



**Land preparation
- the basics**

→ **3**

**Horticulture -
selecting hybrid
varieties**

→ **4**

**Pen fattening
- Where is the
money?**

→ **6**

**Farm
budgeting**

→ **13**

Behind Every Bumper Harvest is
FIELDKING
 Equipment that's Built Tough







CONTACT US TODAY FOR THE BEST FARM IMPLEMENTS

Showgrounds Harare: +263 24 277 1973
Enterprise Harare: +263 24 278 8078
Bulawayo: +263 29 227 3051

Masvingo: +263 39 226 3608
Kadoma: +263 68 212 3327
Chiredzi: +263 31 231 5107
Mutare: +263 20 61392



sales@crococommercial.co.zw
www.crococommercial.co.zw



2024/25 SEASONAL RAINFALL FORECAST FOR ZIMBABWE

1. SUMMARY

THIS national forecast was issued after the consensus regional rainfall outlook shared during the Twenty Ninth Southern Africa Regional Climate Outlook (SARCOF-29), held in Harare, Zimbabwe from 26th to 28th of August 2024.

The Meteorological Services Department, within the Ministry of Environment, Climate and Wildlife has issued the national rainfall forecast through the National Climate Outlook Forum (NACOF) which was held on the 4th of September 2024. The NACOF provides the national seasonal rainfall outlook, which is downscaled from the Southern Africa Climate Outlook Forum (SARCOF) to capture the influence of the local climate drivers. This platform brings together national stakeholders to discuss the seasonal rainfall projection for the forthcoming rainy season and the sector-specific implications. Subsequent to this, the Meteorological Services Department will provide regular updates as the season progresses.

The 2024/2025 rainfall season coincides with a weak La Niña phase. There are prospects of better rainfall for the country from the second sub-season until the end of the forecast period, which spans from November-March. The forecast for the 2024/2025 rainfall season is based on the accumulated rainfall for each sub-season, without taking into consideration its temporal distribution.

2. INTRODUCTION

The rainfall forecast for the 2024/2025 season covers the months October 2024 to March 2025.

The forecast is demarcated into four sub-seasons, October-November-December (OND), November-December-January (NDJ), December-January-February (DJF) and January-February-March (JFM). This year the country has been divided into dynamical zones following the forecast signal in each sub-season. Areas indicating the same forecast signal are categorised into one zone.

The main global climate driver the El Niño Southern Oscillation (ENSO) is currently in the neutral phase and is expected to transition into a weak La Niña phase starting October 2024 reaching a peak in the DJF sub-season. The La Niña phase has a higher chance of normal to above normal rainfall over the southern parts of the SADC region including Zimbabwe. However, the country is expected to receive normal to below-normal rainfall for the period October 2024 to December 2024.

An improvement in the rainfall performance is expected for the sub-seasons: November-December-January (NDJ) 2024-2025, December-January-February (DJF) 2024-2025 and January-February-March (JFM) 2025 with normal to above normal rainfall anticipated across the country.

3. RAINFALL OUTLOOK FOR ZIMBABWE FOR 2024/2025 SEASON

The seasonal rainfall forecast is divided into four sub-seasons: October to December (OND) 2024, November to January (NDJ) 2024/25, December to February (DJF) 2024/25 and January to March 2025 (JFM).

The country is demarcated into dynamic forecast rainfall zones that follows the forecast signal.

Areas that show the same forecast signal are categorised into same forecast zones.

Terminology

- Normal** — long-term average rainfall received in an area
- Normal to below-normal** — cumulative rainfall most likely to be within the longterm average range with a chance of going below this range
- Normal to above-normal** — cumulative rainfall most likely to be within the longterm average range with a chance of going above this range
- Above normal** — cumulative rainfall most likely to be above the long-term average range with a chance of falling within the long-term average range
- Below normal** — cumulative rainfall most likely to be below the long-term average range with a chance of falling within the long-term average range.

Above-normal rainfall is defined as rainfall amount exceeding 125% of the long-term average (normal rainfall) of the climatic period from 1981-2010; below-normal is defined as rainfall amount less than 75% of the long-term average; normal to below normal rainfall falls within 75% to 100% range of the long-term average; while normal to above normal rainfall is defined as rainfall amounts falling within 100 to 125% range of the long-term average.

4. 2024/2025 SEASON RAINFALL OUTLOOK

The period October 2024 to March 2025 is the main rainfall season over most parts of the country. Owing to the differences in evolution patterns in the predominant rainfall-bearing systems, the rainy season has been subdivided into four overlapping three-month periods (OND, NDJ, DJF and JFM as defined below).

The October 2024 to March 2025 forecast is as follows:

a) Rainfall outlook for the October to December (OND) 2024 period

The country is expected to receive normal to below normal rainfall for the OND subseason (Fig 1a). Fig 1b refers to the long-term average (normal) for OND.

(b) Rainfall outlook for the November to January (NDJ) 2024/2025 period

The country is expected to receive normal to above normal rainfall for the NDJ subseason (Fig 2a). Fig 2b refers to the long-term average (normal) for NDJ.

(c) Rainfall outlook for the December to February (DJF) 2024/25 period

The whole country is expected to receive normal to above normal rainfall for the subseason (Fig 3a). Fig 3b refers to the long-term average (normal) for DJF.

(d) Rainfall outlook for the January to March (JFM) 2025 period

The whole country is expected to receive normal to above normal rainfall for the subseason (Fig 4a). Fig 4b refers to the long-term average (normal) for JFM.

IMPLICATIONS/ADVISORIES FOR THE 2024/2025 RAINFALL SEASON OUTLOOK

The forecast is for cumulative rainfall for three month periods: OND, NDJ, DJF and JFM. The normal to below normal rainfall for the first sub-season (OND) will likely result in a late start to the season in places.

• To Page 5

a) Rainfall outlook for the October to December (OND) 2024 period Forecast: Increased chances of normal-to-below normal rainfall

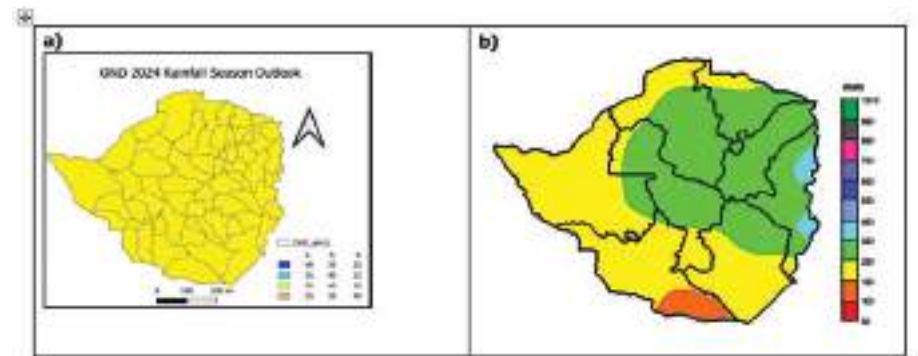


Figure 1(a) Seasonal outlook for October-November-December 2024, (b) Long term mean rainfall for October-November-December (1981-2010)

(b) Rainfall outlook for the November to January (NDJ) 2024/2025 period Forecast: Increased chances of normal to above normal rainfall

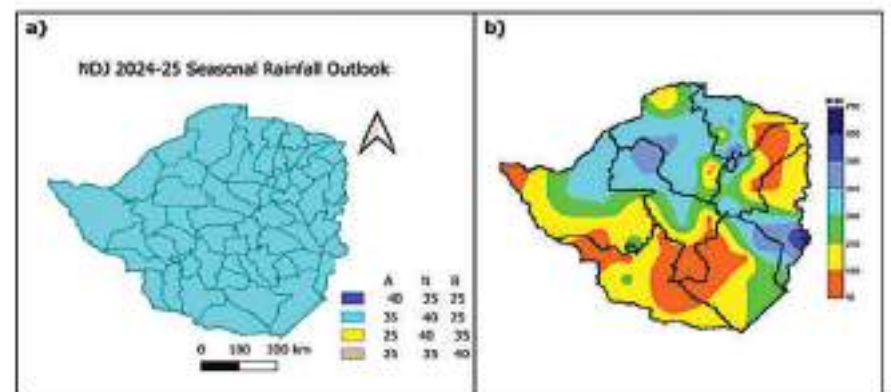


Figure 2(a) Seasonal outlook for November-December-January 2024/25., (b) Long term mean rainfall for November-December-January (1981-2010)

(c) Rainfall outlook for the December to February (DJF) 2024/25 period Forecast: Increased chances of normal-to-above normal rainfall

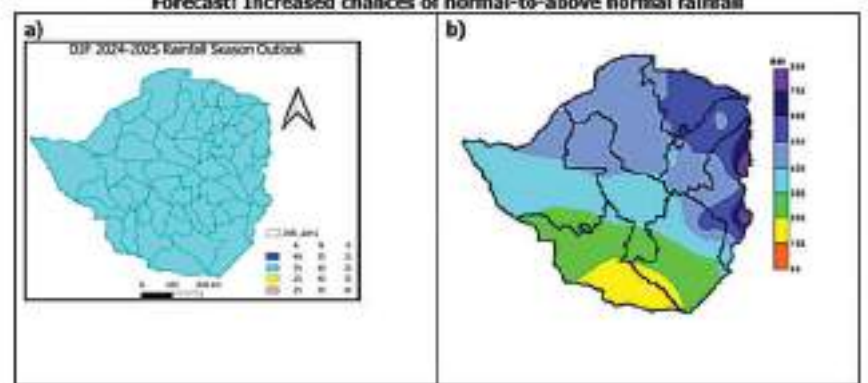


Figure 3(a) Seasonal outlook for December-January-February 2024/25. (b) Long term mean rainfall for December-January-February (1981-2010),

(d) Rainfall outlook for the January to March (JFM) 2025 period Forecast: Increased chances of normal-to-above normal rainfall

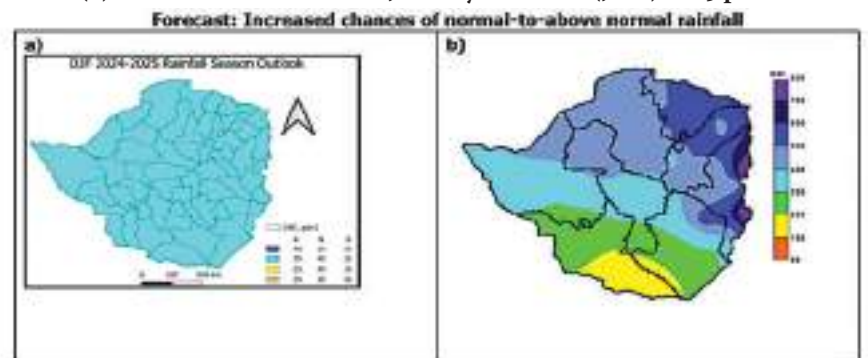


Figure 4(a) Seasonal outlook for January-February-March 2025. (b) Long term mean rainfall for January-February-March (1981-2010)

Land preparation – steps, methods and factors to consider

Tolu Adebola

What is Land Preparation?
LAND preparation, commonly referred to as tillage practices, is a procedure carried out with the intention of creating the required soil conditions that will encourage greater agricultural output.

Land preparation is one of the first activities you carry out on the land. Depending on how you go about it, land preparation could also play a critical role in the control of weeds and pests that might threaten the soil and crop in the future.

Land and soil preparation is important for all sorts of vegetative slope stabilisation methods. To achieve optimum success, all necessary procedures must be followed during land preparation to improve the properties of the soil.

Steps to Follow in Land Preparation

In order to guarantee that the crops are well-established after the land is prepared, it is important to carefully choose the most suitable approach. This means that not following the proper steps can cause harm to the ecosystem, affecting both water and land resources.

Environmental consequences are regarded as the primary issue when detailing land preparation procedures. You have to put the effect it will have on the environment into consideration when preparing the land for usage. There are various steps when preparing the land, and a few of them are:

Pre-irrigation

- This is the first step in land preparation.

Pre-irrigation is regarded to as the practice of flooding the field for a maximum of three days before the initial tilling in order to wet and loosen tight and compacted soil for ploughing to be made easier.

Tilling

- The next activity after pre-irrigation in land preparation is clearing the field or site, which is also referred to as tilling. This will ensure that any undesired vegetation, such as weeds, is eradicated. This is done to clear the way for the new plantation that will be planted on the land, avoid unwanted competition with new plants and remove any weeds that may be a problem for the crop.
- This must be carried out carefully and intelligently in order to guarantee that the undesired vegetation is removed from the roots, avoiding any future complications and impeding the proposed crops that will be grown in the area.

Harrowing

- Harrowing, which is also referred to as secondary ploughing in land preparation, will help break the clumps of dirt into tiny bits. Harrowing often results in a well-aerated soil for cultivation. It also helps achieve good soil moisture, which will make it easy to work on the soil, and paving the way for critical plant life requirements such as nutrients. Harrowing the land will assist the topography of the land by levelling the slopes and allowing for the creation of beds on the soil.

Factors to Consider in Land Preparation

Land preparation is an operation that requires careful investigation. This is not just because it is a laborious process to complete, but because the outcome of the activities can affect the farm's productivity in the future. Land preparation is an operation that requires careful investigation by taking into account a variety of factors. When preparing the land, the following factors determining the kind and extent of land preparation should be taken into consideration.

Soil Features

- When preparing the land before farm operations begin, the characteristics of the land should be thoroughly examined and analysed. Both the topsoil and the subsoil should be carefully sampled and tested. This will provide you with an understanding of the soil's moisture content, texture, soil tilth, soil porosity/bulk density, water-retentive capacity, characteristics and nutrients, and structure, among many other things.

Topography

- Another factor to consider in land preparation is the topography of the land. Topography refers to the surface patterns and characteristics of the land, as well as how they are arranged. The topography of the land has a huge effect on the agricultural operations and production that will be carried out on the land.
- The effectiveness of land preparation and soil cultivation depends on the slope gradient.

The study of the topography of the land will show you where is susceptible to erosion on the farm and how to manage it efficiently so that erosion or flooding does not wash away soil nutrients when farming activities begin.

Land History

- Before preparing the land, it is also vital to examine the farm's history. Previous agricultural activities might have had a significant impact on the productivity of your land. The history of land usage can give useful insights as to the method of land preparation you might apply as a farmer. As a result, this knowledge can assist the landowner in selecting the best method.

Climate and Weather

- There are a lot of agricultural operations that depend on climate and weather for their functionality, and that includes land preparation. Considering the climate conditions and the weather can help you with your choice of crops for the weather.
- Factors like expected temperature rises and humidity levels, changes in extreme weather events, and limitations in water availability can influence the growth of the established plantations, also leading to the choice of the methods of land preparation suitable for the weather and the climate.

Conclusion

Land preparation is a necessary activity that cannot be avoided, thus if it is to be carried out, it must be done correctly and effectively.



EXCHANGE CONTROL CIRCULAR NO.3 OF 2024 TO AUTHORISED DEALERS

ISSUED IN TERMS OF SECTION 35 (1) OF THE EXCHANGE CONTROL REGULATIONS STATUTORY INSTRUMENT 109 OF 1996

1. Reference is made to Exchange Control Directive RZ56 of 08 April 2024 and Exchange Control Circular No. 1 of 03 May 2024, wherein Authorised Dealers were advised of the Interbank Foreign Exchange Guidelines. Exchange Control further advises as follows: -

Duplication of Invoices through Different Authorised Dealers

2. Whilst the Bank recognizes that most companies are multi-banked, Authorised Dealers are advised that for the pipeline demand, applicants are limited in submitting invoices to not more than two (2) banks. This refers to invoices of the same goods from the same supplier without duplicating the same invoice.
3. In this regard, Authorised Dealers should ensure that their clients make appropriate declarations to indicate non-submission of the same invoice through a different Authorised Dealer. This should be done through completion of the Importers Declaration Form (attached) prior to the inclusion of the request on the pipeline demand.
4. In addition, market participants are encouraged to effectively and efficiently utilize foreign exchange in the management and importation of stocks to avoid speculative stock piling. Exchange Control will, from time to time, conduct regular checks on this issue.

Utilisation of Loan Proceeds to Participate on the Interbank Market

5. As previously communicated under Exchange Control Directive RZ56 dated 08 April 2024, market participants are not permitted to participate on the interbank foreign exchange market using proceeds from local borrowings.
6. Accordingly, market participants shall be required to declare on the Importers Declaration Form that the ZIG balances are not from borrowings prior to inclusion of the request on the pipeline demand.

Importers with Sufficient FCA Balances

7. Authorised Dealers are advised that FCA holders with sufficient balances in their accounts across all banks, should first utilize their foreign exchange for foreign payments before accessing funds from the Interbank Foreign Exchange Market or the pipeline demand.
8. In this regard, companies intending to fund payments from the interbank market shall sign the Importers Declaration Form that they do not have sufficient balances.

Exchange Control Compliance

9. Authorized Dealers are directed to ensure adherence to all the Exchange Control compliance parameters contained in this Circular by all market participants when administering transactions on the Interbank Foreign Exchange Market and the pipeline demand.
10. Market participants found in violation of Exchange Control rules and regulations shall be penalized and/or barred from participating on the Interbank market in accordance with Section 5(1) of the Exchange Control Act [Chapter 22:05] and Section 37 (i), (ii), (iii) of Exchange Control Regulations, Statutory Instrument 109 of 1996.

Please be guided accordingly.

F. Masendu
 Director
 EXCHANGE CONTROL
 02 September 2024

Importers Declaration Form

DECLARATION BY IMPORTERS ON THE SUBMISSION OF APPLICATIONS FOR CROSS BORDER PAYMENTS

I / We..... hereby solemnly declare that, in submitting this application through my / our Authorized Dealer..... I / we have not submitted, and I / we will not submit the same application through the same or another Authorized Dealer, using copy documents.

This application is currently not pending with the same or another Authorized Dealer and I / we will not submit the same application while this application is still pending or while any Exchange Control Authority Number that may be issued under this application is still valid.

In addition, I / we declare that in submitting the request for funding of foreign payments from the Interbank market, I / we have no sufficient foreign currency to fund the payment, and the purchase of foreign currency is not funded from Zimbabwe Gold (ZIG) loan proceeds.

The information given above is true and correct to the best of my / our knowledge.

Signed.....at.....this..... day of20.....

Name and capacity of person signing.....

Editor's Note



IT is my sincere hope that I find you well and obviously busy mobilising resources for the approaching season. The Meteorological Services Department (MSD) has since given you a huge send-off into the season by announcing that the season is most likely to have normal to above normal rains.

This is also coming on the backdrop of projections of a possible La Nina weather phenomenon that will be characterising the season. The La Nina prediction had thrown a damp on most farmers' expectations given that such weather is usually associated with violent storms, flooding, heavy rains and in some cases dry weather too.

I hope the preparations are going on well. Your colleagues doing winter wheat have every reason to be smiling all the way to the bank this time around with Government announcing that it will be paying US\$470 per tonnes for the premier grade and US\$450 for the standard. Our prayers are that the wheat is harvested and sent to the Grain Marketing Board (GMB) before the rains set in.

This is, however, being overshadowed by disturbing reports of rising cattle poverty deaths in the country's arid regions where serious shortages of drinking water and pastures are marking the order of the day. Of course I hear that World Vision International has stepped in to drill solar-powered boreholes to supply water to cattle as an immediate stop-gap measure. The Drought Action Committee set up by the Lands, Agriculture, Fisheries, Water and Rural Development Ministry is on the ground in the worst-hit areas, as we speak to assess how the situation can be arrested to curtail further deaths.

Note that World Vision is only rolling out 'immediate' measures to temporarily stop the carnage so this means the measures may no longer be very effective after six months. As the owners of the cattle that are facing this dire situation, you need to come up with lasting solutions for the problem. I am not saying to make it rain but put in place measures that allow you to always switch to plan B in the event of another drought striking.

There should always be a plan for feeds and this is through forage, hay and ordinary crop residue. There are also pods from acacia thorn trees that are reputed for their high nutrition value, which you can always gather from the wild instead of allowing them to rot and disappear into oblivion. It is time you come out of your comfort zone and save your wealth. Remember, cattle are wealth and you must make every effort to save them.

Enjoy!!!



Green vegetables field

The Importance of Choosing Hybrid Varieties in Horticulture



Desire Tavengwa

Background

The choice of seed variety is a critical decision in horticulture, influencing yield, quality, and resilience. Among the various options available, hybrid varieties stand out as one of the most potent tools for boosting productivity and profitability. Hybrid seeds are created by cross-pollinating two genetically distinct parent plants, bringing together desirable traits from both. This process leads to offspring that possess superior qualities compared to either of the parent plants, a phenomenon known as "heterosis" or "hybrid vigor."

For centuries, farmers have been selecting plants with desirable traits and using them to breed subsequent generations. However, modern advances in genetics have allowed plant breeders to identify specific traits and combine them in controlled environments, resulting in hybrids that offer a range of benefits. This article will explore the importance and secrets behind choosing hybrid varieties in horticulture, with a particular focus on how they improve productivity, resilience, and profitability for farmers and the wider agricultural industry.

Increased Yield Potential

The most compelling reason for choosing hybrid varieties in horticulture is their potential for higher yields. Hybrid plants often outperform traditional open-pollinated varieties in terms of fruit size, quality, and overall yield. This is largely due to the phenomenon of hybrid vigor, where the offspring of two genetically distinct plants exhibit enhanced growth rates, disease resistance, and productivity.

For instance, hybrid tomato plants typically produce more uniform and larger fruit than open-pollinated varieties. This not only increases the total

yield but also makes the harvesting process more efficient, as growers spend less time sorting and grading produce. The ability to achieve higher yields per hectare means that hybrid varieties can help farmers meet the growing global demand for food while using fewer resources.

Resistance to Pests and Diseases

One of the secrets behind the success of hybrid varieties is their enhanced resistance to pests and diseases. Plant breeders carefully select parent plants that possess genetic traits for resistance to specific pathogens, insects, and environmental stresses. By combining these traits, hybrid varieties offer a more robust defense against the challenges that horticultural crops often face.

For example, many hybrid cucumbers are bred to be resistant to common diseases such as powdery mildew, downy mildew, and cucumber mosaic virus. This resistance allows the plants to thrive even in environments where disease pressures are high, reducing the need for chemical interventions. The reduced reliance on pesticides and fungicides not only lowers production costs but also supports sustainable farming practices by minimizing environmental impact.

In addition, the ability to cultivate crops that are less susceptible to disease and pest attacks ensures more consistent yields year after year. For farmers, this means less risk of crop loss and more predictable income, which is particularly important in regions where agriculture is the primary source of livelihood.

Improved Adaptability to Environmental Conditions

The climate crisis has made it increasingly important for farmers to choose crops that can adapt to changing environmental conditions. Hybrid varieties are often developed with specific adaptations to withstand varying

climatic conditions such as drought, heat, or excessive moisture. This flexibility makes them a valuable asset in regions where weather patterns are becoming more erratic and unpredictable.

For example, hybrid varieties of peppers, melons, and lettuce are now available that can tolerate higher temperatures or extended periods of drought. This adaptability allows growers to maintain productivity even when conditions are less than ideal, making hybrid seeds a key tool in climate-smart agriculture.

Furthermore, because hybrids often have a broader range of adaptability, they can be grown in a variety of different environments. This is particularly advantageous for horticulturists who may need to rotate crops or manage fields with varying microclimates. By choosing hybrids, farmers can optimise their operations across different growing conditions, thereby maximizing their overall output.

Uniformity and Marketability

Another critical advantage of hybrid varieties is their uniformity. Hybrid plants tend to produce crops that are consistent in size, shape, and colour, which is a significant benefit for commercial growers. Uniformity is a desirable trait because it enhances the marketability of produce, especially in the retail sector, where consumers and retailers often prefer aesthetically appealing fruits and vegetables.

For instance, hybrid strawberries tend to have uniform fruit size and colour, making them more attractive to consumers. This uniformity extends to other horticultural crops as well, such as bell peppers, carrots, and onions, where consistent appearance can command higher prices in the marketplace.

Moreover, the uniform growth patterns of hybrid plants allow for more efficient harvesting and post-harvest handling. Whether the produce is handpicked or harvested using machinery, the consistency in size and maturity simplifies the process, reducing labour costs and minimising post-harvest

• To be continued . . .

EDITORIAL TEAM

Editor: Obert Chifamba

E-mail: obert.chifamba@zimpapers.co.zw

Phone: 0772 886 986

Agricultural Specialist Writer: Edgar Vhera

E-mail: edgar.vhera@zimpapers.co.zw

Phone: 0774 844 050

Reporter: Chenai Musveta

E-mail: nomxolisichenaim@gmail.com

Phone: 0783 562 728

Reporter: Elton Manguwo

E-mail: elton.manguwo@zimpapers.co.zw

Phone: 0785 335 676

Design, Layout & Sub Editing

Editorial Production & Design Department

Advertising & Marketing

Advertising & Marketing Executive: Charles Shungu

E-mail: charles.shungu@zimpapers.co.zw

Phone: 0773 048 277

For all enquiries:

Address: PO Box 396, Corner Sam Nujoma and George Silundika, Harare

Phone: 08677004323, +263 (24)2795771

2024/25 SEASONAL RAINFALL FORECAST FOR ZIMBABWE

• From Page 2

The tropical cyclone forecast will be availed as the rainfall season progresses.

Given the intra-seasonal variability of the rainfall in any season, the following recommendations are being proposed

- The cloud seeding programme to be implemented during the season to enable rainfall enhancement if required.
- Use of irrigation to maximise on the temperatures during the first half of the season (October to December) and during periods of prolonged dry spells during the season.
- Contingency plans for extreme events such as violent storms, prolonged dry spells, flash floods to be in place.
- Water harvesting and conservation programmes to be maintained given the intraseasonal rainfall variability.
- Agricultural activities such as planting and fertilizer application should be guided by the 10-day weather forecasts.

CONCLUSION

The Meteorological Services Department will continue to monitor seasonal climate indicators which influence Zimbabwe's rainfall as they evolve. Thus, the seasonal rainfall predictions will be updated on a monthly basis beginning end of October. In addition to this forecast, there will be daily weather forecasts and 10-day weather bulletins that will account for short term variabilities such as dry and wet spells.



The Ministry of Transport and Infrastructural Development wishes to remind the public and all stakeholders that Fossil Contracting has commenced road construction works on Lorraine Drive, effective 16 September 2024, with an expected completion date of December 2024.

NOTICE TO MOTORISTS:

This notice serves as a reminder to motorists and residents to plan their routes accordingly, as Lorraine Drive will be closed from Harare Drive to Nemakonde Way. All junctions approaching or feeding into Lorraine Drive will also be closed.

ALTERNATIVE ROUTES:

Motorists are advised to use the following alternative routes:

- Lavenham road
- Fabre road
- Northolt road

The contractor will engage regularly with key stakeholders, including:

- District Administrator
- Zimbabwe Republic Police
- Environmental Management Agency
- Ministry of Health and Child Welfare
- TelOne
- Liquid Telecommunications
- Local business owners
- Residents

We apologize for any inconvenience caused during the construction period and appreciate your understanding as we work to improve the road infrastructure. Thank you for your cooperation.

**Eddington Gororo**

Pen Fattening: Where is the Money? (Part 1)

THE growing demand for quality meat and rising prices as we enter the last quarter of the year provide significant opportunities for pen fattening operations. However, to ensure profitability, understanding the costs and how to contain them is crucial. In this first part of a two-part article, we explore the cost drivers in a pen fattening operation.

What is pen fattening?

Pen fattening is an intensive live-stock finishing system in which animals, typically cattle, sheep, or goats, are confined in enclosures and fed a high-energy diet to promote rapid weight gain over a defined period.

The idea is to add extra weight to your animals, improve their carcass grades, finish the animals for the market at a younger age, and take advantage of seasonal price and demand peaks. Higher meat yields and grades translate to better pen-finished stock prices. Pen fattening is advantageous in areas where grazing land is scarce, or during dry seasons when there is limited pasture, but market prices are favourable.

Cost drivers in pen fattening

In a feedlot business, profits are potentially high; but so is the risk of loss. Availability and cost of stock, feed, and other requirements are important decision tools for deciding whether to fatten or not. Thus, it is possible to make losses during pen

fattening.

Understanding enterprise cost drivers is essential for identifying areas where expenses can be minimized without compromising animal health or growth rates. The key cost drivers of pen fattening include, among others:

- i. Feed costs
- ii. Induction costs of animals
- iii. Animal performance
- iv. Duration of fattening
- v. Veterinary costs

Feed costs

Feed is the most significant cost driver of pen fattening, accounting for 60-70% of all expenses. The feedlot manager must take steps to obtain the best feed at the most economical price. Rising feed prices can erode profits, and feeding entirely out of the bag can be expensive.

Maximising feed efficiency is vital for reducing costs. Feed must be highly digestible, balanced and fed on an adlib basis. Feed intake should be regularly monitored and rations should be adjusted to prevent wastage and optimise feed-to-gain ratios.

The typical pen fattening diet is roughly composed of 60-70 parts cereal grains (maize, sorghum, wheat, barley and their by-products), 15-20 parts roughage (hay, maize husk, silage), 10 parts protein concentrates (cottonseed meal/cake, soyabean

**FEEDING TIME ...optimizing nutrition for stronger, healthier livestock**

meal, sunflower cake, and other by-products) and <5 parts supplements (minerals and vitamins). Cereal grains and protein concentrates tend to be expensive but are essential for optimal growth rates.

Opportunities to manage feed costs include on-farm feed formulation, sourcing locally available feed resources such as crop residues or agricultural by-products such as molasses, and bulk purchases. Molasses can replace up to 30% of the cereal grains in the ration. Urea is a good source of non-protein nitrogen, but it should be well-mixed in the diet, constituting no more than 2% urea at maximum.

Animal purchase costs

The price paid and other expenses incurred to get animals to the site, or their initial value, are critical factors affecting the profitability of a pen-feeding enterprise. Fattening stock is often bought on the hoof, priced per kg of live mass. A price bargain will improve the position of the feedlot business.

Purchase prices may differ according to breed, age, body condition, location, and season. Younger animals may be cheaper, but they also take longer to fatten. Conversely, older, underweight animals might be more expensive but could achieve faster weight gains.

Livestock prices often fluctuate based on seasonal demand-supply interaction. Animals are generally less expensive between March and August. Purchasing animals during off-season

can result in significant cost savings. Negotiating contracts with producers of young stock may help the feedlot operation in reducing costs.

Animal selection

Choosing the right animal in terms of breed, age, sex, conformation, and initial weight is crucial for maximizing growth potential and returns in a feedlot. Good conformation and frame are critical for muscle development, high-priced cuts, and high dressing percentage. Starting with animals that have the right frame but are underweight allows for quicker gains during the fattening period.

Genetic differences exist in feedlot performance among animals. Some breeds are more efficient at converting feed to meat, whereas others may require more time or resources to reach market weight. Age is also important because younger animals convert feed more efficiently than older stock.

Young bull calves (still in the milk-tooth stage) may also be used for fattening because they grow faster, are more efficient at turning feed into beef and grade better than steers. Leaner animals are best fattened due to higher feed intake and better feed conversion.

Performance in the pens

Overall performance will depend on the interplay between such factors as the type of animal, the quality of feed, and length of the fattening period. Poor performance in pens significantly increases costs and reduces returns.

Minimum induction weights of 250 kg for young stock (< 2 years) and 300kg for older stock (3 years +) should be considered. As a general guide, a good animal for fattening should achieve a live weight gain (LWG) of 1.2-1.8 kg/day and a feed

conversion ratio (FCR) of 7-8 kg feed to 1 kg live weight gain.

The feeding period can vary from 90 to 120 days, depending on the extent of gain in body weight and condition. Weight gain and feed intake start to increase at the beginning of the feeding period, reaches a peak, levels off for some time and decreases thereafter. When feeding costs equal the value of mass gain, the animal can be sent to slaughter. Regular weighing is therefore important. Basically, a younger animal takes longer to reach peak intake and the lower the rate of decline thereafter.

Heifers are shy feeders, finish sooner and have finish masses that are 10-15% lower than that of steers of the same age and breed. Local breeds, older cows, and adult oxen are poor feed converters and do not adapt well to pen feeding diets. These categories tend to fatten earlier, so they should be fed a shorter time or fed poorer diets to keep costs low.

Veterinary and Health Management Costs

Healthy animals convert feed into weight more efficiently. Disease outbreaks and other animal health challenges can have devastating impacts on business. Healthcare problems in a feedlot may include acidosis, laminitis, urinary calculi, flies and other parasites. Preventive health care measures such as vaccination, biosecurity, and maintaining clean pens are more cost-effective in minimizing risks, reducing losses and ensuring animals reach market weight on schedule.

Utilities and Miscellaneous Costs

Utilities such as labour, water, electricity, transport, and regulatory compliance costs contribute to the overall expenses of a pen fattening operation. Adequate water supply is crucial for animal health and feed efficiency, but it can be a significant expense, especially in areas with limited water resources.

Transport costs include carriage out for fattened stock. The extent of these costs can vary depending on the distance and location. Compliance costs include levies and fees paid during purchase, transfer and slaughter of animals.

Conclusions

Pen fattening is not just about raising animals; it is about raising profits out of finished stock. This business offers great potential for income generation, but the key to unlocking this potential lies in effectively controlling the factors that drive costs.

About the author

Eddington Gororo is an agricultural researcher and academic working for Chinhoyi University of Technology, Zimbabwe. He blogs at <http://letsfarm-zw.com> and can be contacted on +263 77 391 6375 or gorororedington@gmail.com.






HAVE YOU UPGRADED YOUR PREPAID METER YET?

JOIN THE WAVE. UPGRADE YOUR PREPAID METER FOR IT TO CONTINUE
ACCEPTING TOKENS AFTER 24 NOVEMBER 2024

Meter codes to check if you have successfully upgraded

Meter Type (meter number starting with)	Short Code to check Key Revision Number	Result before key change process	Expected result if the process has been successful
INHEMETER Old Version (071...)	077	1	2
INHEMETER New Version (072...)	078	1	2
EDME (480...)	04	1	2
HEXING (141/2...)	875	1	2
ISKRA (50...)	008	1,2	2,2
ITRON (018...)	005	KH KT 1,2 ✓	KR KT 2,2 ✓
LANDIS & GYR (070...)	057	1	2

Select your meter type. Punch in the meter code e.g for EDME meter punch in the code 04 and press the enter button. Before the upgrade, the result is 1 and after the upgrade, the result is 2.

FOR FEEDBACK CONTACT US ON:

704 OR 08680084496 OR 0242704040 +263718619367 / +26371519369
@ZetdcOfficial ZetdcOfficial coolfactcentre@zetdc.co.zw www.zetdc.co.zw

Good Calf Rearing Practices for healthy, profitable calves.



Dr Edson Chifamba

... Continued from September Edition

- It is concentrate rather than milk that should provide the bulk of nutrients to develop the rumen as well as keep the calf growing.
- Calves can be weaned off milk once they are consuming 0.75 kg/day of concentrates for two or three consecutive days. This usually occurs by about 6–8 weeks of age.

Weaning age.

The age when milk is no longer fed should depend on the quality of feeds available. Calves should be weaned at:

- Two months, when quantity and quality of roughage and concentrates are good.
- Four months, when quantity and quality of roughage and concentrates are average.
- Six months, when quantity and quality of roughage and concentrates are poor.
- Eight months, when suckling and cows are dried off.

Concentrate quality.

Milk fed and weaned calves require concentrates containing higher protein levels (18- 20%) than do milking cows (16%). Low protein concentrates will not promote the same rate of rumen and body development in milk fed calves.

- With high milk feeding there is increased likelihood of disease problems. Once milk is removed from their diet through weaning, calves are more resistant to scours. Unless a strict cleaning and sterilising routine is enforced in the calf shed, flies and other disease carrying agents will thrive on residual milk left in buckets, on floors and in other equipment used with milk feeding.
- Scours is the single most important cause of death in milk-fed calves. Even when calves survive, the increased labour requirements for their caring, together with veterinary and drug bills, make scours a costly problem with calf rearers.

What is scours?

It is an increase in the frequency and quantity of dung, which has a higher-than-normal water content. In some cases, blood and mucus may also be present. Whatever the cause of scours, farmers will see some or all of the following:

- bright yellow or white dung.
- depressed calves which are reluctant to feed or suck.
- calves with sunken eyes and/or a temperature.
- skin remaining peaked or tented when lifted, indicating dehydration.
- weight loss and weakness.
- if severe cases, calves will collapse, become comatose and die.

Scours can be classified into two types, nutritional and infectious. Nutritional scours are usually caused

• To Page 10



MOP-UP VETTING EXERCISE FOR NON-COMBATANT CADRES AND WAR COLLABORATORS

(25 SEPTEMBER TO 04 OCTOBER 2024)

Following the launch of the nationwide Vetting Programme for **Veterans of the Liberation Struggle** by His Excellency, the President of the Republic of Zimbabwe, **Cde. Dr. E. D. Mnangagwa** in 2021 and the subsequent vetting in 2022, the Ministry of Veterans of the Liberation Struggle Affairs is scheduled to undertake a mop-up vetting exercise for Non-Combatant Cadres and War Collaborators from **25 September to 04 October 2024**. Applicants are invited to report for vetting at centres where vetting teams will be deployed to ascertain their credentials.

The mop-up exercise is targeting applicants who did not participate in the 2022 programme for various reasons. Non-Combatant Cadres and War Collaborators who were vetted and received confirmation slips in the 2022 vetting exercise are not required to appear before vetting teams. Vetting will be done according to categories of Veterans as defined in Section 2 of the Veterans of the Liberation Struggle Act, Chapter 17:12.

WAR COLLABORATORS

Vetting centres for War Collaborators will be in the areas where they operated from during the Liberation War. Vetting will be done by Commanders and War Veterans who operated together with the War Collaborators in different operational areas. Locals familiar with the activities of War Collaborators will assist the vetting teams. The vetting period is ten (10) days and vetting teams will move from ward to ward according to their schedules which they will communicate on deployment.

NON-COMBATANT CADRES

Vetting will be conducted in the provincial capitals of the ten administrative provinces. Non-Combatant Cadres will choose the nearest provincial capital and present themselves for vetting. Vetting Teams constituted by representatives of all major transit camps will be available in all provinces for the exercise. The transit camps are as follows:

Botswana: Dukwe, Francistown, Selebi-Phikwe and Broadhurst.

Mozambique: Chibawawa, Doeroi, Mabvudzi and Nyadzonya.

Zambia: Jason Ziyaphapha, Maheba, Nampundu, Solwezi, Victory and Chisamba.

PROVINCIAL VETTING CENTRES FOR NON-COMBATANT CADRES

- Harare** - Zimbabwe Hall, Highfields
- Bulawayo** - ZITF Grounds, Hillside Road.
- Manicaland** - Chiefs Hall, Sakubva Grounds, Mutare.
- Midlands** - Gweru Theatre, City Council Building.
- Mashonaland West** - Public Service Training Centre, Chinhoyi.
- Mashonaland Central** - Bindura Showgrounds.
- Mashonaland East** - Mbuya Nehanda Hall, Dombotombo, Marondera.

Matabeleland North - Matabeleland South - Masvingo -

Lupane Business Centre. Agricultural Show Grounds, Gwanda. Mucheke Hall, Masvingo.

Applicants (Non-Combatant Cadres and War Collaborators) are required to bring original national identity documents or valid passports, together with legible photocopies of the same documents.

For more information, contact the District, Provincial or Head Office of the Ministry of Veterans of the Liberation Struggle Affairs. Don't miss this opportunity to validate credentials and receive the deserved recognition for your role in the Liberation Struggle.

Bulawayo:- Ms S Zhou-Machivenyika, **Tel.** +263 292 75695 **Cell:** 0775 507428

Harare:- Mr E.M. Marowa, **Tel.** +263 242 252047 **Cell:** 0772 492757

Manicaland:- Ms L.N Manyati, **Tel.** +263 202168983 **Cell:** 0773 334128

Mashonaland Central:- Ms A Gurupira, **Tel.** +263 66 2106 6500 **Cell:** 0710 454252

Mashonaland East:- Ms M Tsodza, **Tel.** +263 65 23 25228 **Cell:** 0776 476479

Mashonaland West:- Ms Z Gondo, **Tel.** +263 6721 25462 **Cell:** 0777 215480

Masvingo:- Mrs T Machanja, **Tel.** +263 0392 263142 **Cell:** 0772 387969

Matabeleland:- North Mr T Magijo, **Tel.** +263 81 2856 263142 **Cell:** 0776 872056

Matabeleland:- South Mr M Ndebele, **Tel.** +263 8428 22508 **Cell:** 0775 520231

Midlands:- Ms R Hove, **Tel.** +263 542 227465 **Cell:** 0773 086681

Ministry Head Office:- Mr Davet Muzwidzwa, +263 0242 -710324 / 710251 **Cell:** 0772 581116

INSERTED BY THE MINISTRY OF VETERANS OF THE LIBERATION STRUGGLE AFFAIRS

18 SEPTEMBER 2024

Dairy Cow Nutrition (part 1)



Dr Edson Chifamba

THE high producing dairy cow requires a diet that supplies the nutrient needs for high milk production. Carbohydrates, amino acids, fatty acids, minerals, vitamins, and water are all nutrients required by the lactating dairy cow to meet the demand by the mammary gland to produce milk and milk components. Carbohydrates, forming about 75 percent of plant dry matter, provide the major energy source for dairy cows and aid in milk glucose and fat production. Lipids or fats, found in plant and animal products, are a key energy source in dairy cows' diet. Proteins are required by the dairy cow for many metabolic functions e.g. growth, lactation, and reproduction. The protein content in feed is commonly reported as crude protein (CP).



EFFICIENCY IN MOTION ... ensuring the herd thrives with proper feeding and care

The major limiting factor in milk production in Zimbabwe is the high cost of good quality feed. Protein is the most limiting nutrient in dairy cow nutrition especially in small-holder dairy schemes, since they rely on natural rangelands whose feed quality fluctuates in response to sea-

sonal rainfall

Dairy feed can be divided into two groups: roughages and concentrates.

Roughages are bulky feeds like Napier grass, maize stover, Leucaena, banana stem, sweet potato vines, hay,

silage etc. These feeds are usually grown on the farm and are the cheapest to feed to the cow. Most Zimbabwe dairy farmers now prepare and use maize silage, however maize silage has a very low protein content (less than 9 percent) hence it is important for farmers to adopt the use of mixed crop silages with higher protein content of up to 14 percent CP. Mixed crop silages include but not limited to Maize: cow-pea; Maize: velvet bean; Maize: lab lab (or any cereal mixed with high protein subtropical legume). The maize can be replaced with fodder sorghum or even grass in these silages.

Concentrates are products like dairy meal, maize bran, maize germ meal among others. Dairy meal or cubes are more or less balanced concentrates for milk production. Some commonly used meals include: sunflower meal, soya bean meal and Rape seed meal whose nutritional composition is shown below.

- Key nutrients required by dairy cows are water, energy, protein, fibre, vitamins and minerals. These requirements largely determine how we think about the composition of their feed. Feed contains both water and dry matter.
- The dry matter component of that diet is the part which contains the necessary energy, protein, fibre, minerals and vitamins as depicted below.

Dry matter

The dry matter intake concept Dry matter intake (DMI) is a factor that must be estimated before an animal's diet can be properly calculated. Yet, DMI is a concept that's commonly misunderstood. DMI is the level of intake that a cow must consume of a ration that contains the energy concentration recommended

for her by nutrient tables. Fig 1

Consumption controls

Consumption of less-digestible, low-energy, high-fibre diets is controlled by rumen fill and the feed passage rate through the animal. Meanwhile, consumption of highly digestible, high-energy, low-fibre feeds is controlled by the animal's energy needs and by metabolic factors.

How much dry matter will a cow eat?

Depending on the quality of the diet, a mature cow will usually consume 2-4 percent of her live weight (LW). Consumption of low-quality feeds may be 2-3 percent of LW, while green pasture may be 3-4 percent. The factors that influence the amount a cow will eat include her size, body condition, stage and level of production. Other factors include the quality and availability of forage, amount and type of supplements and her environment. With diets high in fibre, the rate and level of digestibility will have a large effect on intake. The faster the feed is digested, the faster it passes through the digestive tract and the more it allows for an increase in consumption.

Poor-quality roughage such as straw and maize stover, on the other hand, will have a slower rate of digestion than a high-quality feed such as Lucerne. With straw, a cow weighing 500 kg l/weight would have to eat about 40 kg.

Importance of dry matter intake

Cows have a minimum requirement for protein and energy to maintain normal body functions — known as their 'maintenance'

- To page 9

Comparison of meals

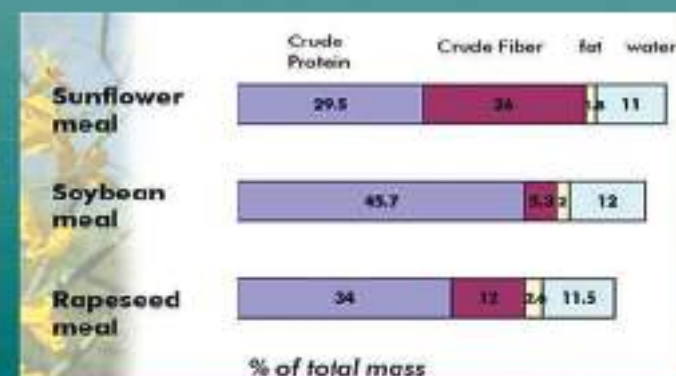
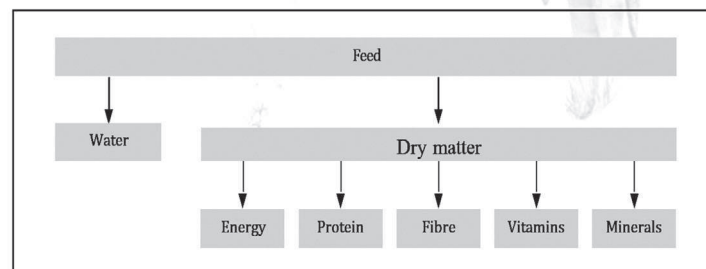


Fig 1.



MINISTRY OF VETERANS OF THE LIBERATION STRUGGLE AFFAIRS



Happy 82nd BIRTHDAY

The Minister of Veterans of the Liberation Struggle Affairs, Hon. Sen. Monica Mavhunga, Deputy Minister, Hon. Sen. Headman Moyo, Secretary for Veterans of the Liberation Struggle Affairs, Mr Albert Tagiwa Chikondo, the Veterans of the

Liberation Struggle Board, Heroes Dependents Assistance Board, Management and Staff of the Ministry wish to join you **Your Excellency, the President of the Republic of Zimbabwe Cde. Dr. E. D. Mnangagwa, the First Family and the Nation** in celebrating this auspicious occasion of your 82nd Birthday.

As the Nation joins you today in celebrations, Veterans of the Liberation Struggle reflect with pride and honour the gruesome journey we endured together from the trenches and colonial dungeons to the realisation of our aspirations. Indeed we are witnessing the manifestation of your futuristic Vision for a prosperous and empowered upper middle income society.

Veterans are inspired by the renewed resolve and focus on improved welfare and economic empowerment initiatives championed under the auspices of the Second Republic.

We wish you Your Excellency many more prosperous years in good health and God's grace as you continue to deliver on the transformative milestones of sustainable growth, peace and shared success for our beloved Zimbabwe. The Ministry and Veterans community pledge continued support to you Your Excellency as you nurture and bequeath to posterity, a patriotic and resilient society.

Makorokoto!! Congratulations!! Amhlophe!!

Dairy Cow Nutrition (part 1)

• From Page 8

requirement — which is approximately 2 percent of their body weight. Maximising dry matter intake provides more nutrients to rumen microbes, which in turn provides more nutrients to the cow for milk production and composition, growth, reproduction and body condition. Every day, an efficient milking cow needs a dry matter intake equivalent to at least 3 percent of their body weight.

Estimating dry matter intake

Measure how much of each feed a cow is eating

Weigh daily allocations of grain, protein meals, conserved forages and hay. Intake of pasture and forage crops are more difficult to estimate. However, visual estimation, cutting quadrats and/or using rising plate m are ways of determining pasture/forage intake levels.

Indicators of adequate daily dry matter intake

- Milk yield and composition on target.
- Lush pasture allocation not fully eaten.
- Silage, grain or mixed feed being left in troughs.
- Cows not standing around 'waiting to be fed'.
- Body condition score on target.

Indicators of inadequate daily dry matter intake

- Low milk yield.
- Cows appearing hungry, bellowing, waiting for feed.
- Cows rushing to fresh forage, to feed troughs, and into the dairy for grain.
- Cows eating all feed allocated in paddocks and troughs.
- Low body condition score.

Useful rules of thumb

- The heavier the animal, the higher its maintenance requirements, and the higher the intake required for production.
 - An efficient milking cow needs a daily dry matter intake equivalent to at least 3% of its body weight.
E.g. A 600 kg cow needs at least 600 kg x 3 percent = 18 kg DM/day.
 - Higher producing cows will eat more than 4% of their body weight as dry matter, e.g. a high-producing (> 30 l/day) 600 kg cow could eat 600 kg x 4 percent = 24 kg DM/day.
- Homegrown forage is the cheapest source of feed for milk production. Aim for maximum daily intake of

good quality forage, supplemented and balanced with other feed sources. Minimise daily variation in forage fed. Rumen microbes can take up to 4-6 weeks to adapt, so change gradually.

A dairy cow changes its milk production, appetite and body condition depending on lactation stage as shown below on Fig 2:

A balanced diet

Cattle must eat different types of feed to supply the various nutrients they need to survive, remain healthy and be productive – that is to grow, produce milk and reproduce efficiently. Diets of cattle are usually called rations. The challenge for dairy farmers is to put together a ration for their cattle, using feeds that are readily available, that supplies all the animals' nutritional requirements, does not cause any health problems, enables the cow to produce as much milk as it is capable of - and to do all this in the most economical and cost-effective way possible.

Highest quality supplementary forages

- Silver leaf and Greenleaf Desmodium
- Lucerne
- Calliandra
- Leucaena
- Sesbania
- Mulberry
- Sweet potato vines (before and after harvesting potatoes)

Good quality bulk forages

- Young Napier grass (less than 1 m tall; dark green stems and leaves)
- Young Rhodes/Kikuyu/Setaria grass (fresh, green leaves and stems; up to flowering stage)
- Young fodder sorghum (fresh, green leaves and stems; before flowering stage)
- Young fodder oats (fresh, green leaves and stems; before flowering stage)
- Young roadside grass (fresh, green stems and leaves; before flowering stage)
- Hay (made at early to mid-flowering stage of grasses)
- Horticultural waste (outer leaves of cabbages and fresh green beans and peas rejected by export companies)
- Poor quality bulk forages
- Overgrown Napier grass (more

- than 2 m tall)
- Dry maize or sorghum stover (after harvesting of the cob)
- Rice straw
- Wheat straw
- Barley straw
- Old, dry pasture/grass (dry leaves and dry, hard stems; seed dropped)
- Bean haulms/husks (after harvest-

- ing the beans)
- Banana pseudostems and leaves (fresh green leaves and stems)
- Sugar cane tops

The Writer is an International Dairy Expert. He has worked as Dairy Scientist for UNDP in Tanzania, Technical Dairy Specialist for

the East Africa Dairy Development in Kenya, Uganda and Rwanda and recently as Project Coordinator for the EU funded Transforming the Zimbabwe Dairy Value Chain for the future (TranZDVC). He is reachable on: Email: edsonchifamba@yahoo.co.uk Mobile: +263 774 836 438

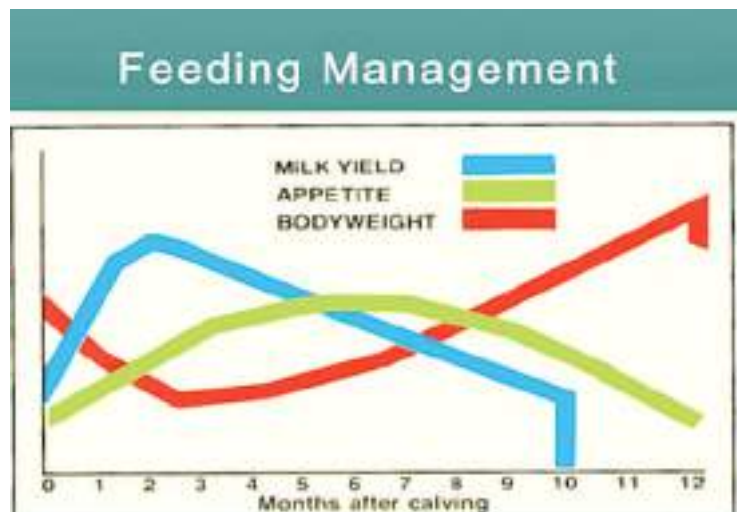




Fig 2.

HAPPY BIRTHDAY

Shumba

The Zimbabwe National Water Authority would like to congratulate, **His Excellency, the President, Dr Emmerson Dambudzo Mnangagwa** on the occasion of his birthday.

ZINWA greatly cherishes and appreciates President Mnangagwa's vision for water secure nation and wishes him many more years.

Agricultural laws to know

1. Never target high seasons; high seasons come with their own challenges. Be a farmer, not a gambler.
2. Choose at least three main crops and a crop rotation plan. Switching from one crop to another is not directly in your pocket.
3. Plan your farm and always have crops at different stages of age to ensure a constant supply.
4. No crop is profitable in itself; just master the advantages and disadvantages of a particular crop.
5. Having a lot is not a guarantee for successful farming.
6. Have a spraying and manuring plan and stick to it.
7. Never follow the advice of agro-veterinarians and agrochemical sales agents. Most of them are salespeople, not agronomists.
8. Try as much as possible to reduce agricultural expenses without compromising the quality of products.
9. Never hold onto a product if it is perishable. Sell it at prevailing prices.



10. Never plant a new seed on a large scale before testing it, unless you have seen it somewhere.
11. Never entrust your million-dollar idea to a farm worker; make sure you are present during critical stages of crop development until commercialisation.
12. Never employ a close family member to manage your farm; most of them will let you down.
13. If you are neighbouring farmers,

- plant the same crop.
 14. Never apply agricultural information you get online without consulting your agronomist.
 15. Always have a farm plan.
 16. Old is always good. Most old seed varieties and chemicals will never disappoint you.
- Passion is key and patience is vital in agriculture

Compiled by *OrganiX Agri & Hydro*

Good Calf Rearing Practices for healthy, profitable calves



Fig 1. Recommended calf housing

• **From Page 7**
by stress to the calf due to a breakdown in management routines. Nutritional scours often progress to an infectious scour, which is caused by a high population of pathogens.

Causes of nutritional scours

- Scours can be traced back to two major causes, poor colostrum feeding management and stress. One of the first effects of stress in calves is a reduction of acid secretion into the true stomach (or abomasum). This reduces both the ability of the clot to form, and digestion of milk protein.
- Stress can result from a wide variety of causes. It could be due to inappropriate milk feeding programs (eg overfeeding or irregular feeding), sudden changes in the concentration of milk replacers, incorrect milk temperatures or a poor-quality milk powder. Calves reared on milk replacers are more prone to scours than those reared on whole milk.
- Environmental stress is also a common cause of scours, such as sudden changes in the weather (for calves run outdoors) or cold, damp, draughty or humid conditions inside calf sheds. Overcrowding in calf sheds can result in outbreaks of scours. Even changes in staff can lead to scours through different handling of calves or changes in the standards of hygiene. Combinations of any of the above stresses will greatly increase the likelihood of scours.

The following signs are used to anticipate the onset of scours on the day before it occurs:

- dry muzzle, thick mucus appearing from the nostrils.
- refusal of milk.
- a tendency to lie down.
- a high body temperature (over 39.3°C).
- Scouring calves can lose up to five litres of fluid each day including minerals and salts essential for normal body function. With most infectious scours, it is the dehydration and acidosis, not the infection, that kills the calf.

Treating scours

- The top priority for treating scouring calves is to provide them with sufficient liquid and electrolytes to replace that lost in the dung. The next priority is to supply additional sources of readily digestible energy, such as glucose (dextrose), but not sucrose.

- If giving both electrolytes and milk, electrolytes should be given at least 30 minutes before a milk feed.
- Treated calves should be back to normal after two days of fluid therapy.
- It is dangerous to withdraw milk for more than 24–48 hours as the intestinal wall will degenerate and lose its capacity to secrete enzymes that digest lactose. Many authorities now recommend withholding milk for no more than 24 hours, or even not at all.

Preventing scours

- Feeding high quality colostrum for the first few days of life is beneficial. Even if some of these antibodies are not absorbed into the blood, they can still provide local protection in the intestines against infectious scours.
- Good hygiene and minimising stress.

Measures that can be taken include:

- Ensure calves are protected from extremes of climate.
- Carefully plan shed designs to avoid overcrowding (Fig 1).
- Minimise stresses associated with routine management practices, such as disbudding and castration.
- Maintain strict hygiene by cleaning and sterilising feeding utensils and facilities during milk rearing.
- Develop a routine milk feeding program, with as few people involved as possible.
- Wean early to minimize the period of milk feeding.
- Quickly respond to early symptoms of scours, isolate sick calves and address the cause.
- Minimise the use of antibiotics and then only under veterinary supervision.
- Keep records of treatment of sick calves to assist in veterinary diagnoses and for withholding periods if the calf is subsequently culled.

The Writer is an International Dairy Expert. He has worked as Dairy Scientist for UNDP in Tanzania, Technical Dairy Specialist for the East Africa Dairy Development in Kenya, Uganda and Rwanda and recently as Project Coordinator for the EU funded Transforming the Zimbabwe Dairy Value Chain for the future (TranZDVC). He is currently assisting dairy development in Botswana. He is reachable on: Email: edsonchifamba@yahoo.co.uk Mobile: +263 774 836 438



BIRTHDAY MESSAGE TO HIS EXCELLENCY THE PRESIDENT OF THE REPUBLIC OF ZIMBABWE, CDE DR. E. D. MNANGAGWA



The Registrar General, Mr. H. T. Machiri, the Deputy Registrars General, Management and Staff join the First Family and entire nation in congratulating His Excellency the President of the Republic of Zimbabwe, Cde Dr. E. D. Mnangagwa on the occasion of his 82nd birthday.

As we celebrate your birthday, we acknowledge your visionary leadership for Zimbabwe. Your dedication to promoting unity, peace and stability is truly inspiring. We appreciate your support for our efforts to strengthen civil registration systems and promote social and economic development.

We re-affirm our commitment to providing secure, reliable and citizen-centric civil registration services as we rally towards realisation of Vision 2030.

**CONGRATULATIONS,
MAKOROKOTO, AMHLOPHE**

Civil Registry Department
Caring for Vital Civil Registration Events and Travel Documents



Bolton Kakava

Introduction

Avocados (scientific name: *Persea americana*) are classified into four main types: Guatemalan; Mexican; West Indian; and Hybrids. Commercial varieties include: Hass avocado, a Guatemalan race with pebbled black skin, is the main planted variety today. Hass lends itself well to ripening and can withstand long transport times. There are new Hass varieties available, such as Lavi Hass, Lamb Hass and Gem Hass. In addition, Fuerte (hybrid), Ettinger (hybrid) and Pinkerton (hybrid) are also popular varieties.

Avocado Protocol

Zimbabwe and China signed the avocado protocol to unlock avocado exports from Zimbabwe to China at the Forum on China Africa Cooperation (FOCAC) in Beijing. The protocol enables avocado producers to expand their export markets into the largest avocado market in Asia.

Market trends

According to the International Trade Centre, China has overtaken Japan as the largest importer, taking 66,000 tonnes in 2023. Peru and Mexico are the dominant suppliers. Peru was the largest supplier of avocados to China, with shipments rising by 40 percent to 50,000 tonnes. Peru held a 76 percent market share, followed by Chile (11 percent) and Kenya (6.6 percent). According to the OECD/FAO Agricultural Outlook 2021-2030, avocados are expected to become the second-most traded major tropical fruit by 2030, after bananas. Avocados will overtake the export volume of both pineapples and mangoes.

Mandatory requirements

According to the regulations of the Chinese Customs and the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe on the plant quarantine requirements for the export of fresh avocados to China, imports are allowed from now on.

I. Inspection and quarantine basis

(I) "Biosafety Law of the People's Republic of China";

(II) "Law of the People's Republic of China on Entry and Exit Animal and Plant Quarantine" and its implementing regulations;

(III) "Food Safety Law of the People's Republic of China" and its implementing regulations;

(IV) "Regulations on the Supervision and Administration of Inspection and Quarantine of Imported Fruits";

(V) "Protocol on Plant Quarantine Requirements for the Export of Fresh Avocados from Zimbabwe to China between the General Administration of Customs of the People's Republic of China and the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe".

II. Names of commodities allowed for import

Fresh avocado (hereinafter referred to as avocado) scientific name *Persea americana*, English name Avocado.

III. Permitted origin

Avocado producing areas in Zimbabwe

IV. Approved orchards and packing houses

Orchards, packing houses and fumigation facilities for avocados exported to China must be audited by the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe and approved for registration by the Chinese Customs. Reg-

Exploring the Chinese Avocado Market

istration information includes name, address and registration number to facilitate accurate traceability when exported goods do not comply with

relevant regulations. Before the export season each year, the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe shall pro-

vide the registration list to the Chinese Customs, which will be published on the website of the

• To Page 12



Congratulatory message by the Office of the Attorney-General to His Excellency the President, Cde Dr. E.D. Mnangagwa on his 82nd Birthday, 15 September 2024.



The Attorney-General, Honourable Mrs V. Mabiza, the Board, Deputy-Attorneys-General, Management and Staff in the Office of the Attorney-General join the First Family and the entire Nation in congratulating His Excellency the President of the Republic of Zimbabwe, Commander-in-Chief of the Zimbabwe Defence Forces, Cde Dr. E. D. Mnangagwa, on the occasion of his 82nd birthday.

We celebrate a fearless, patriotic, resolute, and transformative leader whose contribution to the total emancipation of Zimbabwe from the vestiges of colonial bondage is a marvel of many. Throughout his revolutionary, inspirational and illustrious political career, Cde Mnangagwa has always put the national interest first.

His vision of building a just and prosperous nation, founded on the values of transparency, equality, freedom, honesty and the dignity of hard work has inspired many, and will forever be cherished by current generations and posterity. Through his able stewardship of the Second Republic, President Mnangagwa has presided over the rapid evolution and transformation of Zimbabwe into a formidable giant which is now on a solid and firm trajectory "Towards a Prosperous & Empowered Upper Middle-Income Society by 2030".

As we celebrate His Excellency the President's 82nd birthday, and his visionary leadership, we continue to cherish his recent assumption of the prestigious position of Chairman of the Southern African Development Community (SADC).

Congratulations, Makorokoto, Amhlophe!!

Our Mission

To promote, uphold, protect the rule of law, and defend the public interest through the provision of sound, timely, efficient and impartial legal services to the Government.

Exploring the Chinese Avocado Market

• From Page 11

Chinese Customs after approval.

V. Quarantine pests of concern

1. *Ceratitis capitata*
2. *Ceratitis cosyra*
3. *Ceratitis rosa*
4. *Thaumatotibia* (= *Cryptophlebia*) *leucotreta*
5. *Spodoptera littoralis*
6. *Aulacaspis tubercularis*
7. *Ceroplastes rusci*
8. *Ceroplastes destructor*
9. *Coccus longulus*
10. *Pseudococcus longispinus*
11. *Selenaspis articulatus*
12. *Elsinoe perseae*
13. *Pseudomonas syringae* pv. *syringae*
14. *Purpureocillium lilacinum*

VI. Pre-export management

(I) Orchard management.

1. Avocado orchards exported to China should establish a sound quality management system and traceability system under the supervision of the Ministry of Land, Agriculture, Fisheries, Water and Rural Development of Zimbabwe, implement good agricultural practices (GAP), including maintaining sanitary conditions in the orchard, timely cleaning of fallen fruits, etc., and implement integrated pest management (IPM), such as pest surveys, monitoring, chemical or biological control, and agricultural operations, to avoid or minimize the occurrence of quarantine pests of concern to Chinese customs on avocados.
2. The Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe shall, in accordance with the requirements of International Standard for Phytosanitary Measures No.6 (ISPM 6), have technical personnel under the guidance of the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe or its authorized agencies conduct monitoring surveys on quarantine pests of concern to the Chinese Customs. If quarantine pests of concern are found, appropriate control measures shall be taken immediately. Pest control plans and integrated pest management measures shall be approved by the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe and provided to the Chinese Customs upon request.
3. For *Ceratitis capitata*, *Ceratitis cosyra*, *Ceratitis rosa* and *Thaumatotibia* (= *Cryptophlebia*) *leucotreta*, integrated management measures shall be taken, including the use of chemical control, biological control and mating disruption measures, or other control methods, to control the occurrence of pests or maintain a low level of pest prevalence.
4. For *Elsinoe perseae*, an orchard monitoring system should be established, orchard management should be strengthened, and field monitoring surveys should be conducted at least once a month during the avocado growing season. Once round or irregular shapes, brown, corky spots are found on the surface of the fruit, or the veins are twisted, or the leaves are deformed and shrunk, or the fruit drops for unknown reasons or deformed fruits are found, samples should be taken in time and sent to the laboratory for molecular biological identification. Once it is confirmed that the plant is susceptible to *Elsinoe perseae*, the infected fallen fruits or branches and leaves must be concentrated for inactivation. At the same time, strengthen the investigation and monitoring of surrounding plants.

5. For pests of concern to the Chinese Customs, such as *Spodoptera littoralis*, *Aulacaspis tubercularis*, *Ceroplastes destructor*, *Ceroplastes rusci*, *Coccus longulus*, *Pseudococcus longispinus*, and *Selenaspis articulatus*, monitoring surveys should be conducted during the growing season, at least once every 2 weeks from flowering to harvest. The survey focuses on observing whether the fruit, fruit stalk, branches, stems and leaves have target pests. If pests or their corresponding symptoms are found during monitoring, prevention and control measures, including chemical or biological control, should be taken in a timely manner to control the occurrence of pests or maintain a low level of pest prevalence.
6. Orchards exporting to China should keep pest monitoring and control records for at least two years and provide them to the Chinese Customs upon request. Pest monitoring and control records should at least include the monitoring time, the name of the pest found, and the control measures taken; chemical control records should include detailed information such as the name, active ingredient, concentration, and application date of all chemical agents used during the growing season.

(II) Packaging plant management.

1. Avocado processing, packaging, storage and shipping must be carried out under the quarantine supervision of the Zimbabwe Ministry of Land, Agriculture, Fisheries, Water and Rural Development or its authorised agency.
2. During the postharvest processing and packaging of avocados, they should be washed with high pressure sprays, brushed with brushes, manually sorted, and graded to ensure they are free from live insects, bad fruits, inferior fruits (overripe fruits, detached fruits, scarred fruits, black-spotted fruits, deformed fruits etc.), branches, leaves, soil, etc. The fruit stalk should not be longer than three millimetres.

III. Packaging requirements

1. The packaging materials should be clean and unused, and meet relevant plant quarantine requirements of China. If wooden packaging is used, it must comply with the International Standard for Phytosanitary Measures No. 15 (ISPM 15).
2. If packaged avocados need to be stored, they should be immediately put into storage and stored separately to avoid reinfection by pests. Each packaging box must be marked with information such as the name of the fruit, country, place of origin (district or county), orchard name or its registration number, and packaging plant name or its registration number. Each packaging box and pallet must be marked with or "Exported to the People's Republic of China" in Chinese or English.
3. Before packing the Chinese avocados for transportation, the container should be checked to ensure that it has good sanitary conditions. Necessary anti-insect measures should be taken during packing.

(IV) Inspection and quarantine before export.

1. The Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe or its authorized personnel shall sample and inspect each batch of avocados exported to China at a rate of two percent of each batch of goods, with a minimum sampling volume of 1,200 fruits, and at least 60 fruits in the two percent sample or suspicious

fruits found during the inspection process shall be dissected for inspection. If there are no plant quarantine problems within two years, the sampling rate may be reduced to one percent, but the sampling volume shall not be less than 1,200 fruits.

2. If live quarantine pests of concern to the Chinese Customs are found, the entire batch of goods shall not be exported to China. The Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe shall find out the reasons and take improvement measures. At the same time, the inspection records shall be kept and provided to the Chinese Customs upon request.

(V) Quarantine treatment requirements.

Avocados exported to China should be fumigated with methyl bromide for *Ceratitis* and *Thaumatotibia* (= *Cryptophlebia*) *leucotreta* under the supervision of authorized personnel from the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe. The fumigation treatment indicators are as follows: the temperature is above 21.1 degree Celsius; the fumigant dosage is 32 grammes per cubic metre, and the duration of normal pressure fumigation is not less than two hours; and the minimum concentration during the fumigation period must be not less than 26 grammes per cubic metre after half an hour and not less than 16 grammes per cubic metre after two hours.

(VI) Plant quarantine certificate requirements.

1. For avocados that have passed the quarantine, the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe shall issue a phytosanitary certificate, indicating the name of the orchard, packaging plant, fumigation treatment, enterprise or its registration number and the container number and indicate in the additional statement: "This consignment complies with the requirements specified in the Protocol of Phytosanitary Requirements for Export of Fresh Avocado Fruits from Zimbabwe to China, and is free from quarantine pests of concern to China."
2. In the quarantine treatment of the column of the phytosanitary certificate, the dosage, duration and treatment temperature of methyl bromide used for fumigation treatment shall also be indicated.
3. The Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe shall provide a sample of the phytosanitary certificate to the Chinese Customs before the start of trade for filing and verification by the Chinese Customs.

VII. Entry Inspection and Quarantine and Disqualified Treatment

4. When avocados exported to China arrive at the Chinese entry port, the Chinese Customs shall implement inspection and quarantine in accordance with the following requirements.

(I) Verification of relevant certificates and labels.

1. When avocados arrive at the Chinese entry port, the Chinese Customs will check the relevant documents and labels and implement inspection and quarantine.
2. Check whether the plant quarantine certificate complies with the provisions of Article 6, paragraph (6) of this announce-

ment.

3. Check whether the labels on the packaging boxes or pallets comply with the provisions of Article 6, paragraph (3) of this announcement.

(II) Entry inspection and quarantine.

1. Avocados exported to China should enter the country from ports where the Chinese Customs allows the import of fruits.
2. According to relevant laws, administrative regulations, rules and other regulations, imported avocados will be subject to inspection and quarantine. If they pass the inspection and quarantine, they will be allowed to enter the country.

(III) Disqualified treatment.

1. If it is found that the goods come from unregistered orchards, packaging plants or fumigation facilities, the batch of goods will not be allowed to enter the country.
2. If quarantine pests of concern to the Chinese Customs or new quarantine pests in Zimbabwe are found, the batch of goods will be returned, destroyed or treated for pests.
3. If it is found that the goods do not meet the national food safety standards of China, the batch of goods will be returned or destroyed.
4. If the above non-compliance is found, the Chinese Customs will notify the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe and suspend the export of avocados from the relevant orchards or packaging plants to China in this export season. The Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe should conduct an investigation, find out the reasons and implement corresponding improvement measures. The Chinese Customs will decide whether to cancel the suspension measures based on the rectification results of the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development of Zimbabwe.

Certification and sustainability

The common certification for avocados is Global GAP for good agricultural practices and BRCGS, IFS or similar HACCP based food safety management systems for packing and processing facilities. Producers are recommended to use Global Food Safety Initiative (GFSI) recognized food safety management systems. Sustainable and social standards are now a norm in the global fruit and vegetable markets. Besides Global GAP, a social certificate such as Sedex Members Ethical Trade Initiative (SMETA) or Global GAP Risk Assessment on Social Practice (GRASP) are highly recommended to get your product to meet retail standards.

Bolton Kudzai Kakava is a Regulations and Compliance Consultant



Farm Budgeting

... continued from last edition

1. Break even production unit

This is the minimum production unit (area, herd size, batch size) a farmer should produce to cover all costs over and above variable costs at a given output and yield

For example, a farmer with a Gross Margin (GM)/ha of US\$300 and overheads of US\$6,000 and a loan repayment is US\$4,500 annually. What is the number of hectares to cover the costs per year?

Calculation:

Gross margin per ha = \$300

Overheads = \$6,000

Loan payment = \$4,500

Total costs = \$10,500

Break even hectares = $10,500 / 300$

= 35ha

If farmer produces on 35ha s(he) will cover variable costs, overhead and payback loan and interest. Profit is equal to zero

2. Break-even price

This is the price to cover variable costs at a given yield level.

Break-even price = Total variable costs/Expected yield

If total variable costs for maize are \$800/ha and expected yield is 4t/ha

Break-even price = $800 / 4$ = \$200

Farmer will just cover variable costs at a price of \$200/tonne. Need a price to cover overheads.

A. Whole farm budget

Combines all the enterprises and resources of the farm to provide an overall picture of the expected net returns for the period.

The budget provides a basis for preparation of net worth statements and cash flow statements in the absence of farm records.

This budget summarises the total farm business and determines the relationships among different parts of the farm.

I. Role and Applicability of the Whole Farm Budget

- When setting up a new farm.
- When adding or expanding existing crop or livestock enterprises.
- When there is a major shift in supply and demand, which affects prices and markets.
- When there is a substantial change in farm goals (for example, change in focus from cattle ranching to

cropping).

II. Estimating whole farm budget

1. Multiplying livestock revenue and expenses per head by chosen number of animals
2. Multiplying crop revenue and expenses per hectare by chosen number of hectares per crop
3. Estimation of whole-farm expenses (fixed costs of the farm)

NB: A positive Net Farm Income (NFI) is an indicator of a profitable farm business

III. Components of a whole farm budget

- Whole Farm Gross Margins (WFGM) — This refers to the gross amount for all enterprise margins.
- Net Farm Profit (NFP) — This is calculated as Whole Farm Gross Margin less fixed costs and refers to the return to farmer on capital invested and effort exerted.
- Farm surplus = Net Farm Income less household expenses less loan redemption less tax payment
- Is used when seeking financial assistance such as loans.

Example of a whole farm budget on Fig 1. Table below

B. PARTIAL BUDGET

An analysis focusing on changes that occur in costs and incomes as a result of small changes in a farm programme.

It is a planning tool adopted to analyse relatively small changes in the whole farm by looking at only income and expense items that will change and not total values.

Partial budgeting is also a systematic process of choosing alternatives.

Partial budgeting is applicable for decision making when there is:

- A change in the combination of enterprises.
- A change in production methods or management practices.
- When a new technology (for example, herbicide) is adopted.

Four types of changes

- Additional revenue (gain)-A
- Reduced expenses (gain)-B
- Reduced revenue (loss)-C
- Additional expenses (loss)-D
- Determine the net change in income

- Net Gain=(A+B) – (C+D)
- Consider any non-monetary issues arising out of the change

Prepared by:

- Current plan:
- Change in plan:
- Unit:

- POSITIVE EFFECTS:
- 1. ADDITIONAL REVENUE
- 2. REDUCED EXPENSES

- NEGATIVE EFFECTS:
- 3. REDUCED REVENUE
- 4. ADDITIONAL EXPENSES
- NET EFFECT = Positive minus Negative Effects
- NOTES:
- DECISION:

Partial Budget Format

- Date of estimation:



Congratulations!!!

His Excellency, Cde. Dr. Emmerson Dambudzo Mnangagwa

Chinhoyi University of Technology Council Chairman, Eng. Martin Manuhwa, Vice Chancellor, Professor David Jambgwa Simbi, University Council, Management, Senate, Staff and Students collectively convey congratulatory regards to the Chancellor of all State Universities, His Excellency the President of the Republic of Zimbabwe, Dr Emmerson Dambudzo Mnangagwa, on the occasion of his 82nd Birthday.

As an icon of the struggle for Zimbabwe's independence, His Excellency and Chancellor has played a pivotal role in the great transformation of the higher and tertiary education sector in the country as evidenced by the reconfiguration of our education system under the model of heritage-based Education 5.0.

As Chinhoyi University of Technology, we share in the joy of the good health and productive life bestowed upon a man whose vision continues to shape academia into a critical facet of our national development trajectory. Thank you for your people-centred passion to bring out the best from our heritage on the road to Vision 2030. Blessings and many happy returns Shumba Murambwi!

Congratulations! Makorokoto! Amhlophe!

Communications and Public Relations Directorate



Whole Farm Budget					
Enterprise	Land Size (ha)	Costs (US\$)	Returns (US\$)	GM/Ha (US\$)	Total GM (US\$)
Maize	10	800	1,400	600	6,000
Soya Beans	20	500	1,000	500	10,000
Poultry (10,000 birds)	-	27,200	32,600	5,400	5,400
Whole Farm Gross Margin					21,400
Fixed Costs (rental, electricity, etc.)					1,000
Net Farm Income			20,400		

Fig 1.



Dr Guta stresses a point



Traders at Guzha fresh produce market



The recently commissioned cold rooms at Guzha Market

Manyame RDC: Vital cog in the country's smallholder horticulture growth

Obert
Chifamba

CONVENTIONALLY, rural district councils (RDCs) are mandated to play a vital role in local governance and maintenance of essential services such as infrastructure, education, healthcare and public utilities in their areas of jurisdiction. They are also involved in development planning, resource mobilisation thereby contributing to the overall well-being and growth of their districts among other things.

Fast forward to the business of the day – there are some RDCs that are going beyond just ensuring that citizens under their jurisdictions have access to decent housing and other basic social and infrastructural services by traversing into the food security landscape.

Let's say "hello" to Manyame Rural District Council. Situated 55 kilometres away from Harare along the highway to Beitbridge, this is a local authority whose district, Seke, covers 263 700 hectares of land with a population of 200 478 people according to the 2022 census and 52 000 households.

I had the pleasure of visiting the council's head office in Beatrice and met its chief executive officer Dr Farirai Guta to understand how her council was managing to handle its

governmental roles and also still finding time to be involved in agricultural matters.

"You will appreciate that our district, Seke, has communal, commercial and peri-urban farming activities with more than three quarters of the people surviving on agriculture so we cannot pretend not to see that, hence the need to step in and help where we can. The economy of the district is predominantly agro-based so it becomes necessary for use to ensure we support agriculture to enhance food security and boost the socio-economic reality of citizens.

"We have a lot of smallholder horticultural activities from most parts of the district and those farmers need markets to sell their produce and make a living. We recently partnered with Save the Children International to rehabilitate Guzha fresh produce at Chikwanha business centre in Chitungwiza. We also built cold rooms at a cost of US\$400 000 to make sure farmers store their produce safely and avoid post-harvest and storage losses," explained Dr Guta.

She added that her council had plans to regularly upgrade all vegetable markets dotted around the district to ensure that farmers get the value of their toil and stressed the need to eliminate exploitative middlemen who fleece farmers of their produce and hard earned cash through distorting market intelligence to suit their personal whims.

"In most cases these unscrupulous middlemen influence markets to the disadvantage of farmers who later sell dispose at give-away prices to escape

losses. The middlemen later sell the produce at higher prices. We also want to draw a line between fresh produce retail outlets and wholesale suppliers to ensure all parties get their fair shares of the deal.

"We want to ensure that those renting stalls have access to cold rooms and do their business in a friendly environment and make their deserved profits. Remember these markets must create interaction platforms for farmers and buyers from both local and international destinations. Our ultimate goal is to reach a stage where we link the farmers to international markets. We will assist them to do so," said the soft-spoken Dr Guta, her face exuding the strong passion that she freely confesses to have for agriculture.

The council is now in the process of renovating waiting rooms at Guzha market for farmers that travel from distant places to spend the night in waiting to sell produce the following morning or even shelter from elements of weather. The space the market is occupying was once a bar, which it decided to put to a better communal purpose.

On the one hand, the council supports three vulnerable households from each of the 21 wards every season with an inputs package comprising seed and fertilisers, as part of efforts to boost food security and reduce citizens' dependency on food handouts. It is also contributing to the Zunde raMambo programme by providing inputs and also buys dipping chemicals, which it gives to the Department of Veterinary Services (DVS) to dis-

tribute throughout the district.

"This is part of our contribution to the fight against tick-borne diseases that are frustrating national efforts to rebuild the national herd after years of decimation courtesy of diseases and drought-inspired problems. We are also pushing to open at least 20 kilometres of road networks in all resettlement areas to enable farmers to transport produce to major roads linking them with markets.

"We are also maintaining and rehabilitating existing roads regularly to make sure farmers are not cut off from communication with those outside their farming world. They must not fail to deliver produce to the markets because there are no roads and transporters are not comfortable doing business with them to protect their

vehicles," added Dr Guta.

On the one hand, the council is also collaborating with the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development to establish business centres that will provide the farmers situated across the district with opportunities to market their produce. Manyame RDC has also embarked on providing social amenities in resettlement areas and has established a number of classroom blocks in many areas now.

"Our is now in the habit of drilling one borehole per ward per year as a way of boosting access to drinking water for citizens. We also repair existing boreholes most of which have been in use for many years.

"Obviously, the water from the boreholes is used for many other purposes that include irrigation and watering livestock, which is a plus for farmers, as they will not need to travel long distances in search of the precious liquid in times of scarcity.

"We intend to buy a rig resources permitting next year so that we cut the costs of hiring one each time we want to increase our boreholes in the district.

"Council will use devolution funds to do some of these projects so that our citizens can go about their farming projects without hassle," commented Dr Guta.

She went further to reveal plans to rehabilitate fresh produce markets at Dema and Westminister along the Beitbridge-Masvingo highway to give farmers more trading options basing on their various geographical locations.

Why grow Passion Fruit?

PASSION fruit is a vigorous, shallow rooted, perennial vine that climbs by means of tendrils.

- It can grow as tall as (six metres) high and a more realistic life expectation is three to five years.
- Passion fruit demand is growing in Europe, Middle East and China, the prices are lucrative making the business very profitable.
- One hectare of Passion Fruit can give a farmer between US\$60 000 and US\$100 000 per season for over a period of up to seven years.

What are the common varieties in Zimbabwe?

Yellow Passion

- The yellow granadilla, because of its disease resistance and greater vigour, is now being recommended for use as a rootstock for the purple granadilla.
- It does well in the lower midland and lowland zones and is more vigorous and produces larger fruits of five to seven centimetres in diameter.
- More acidic- used for juice extraction.
- Resistant to Fusarium Wilt and tolerant to Phytophthora Root Rot, Nematodes and Brown Spot
- Used as rootstock for purple passion fruits superior and aromatic flavour and used for fresh market and juice extraction.

Purple passion fruit

- Does well in upper midland to upper highland zones (1,200 — 2,000 metres above sea level)
- Produces purple-colored fruits of four — five centimetres in diameter

What are the suggestions to help grower's select healthy, productive parent vines?

1. Disregard all vines bearing round-shaped fruit as juice recovery from these fruits has been found to be about 10 percent less than that from oval-shaped fruits.
2. Disregard all fruits having orange-coloured rinds as these tend to yield off-flavour fruits with a commercially unacceptable woody taste.
3. Select for flavour, together with other desirable characteristics such as high yield, good quality fruit, disease resistance, etc useful tip for growers: a very good fruit invariably has a strong and pleasant aroma.
4. Having selected, over a number of years, a few selections which fit all or most of the desired characteristics, grow all future plantings from cuttings or seeds from these plants.

What are the climatic Requirements?

- Granadillas prefer moderate temperatures throughout the year.
- They are sensitive to severe frost (especially the purple granadilla).
- In hot areas, they should be planted on cool slopes and in cool areas on the warm northern slopes. The average maximum monthly temperature should not exceed 29 °C and the minimum should not fall below five Degrees Celsius (°C).
- Granadillas prefer a high relative humidity and well-distributed rainfall of not less than 1 200 millimetres per year (irrigation can supplement low rainfall).

What are the soil requirements?

Script for Passion fruit/Granadilla

Deep soil preparation is important because granadilla plants develop shallow root systems in compacted soils. Thorough soil preparation will also improve drainage. This is very important, because granadillas are sensitive to excessively wet soil conditions. It is best to avoid clay soils. A representative sample of proposed orchard must be taken for soil analysis

The sample should be taken at least nine months before planting; this gives the farmer ample time to thoroughly prepare the soil particularly if large quantities of lime are required.

Propagation methods?

The passion fruit maybe propagated from seeds, cuttings or air layers. Latterly, budding and grafting have assumed increasing importance due to the fact that a pest and disease resistant rootstock (yellow passion fruit) has been found for the purple passion fruit. if and when, clonally hybrid cultivars become commercially available, it will become necessary to graft them onto suitable rootstocks in order to maintain trueness-to-type.

What type of Seed?

In Zimbabwe, seedling production is the most widely-used method of propagation and this is still recommended in areas where light frosts occur. Select seeds for all the desirable characteristics as mentioned above but be careful to avoid vines showing symptoms of the 'wood-

iness' virus.

- Scoop out the contents of a gra-

- Dry the seed in the shade and sow it in seedling trays or planting bags filled with a well-prepared soil mixture.
- To enhance germination, the seed together with the pulp can be placed in a plastic container and allowed to ferment for one to three days. It is then thoroughly washed, dried and sown as soon as possible.
- During the warm months germination may take from 14-28 days. Maximum germination occurs after about four to six weeks. Watering must be regular and sufficient, but do not over-water as this encourages the 'damping off' disease.
- Cross-pollination gives rise to hybrid seed production and it has been found that variation in fruit quality and yields from these hybrids is such that an entire planting can be a failure.

What are the Grafting methods?

- Cut about 2,5 centimetres slit into the rootstock vine with a grafting knife and slide the angle of the scion into the slit in the rootstock, pairing the two pieces up in size
- Wrap grafting tape tightly around the union and seal the graft union with grafting compound. The graft union should be at least 45 centimetres above the soil level
- Two techniques of grafting have been used, both with a high degree of success. The first is known as the splice graft and it involves making identical, long, diagonal cuts in both the scion and rootstock material. The two-cut surface are

aged.

What are the spacing and transplanting methods?

- The seedlings should be ready for transplanting about three to six months after sowing the seed.
- The optimum time for transplanting is during August/September.
- The yellow granadilla is more susceptible to cold than the purple granadilla and grafted plants should therefore not be planted in areas where frost occurs.

Plant spacings- 1 to 2 metres is used. The average lifespan of a healthy granadilla plantation is about 3 years. Bearing in mind the effect of viruses and soil-borne diseases, plant spacing of about 1 m could ensure high production over the short term.

Trellising system—Erecting a trellising system is the main initial expense. A sturdy construction is necessary because the trellis has to support a heavy mass. The wooden posts must be solid and resistant to termites

How to train and prune the plants

- The granadilla vines should be trained systematically so that the framework gets a good shape.
- Tie a selected leader of each plant loosely to a stake or train it up a string until it reaches the top wire. Remove all side shoots, but not the leaves.
- The main leader is trained along the wire and the fruiting laterals are trained so that they hang down freely. Cut off all laterals at ground level if they start growing along the ground.

What are the requirements for Fertilizer Applications?

These are only general guidelines and should be supported by soil and leaf analyses.

- The top-dressing fertiliser should be applied in two splits per year.
- Application of 100 grammes NPK (17-17-17/20-20-20) per plant at start of every rainy season.
- This could be at least four times in a year (15 kilogrammes) of well decomposed manure per plant per year is applied before the rains begin.
- Spraying with foliar feed and trace elements every three months is recommended.

What are the Intercropping methods?

- Passion Fruit may be intercropped with vegetables such as Beans, Cabbage and Tomatoes during the first year
- Cucurbits (cucumbers, pumpkin, and squashes) are not recommended due to the woodiness virus and fruit flies. In addition, maize, cowpea,

immediately bound firmly together with grafting tape, care be taken to see that the bud and leaf on the scion are left undam-



granadilla that has been cut through.

A Guide to Proper Herbicide Use: From Selection to Application



Kundai Zvaraya

Herbicides are powerful tools in managing weeds, which can otherwise compete with crops for vital resources such as water, nutrients, and sunlight. To make the most out of herbicides, it's important to follow best practices from selection through to application. This guide expands on key steps and includes examples of herbicides used for specific weed types.

Choosing the Right Herbicide

1. Identify Your Weeds

Correctly identifying the weeds in your field is the first step. Different herbicides target different types of weeds. Common categories include:

Broadleaf Weeds: These include dandelions, thistles, and pigweed. Herbicides like 2,4-D (e.g., 2,4-D Amine) are effective against many broadleaf weeds.

Grassy Weeds: These include couch grass, foxtail, and rapoko grass. For these, herbicides such as metalachlor are used.

Sedges: Nutsedge is a common example. Herbicides like halosulfuron (e.g., SedgeHammer) are specifically designed to control sedges.

2. Consider Your Crop

Different crops have different tolerances to herbicides. Always check that the herbicide you choose is safe for your crop. For example:

Maize: Atrazine is commonly used for weed control in maize but should be applied according to label recommendations to avoid crop damage.

3. Read the Label

The herbicide label provides essential information including the types of weeds it controls, recommended application rates, and safety precautions. For instance:

Glyphosate: The label will specify application rates depending on the weed species and growth stage.

Some labels detail the timing for pre-emergence application to prevent weeds from emerging.

Application of Herbicides

1. Timing is Key

Herbicides need to be applied at the right growth stage of both the weed and the crop:

Pre-emergence Herbicides: Applied before weeds germinate. For example, S Metalachlor is effective when applied before weed seeds begin to grow.

Post-emergence Herbicides: Applied after weeds have emerged. Glyphosate is used post-emergence to kill actively growing weeds.

2. Dosage Matters

Using the correct dosage ensures effectiveness and prevents harm to crops and the environment. Low doses may not bring results, whilst high doses may ruin crops, even selective herbicides when applied in wrong doses may end up ruining the crop.

3. Application Method

Different herbicides require different appli-

cation methods: The right application method should be done.

Spraying: Most herbicides are applied via spraying. Glyphosate is commonly applied as a foliar spray.

Granules: Some pre-emergence herbicides can be applied in granular form and then incorporated into the soil.

Factors Affecting Herbicide Efficiency

Weather Conditions

Weather greatly influences herbicide effectiveness:

Rainfall: Some herbicides need rain or irrigation to activate. Applying during dry conditions can reduce efficacy.

Wind: Avoid applying herbicides on windy days to prevent drift. For instance, applying herbicides on windy days can result in unintended damage to nearby crops.

Soil Conditions

Soil type and moisture levels affect herbicide performance:

Soil Texture: In clay soils, herbicides may bind more strongly and be less available to weeds. Conversely, sandy soils may leach herbicides more quickly. Adjusting dosage and choosing herbicides accordingly can mitigate these issues.

Moisture: Herbicides require proper soil moisture for activation, effectiveness can be compromised if the soil is too dry at application.

Weed Resistance

Weed resistance to herbicides can develop over time:

Rotation of Herbicides: To prevent resistance, use different herbicides with different

modes of action.

Integrated Weed Management: Combine herbicides with cultural practices like crop rotation and mechanical weeding to manage resistance.

Proper Mixing and Equipment

Ensure proper mixing and equipment maintenance:

Mixing: Follow label instructions for mixing ratios. For example, ****glyphosate**** often requires specific dilution rates for effective control.

Equipment: Use clean, calibrated sprayers to ensure even application. Dirty or improperly calibrated equipment can lead to inconsistent herbicide distribution.

****Protective Gear:**** Wear gloves, masks, and protective clothing as recommended.

****Storage:**** Store herbicides in a secure, cool, dry place away from children and animals.

Conclusion

Proper herbicide use involves selecting the right product, applying it at the appropriate time and dosage, and considering environmental and soil factors.

By understanding and managing these aspects, farmers can effectively control weeds and enhance crop production.

Always follow safety guidelines and product labels to ensure the best results and protect both your crops and the environment. Lets cut labour costs this season and use herbicides, when applied correctly they can help increase yield by a significant percentage.

• From Page 15

- sorghum, okra, sweet potatoes and other creepers should be avoided

Pests and disease management?

Fusarium Wilt-When infected with fusarium wilt, the plant will wilt and die. To prevent fusarium wilt, use yellow passion rootstock, grafted at a height greater than 45 centimetres. Use sterile potting media.

Blight-Dark water-soaked lesions appear on the leaves when passion fruits are infected by blight. They later spread to the rest of the plant as infected tissues die. Blight affects both mature plants and young shoots. Blight can be prevented by using proper field hygiene.

Brown spots — attack the leaves and fruits, causing brown rings with dead spots. The infection starts on leaves and can move to the leaf axils and terms. To prevent brown spot disease, thin vines to allow for aeration.

Woodiness Virus-the woodiness virus disease is characterised by distortion of leaves, woodiness of fruits. The plants are stunted, with reduced yields and the vines will die off. To prevent the woodiness virus, sterilise the pruning tools using sodium hypochlorite (Jik bleach) or formaldehyde. Control any organism that might carry the virus and eliminate all weeds.

Pests Affecting the Passion Fruit?

Red Spider Mites- occur on lower leaf surfaces between the veins and cause the leaves to dry. They can be controlled by uprooting the infested plant and keeping the field free from weeds.

Mealybugs- are pinkish oval-shaped station-

ery bugs covered with a waxy thread. Mealybugs can be controlled by pruning and destroying infested parts of the plant

Fruit flies- lay eggs on the fruit, causing sunken brown spots, as the eggs hatch into white maggots and they get into inside the fruit.

Aphids-Green in colour, aphids sick sap from tissues. They transmit viruses such as the woodiness virus. Aphids are usually controlled by natural enemies, such as the ladybird and using broad-spectrum pesticides.

Thrips- When thrips attach passion fruits, the affected parts shrivel, flowers and young fruits fall prematurely. There are lesions on fruits and distortion of leaves and young shoots.

Nematode- live the soil, causing the formation of knots or galls on the roots. This makes the leaves turn yellow and stunted growth. The affected plants eventually die. To prevent nematodes, rotate with cassava, cereals, sweet potatoes cabbage and kale. Use yellow passion rootstock for grafting. Use clean field hygiene and use clean planting materials.

Harvesting and storage methods?

The harvesting peak seasons for passion fruits are from July to August and December to January.

- Cut the stalk short to avoid damaging other fruits
- If using pesticides, follow the pre-harvest interval of the pesticides used

Script for Passion fruit/Granadilla

- Any fallen fruit should be collected daily, in the morning to avoid being scorched in the sun
- Harvest into plastic buckets preferably early in the morning, between 9 am and 11 am as soon as the fruits dry of any outer moisture.
- Place the fruit in the buckets gently to avoid bruising them
- Wet fruits should be dried as soon as possible using air drying in a shaded place
- Fruit for the fresh market is picked 2 to 3 times a week in summer when fully developed and with a light purple colour.
- Fruit should not have a deep purple colour when harvested, because it will arrive at the market in a shrivelled condition and will not have a good market value. A wax treatment protects the fruit from drying out and could delay the shrivelling process.

Storage

- Place the fruits in clean plastic wooden containers to avoid bruising. It is advisable to maintain cold chain delivery to the collection centre/ packhouse
- When sorting at the packhouse, all immature, diseased, damaged and over-mature fruits are removed.
- A clean damp cloth should be used to gently clean the dirt on the fruits. Do this gently, avoiding rubbing, which may dam-

age the skin.

- Passion Fruits are graded according to size, colour, and appearance
- Passion fruits that are to be exported or taken to distant markets are cooled immediately to between five degrees Celsius and seven degrees Celsius.
- Fibreboard or plastic trays, single or double-layered are used during packing. They weigh between two and five kilogrammes, with 46 to 48 fruits per box.
- Fresh fruit should not be stored for more than 24 hours. If kept under the relative humidity of 85 to 90 percent, and a temperature of five and seven degrees Celsius, passion fruits can last for three to five weeks.

• From the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development

