 cycles to pay back total investment) |

FINANCIAL OVERVIEW*

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| Establishment Cost | J\$ 15 Million |
| Total J\$17 Million | 2021 – Nursery (Shade house, planting material, equipment and etc) J\$ 2 Million 2022 – Field Production (Land prep, field irrigation system) J\$3 Million 2021 - Nursery Cost includes: labour; water; fertilizer; chemicals; coir; financing costs |
| Operational Cost | J\$8.5 Million 2022 – Field production Cost includes: labour, water, fertilizer, chemicals, financing costs |

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| TOTAL SEEDLINGS | GROSS REVENUE | INTERNAL RATE OF RETURN | CYCLE PROFIT (2 YEARS) |
| 500,000 | \$32.3Million | 76% | \$20Million |
| EQUIVALENT OF 10 HECTARES PLANTING MATERIAL | BASED ON MARKET PRICE @\$85,000/AC | INVESTMENT PAYBACK IN 2 YEARS | |

*Based on a theoretical financial and technical model specific to Jamaican conditions; 7-9 month production cycle; own production of seedlings; includes annual depreciation on capital investment (shade house & equipment).

Key Technology – Single Bud technology

Using new and proven multiplication technologies from India (*Single Bud Technology*), this nursery system uses a simple and standardised transplanting technique in shadehouse conditions. The technology is applicable to ginger and turmeric and has been successfully tested in Jamaica since 2018 by the MoAF RDD. The advantages of single-bud technology nursery is the availability of certified clean planting material at a lower cost for farmers.

(For more information about single-bud technology please refer to the nursery manual)

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| Production Timeline: | March – May (8-10 weeks) |
| Facility Requirements: | Shadehouse with net (50% shade coverage); and double door entry system. Size depends on desired output of seedlings. Drip irrigation system |
| Equipment*: | Benches / Seed stands; pro-trays |
| Climatic Requirements: | Room temperature: 20°C - 35°C Shadehouse facing North-South |
| Water Quality: | Water pH: 5-6 Electrical conductivity: 1.8 - 3 (2 - 2.5 is optimal) |
| Grow Medium: | Coir, peat moss or Pro-Mix containing vermiculite |
| Transplant to field: | Seedlings ready for transplanting in farmer fields after 30 - 35 days in nursery |
| Training Requirements: | Nursery staff and operators need to complete a 2-day practical training module on Single Bud Technology run by the MoAF Research and Development Division every year in Jan-Feb. |

Key Technology – Single Bud technology

The Certification of ginger production in Jamaica is geared towards establishing a system of standardized protocols. These protocols can assist stakeholders in the ginger value chain in achieving optimal levels of production through the provision of healthy planting material. This technology forms the basis of the ginger certification programme and when supported by Good Agriculture Practices (GAPs) as described herein should help ginger growers boost their levels of production.

(More information about single-bud technology please refer to the GAP manual)

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| Production Timeline: | Plant ginger during May to early August |
| Irrigation Requirements: | Drip irrigation system, Analyse the source and quality of irrigation water for pH and electrical conductivity (EC). |
| Climatic Requirements: | Ginger cultivation favours temperature of 19-28°C & Humidity of 70-90% Performance of ginger is better in partial shade. Therefore, growing of ginger in coconut and coffee plantations is encouraged. |
| Water Quality: | Water pH: 5-6 Electrical conductivity: 1.8 - 3 (2 - 2.5 is optimal) |
| Soil Requirement: | Practice soil solarization where field has the history of rhizome rot disease incidence. Apply mature organic manure or farmyard manure before planting. |
| Planting density: | 30cm * 65cm |
| Nutrient management: | Ginger is a nutrient exhaustive crops and therefore, requires intensive application of nutrients. (pls refer to the manual) |
| Certification requirement: | Total of four inspections will be carried out during production |



BUSINESS ADVANTAGE

- JACRA/MoAF/FAO are promoting the expansion of ginger cultivation and production;
- Jamaican Ginger is renowned for its pungency and fragrance and is in high demand in the fresh and processing markets
- Including the production of certified planting material in your business operations means major reductions in the risk associated with ginger cultivation
- Local processors are interested in sourcing large volumes of local ginger for its high quality pungency
- Annual demand in both export and processing markets is expected to grow over the coming years
- Current farm gate price of local fresh ginger ranges from J\$150 – J\$200 per lb. Commercial production has the potential to bring the cost of production down significantly and increase producer profit margins and offer high returns on investment
- JACRA, the MoAF and FAO are promoting development of the full ginger value chain for farmers and processors to realise the revenue potential of the crop

PUBLIC SUPPORT AVAILABLE

- Training:**
- Single-Bud Technology
 - Nursery Operations
- Support:**
- Full Financial Business Models
 - SBT Nursery Manual
 - Record keeping templates
 - Extension visits
- Market linkages:**
- Facilitation of linkages to secure buyers through the Ginger Development Pilot

BUSINESS RISKS & MITIGATION OPTIONS

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| Main production risks | <ul style="list-style-type: none">• Ginger seedlings become contaminated in nursery• Severe climate conditions and other yield limiting factors | Suggested mitigation actions: <ul style="list-style-type: none">• Frequent inspection of mother rhizome |
| Main market risks: | Fluctuating market price | Suggested mitigation actions: <ul style="list-style-type: none">• Have labourers trained in good production practices• Secure agreements with buyers prior to production• Mixed cropping with other cash crops to diversify income streams |



CONTACT & FURTHER INFORMATION ON GINGER CULTIVATION:

If this Business Opportunity looks interesting for you, we are interested in knowing more about you!

- Where are you located?
- Do you have a field irrigation system or are interested in investing in one?
- What scale of production would you be interested in getting into?
- Do you need support in linking to buyers to sell your produce?

For more information on this Business Opportunity and discuss how you could join the pilot please contact:

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