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Dear, Mr Kaliisa

RE: FARM INSPECTION REPORT OF AVOCADO ORCHARD IN KYANAMUKA

FARM DETAILS

FARM LOCATION	ACRES/block	CROPS/ spacing	GROWTH STAGE	SITE
Kyanamukaka, Masaka district	45 acres/4-blocks (playground, old house, middle and new block)	Avocado-Hass/ 5mx5m	Staggered (6month and establishment)	Gentle slopes and dry swamp.

My main goal during inspection was to help the farmer and his staff identify factors affecting his tree and ascertain remedial measures, prepare for the new block to plant seedlings from Mira Orchard and nurseries. We believe that if a farmer can put in place the good agronomic practices, then the yield and health potential of the plant will be achieved.

OBJECTIVES

- To bridge the knowledge gap among the avocado growers with respect to good agronomic practices (GAP).
- To build capacity among Orchard stewards/ workers on various techniques like mound making, staking.
- To provide strategies of plant nutrition for higher yields and offer agrochemical application regimes.
- To Provide management strategies to Phytophthora root rot (PRR).
- Give proper advice on avocado nursery setup and management.

GENERAL OBSERVATIONS AND RECOMMENDATIONS

Mr. Kalisa's farm consists of trees of different stages of growth (6month, establishment). This calls on the farmer to have different strategies of addressing the needs of the trees since they are of different ages hence the needs will differ from time to time.

During inspection I assessed the performance of each block basing on avocado best management practices (BMPs) check list. I did soil assessment by taking random soil samples to checked for soil texture, Additionally I performed a check on the following plant health, Irrigation management, mulching, implementation of good agronomic practices (GAP), Planting techniques, orchard floor management, nutrition, pest & disease control, compost making and human resource capacity.

Playground block previously contain pineapples as the previous plant, this predisposes the avocado to phytophthora root rot since pineapple are alternate host. Such pineapple suckers should be removed from the avocado blocks and burned.

KEY FINDINGS AND RECOMMENDATIONS

My general assessment of the farm points to a fact that the farmer and his farm management have all the will, resources to improve the orchard to a commercially viable one. Below are my observations and recommendation.

OBSERVATIONS	EFFECTS	RECOMMENDATIONS
Planting technique-young tree care: it was noted that some plants were planted in basin which put the plant at a risk of water logging.	This leads to root rot which led to seedling high mortality rates.	<ul style="list-style-type: none"> Plant correctly with the soil ball slightly above the general slope by using the mounding method. Orchard worker should be reminded of the need to plant avocados on mounds.
High seedling mortality rates In this farm young trees were being lost due to the purchase of unhardened and less quality trees. In some incidences the trees were dying because of sunburn and wrong irrigation technique which resulted into stem cankers. Refer playground, old house and middle.	This is the main cause of young trees dying at a massive rate. Because the tree planted were not hardened and were infested with root rot. It should be noted that the quality of avocado seedling is the most critical factor in ensuring a viable commercial orchard.	<ul style="list-style-type: none"> Purchase only trees from certified nurseries that sell well hardened trees. A tree seedling is the foundation of the orchard. To manage sunburns the farmer should keep the tree watered regularly and should stem paint the stems . (This was all trained to the agronomist Ivan). It was also recommended to Mr Ivan the farm manger to stop gap filling playground, old house blocks until the following season 2024B. Avoid placing seeding on bare ground. Purchase tress with at least six green lush leaves.
Young tree care/ Weed management The care for the young trees was insufficient which leads to slow tree growth and high mortalities. Most trees lacked stakes and were not spot weeded. This lack of staking may result into post planting graft failure.	Improper care of young trees that are susceptible to stress leads to low tree vigor and death as the trees compete for nutrients with the weeds. Lack of staking may result in some trees failing to be trained into an upright growth.	<ul style="list-style-type: none"> Ensure that trees are spot weeded all the time. Ensure the trees are well staked preferably with cloth pieces from a tailor's work shop. Young avocado trees are more susceptible to drought, measures should be put in place to ensure that the tree are periodically watered in order to mitigate on the mortalities. Kyanamukaka orchard soils are more of sandy

		<p>than loamy its therefore paramount that the workers water that trees in the dry season to ensure high chances of survival.</p> <ul style="list-style-type: none"> • Provide a periodic spray regime that consist of copper and a foliar spray once the first flush of the young tree emerges. • In the dry season the trees should be well mulched with a thick layer of organic mulch that may take the form of manure of dry grass.
<p>Mulching: For avocado orchard mulch is very important Most tree lacked mulch which affects the growth of the feeder roots.</p>	<p>The orchard soils are mostly sandy in nature which predisposes the tree to water loss. These young trees are likely to faces water stress in the upcoming dry spell once not sufficiently mulched. Mulch helps in suppressing weeds below the trees.</p>	<ul style="list-style-type: none"> • Always keep the trees mulched right from planting. • Mulch will increase biodiversity which creates conditions that suppress root rot. • The much should not be placed up to the stem.
<p>Wind breakers: The orchard lacked wind breakers to slow the strength of the prevailing wings that will damage the trees and future fruits</p>	<p>The wind breakers provide protection against the strong winds.</p>	<ul style="list-style-type: none"> • Plant graveria tree around each block (playground, new block)
<p>Nutritional deficiency, Soil health. It was observed from the documentation that the farm lacked soil analysis that would inform the nutritional program. It was observed that the soils were sandy in nature, This is indicative of low organic matter which is important for plant growth. It was also observed that the goat manure that was initially</p>	<p>This denies the plant from reaching its optimal growth potential. This is detrimental to the potential of the tree to flower and give more fruits Low soils PH make nutrients inaccessible. Wrongfull placement of manure will lead to steam and root burning.</p>	<ul style="list-style-type: none"> • Periodically the farmer should do both a soil and leaf analysis of the farm. This facilitates the farmer in making informed decisions. • Use of compost manure should be made use of as this may help in complimenting the expensive fertilizer. • Will top dressing or application of manure, The manure should be placed around the drip zone and not on the tree trunk. • A nutritional regime that contains both Macro and micro nutrients

<p>placed was not put professionally to meet the tree needs</p>		<p>should be instituted as part of the farm activities. The nutritional regimes should take a form of foliar sprays such as easy grow or top dressing which involves SSP refer to Lab report.</p> <ul style="list-style-type: none"> • Additionally make use of foliar sprays that contain foliar fertilizers such as easy grow. • Efforts should be geared toward PH correction by use of compost and lime or gypsum. It should also know that the use of gypsum or lime during planting is important in both PH correction. • Additionally, the farmer is advised to invest in fertigation since he has an irrigation system already in place.
<p>Water management/ Irrigation; The old Orchard (Playground, old house and middle blocks) are blessed with drip irrigation. However, these drip lines were observed having valves miss placed.</p> <p>The soil is sandy in nature hence a high-water requirement.</p> <p>The type of drips is not pressure compensated.</p> <p>Some seedlings were desiccated due to a lack of water.</p> <p>The laying of the dripline seemed not to have been professionally done.</p>	<ul style="list-style-type: none"> • Avocado trees have a high-water demand than other fruit trees, a lack of water will led to feeder rots drying out. • To much application of water above normal will led to root rot and hence decline of the tree. 	<p>The farm manager should adopt an irrigation regime of irrigating tree with smaller quantities but with a higher frequency than pouring much water at once.</p> <ul style="list-style-type: none"> • Make use of some chemicals like Ridomil-gold for younger plants. These should be applied a least twice a year • Facilitate drainage to avoid water logging. • The company should periodically test for the water EC at the dam or bore hall. • The farm should invest in training the irrigation manager on the proper irrigation scheduling that only meets the needs of the trees. (Mira Orchard will share the irrigation schedule basing on the soil type)

<p>Water stress: Some cases of a lack of water was evident by plants showing dropping leaves.</p>	<p>Avocado requires lots of water in order to realize optimal yields. This affects the feeder roots which will eventually dry out due to water stresses hence causing total death of the plant.</p>	<ul style="list-style-type: none"> • Irrigate according to the water demand of the tree. Carry out a moisture testing formula. • In case of dry season a water polymer should be used that retains water • The plants should be mulched well.
<p>Nursery structure and management: The nursery was well constructed. However, the drainage and the type of shade used was not suitable for the avocado nursery.</p>		<ul style="list-style-type: none"> • The nursery should be professionally run with emphasis put on the drainage, die back control, soil media and traceability
<p>Pests and disease management. Trees being of young age there were no economic pest of interest that were observed. However, diseases such as phytophthora cinammoni (root rot) and phytophthora cankers were observed to be common.</p>	<p>Pests and diseases pose an economic threat to any established orchard.</p>	<ul style="list-style-type: none"> • The farm manager should periodically scout for pest and diseases to prevent pest build up. • The farm should only purchase seedlings from a certified nursery. • Pests and diseases should be approached through integrated pest management which is a holistic approach to management of diseases, this involves the use of cultural, chemical and biological means of control of diseases. The aim of spraying trees is to reduce the volume of rejected fruits by spraying against diseases. • Orchard hygiene goes a long way in management of pests and diseases. • The farm should be kept free of weeds • The farm should periodically spray the trees with both a fungicide and pesticide.

<p>Orchard floor management/ Soil erosion control; Soil erosion is a risk factor in Nyanamukaka because of the slopes in some areas of the farm</p>	<p>Soil erosion leads to the loss of top soil that is richer in nutrients. Additionally, the water that come from up slope do contain diseases that can affect the trees down slope in case there is no diversion</p>	<ul style="list-style-type: none"> • A cover crop should be maintained all the time to prevent existence of bare grounds. • Put more contours where necessary. • A trenching system should be dug.
<p>Documentation and blocking: The farm lacks any form of documentation that is the practice of good agronomic practices (GAP) Blocking of the orchard into manageable parcels is not yet a practice in this orchard.</p>	<p>This affects proper planning for the many operations of the farm.</p>	<ul style="list-style-type: none"> • Scouting, spraying and harvest inspection records should be put in place. These will be the foundation for certification. • The farm should be blocked into parcels as was demonstrated to Mr Ivan for better management and synchronization of farm operations. • Each block or two should be assigned a steward that is dedicated all the time to the care of the trees. • Documentations such as Scouting, spray, labor output sheets records should well documented.
<p>Follow up visit/ Human capacity It was observed that the agronomist is competent to manage the farm. However, it was also observed that He needs more time with the senior agronomist from Mira Orchards to help him understand the agronomy of avocado such as canopy management, nutrition, pest and disease management.</p>	<p>Orchard establishment and management is a marathon rather than a sprint that requires regular reskilling of workers and devising means of getting output from the workers. The more the farm manager understand the agronomy of avocado the more the knowledge gap will narrow among the workers. This critical because the farm is expanding annually.</p> <p>It should be noted as the tree growth its needs will change.</p>	<ul style="list-style-type: none"> • The Agronomist from Mira Orchards should periodically be facilitated to visit the out grower in Kyanamukaka.

IMPLICATION FOR THE SOIL TEST.



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Reference is made to the soil analysis report. The report generally point to the soils having a very low Ph and agrees with our earlier findings that our soils are silty-clay hence an indication of low organic matter content.

CONCLUSION.

You are advised to periodically add lime, SSP and organic manure as per the lab report. These three elements will improve nutrient availability, soil biology and nutrient uptake. Other corrective measures will be communicated directly to your Agronomist.

Yours Sincere

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Tropical fruit specialist**



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