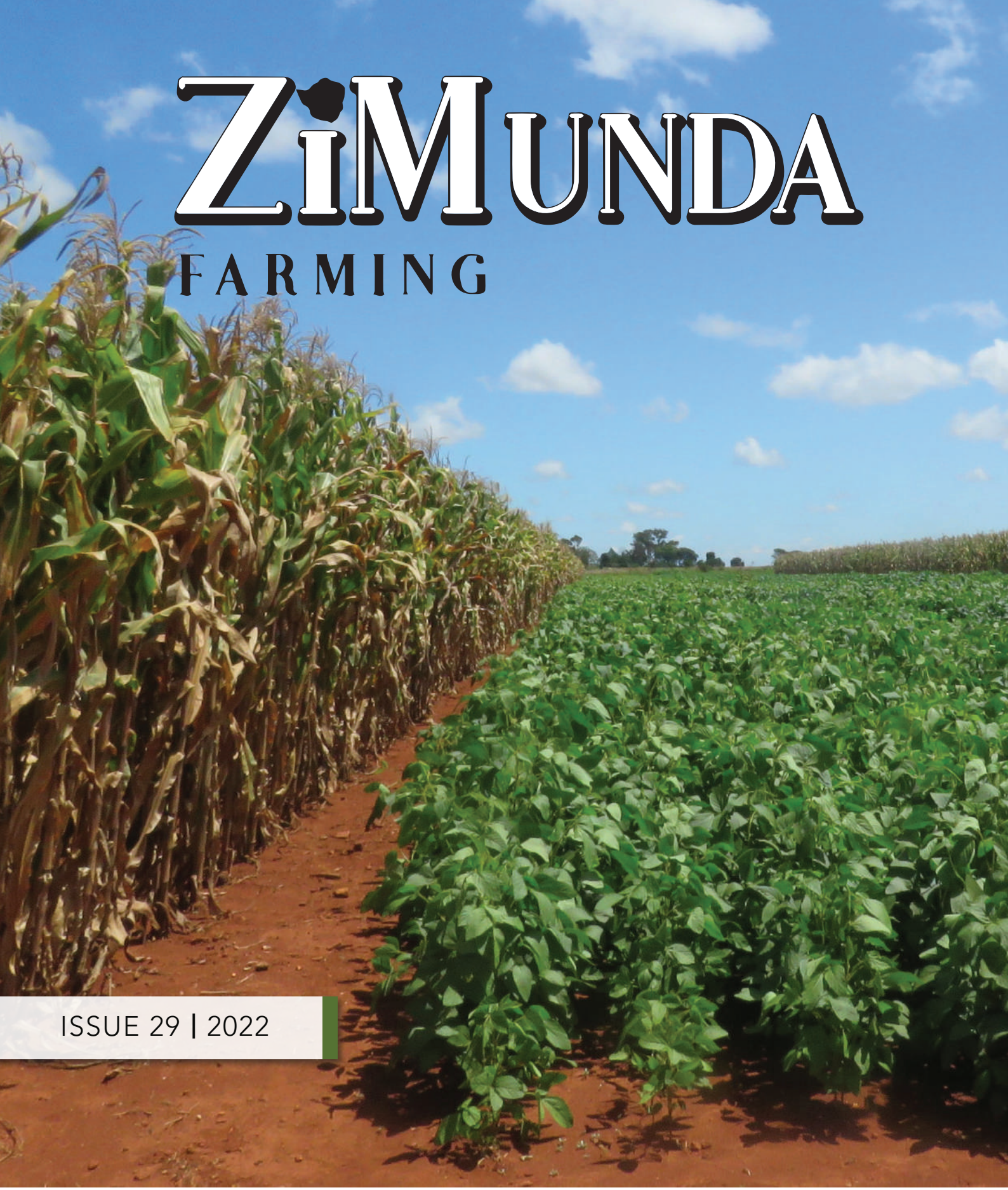
ZiMUNDA FARMING



ISSUE 29 | 2022

AGRONOMY

ART Farm Open Field Day

HORTICULTURE

Post-Harvest Technologies

LIVESTOCK

Improved Efficiency in a Beef Herd

FREE EMAIL SUBSCRIPTIONS: WWW.ZIMUNDA.CO.ZW
WHATSAPP +263 772 443 638 | ADVERTISING +263 772 639 304

Zindu

CONTENTS

OUR TEAM

PUBLISHER
Mike Garden
mikeg@softrite.co.zw
Cell: +263 772 209 162

EDITOR
Vimbai Ruvengo
editor@zimunda.co.zw
Tel: 024 278 2720
Cell: +263 782 117 840

ADVERTISING
Rudo Nhamoinesu
pr@softrite.co.zw
Tel: +263 772 639 304

DESIGN & LAYOUT
Tamuka Nyoni
content@nzira.co.zw
Cell: +263 775 363 706

OFFICES
37 Victoria Drive, Newlands, Harare

zimunda farming

DISCLAIMER

The aim of ZiMunda Farming is to provide correct and relevant farming information to farmers. Every effort is made to check the content of every article, the directors will thus not be held responsible for errors or omissions in such articles. Farmers should thus consult with the references and resource people before making any financial or production decisions.

COVER

Trial plots at ART Farm, Pomona

From the Editor

Driving on the dusty farm roads has become a familiar joy for the ZiMunda team, as we journey across the country to the different agricultural landscapes discovering and sharing with you the beauty of farming based on the magazine's founding principle of ***Showcasing Agriculture in Zimbabwe.***

The Zimbabwean agricultural sector in all its multifaceted diversity is steadily growing through a wide array of efforts by farmers, academia, companies, organisations and the government. It is a great pleasure that ZiMunda has to marry all the different perspectives into a constructive and informative magazine for you.

Building onto the publisher's passion of sharing knowledge, disseminating information and community engagement, the ZiMunda Farming team works together as a single unit in order to create a broad base of knowledge of farming methods, skills, and practices and provide access to avail this knowledge through our regular articles which identify ways to improve farming systems. Given the complexity and the scale of the task in sharing relevant and timely information to farmers, we at **Bindu Media** are looking forward to continuing to broaden our partnerships through multi-stakeholder engagement as we embark on a journey of resourcing for and sharing information across and beyond Zimbabwe's farming community.

Not only has the magazine taken a new look into a digital newsletter since 2020, we are proud to have taken a step further into coming up with our first comprehensive farmers guide – the ***ZiMunda Farming Year Book.*** The developments at ZiMunda Farming aim to strengthen the magazine's position in the dynamic and challenging field of agriculture.

"There is more than just joy but a sense of meaning when the work we have done resonates with a larger audience, some of whom are gracious enough to let us know how an article touched or helped their farming enterprise".

Agronomic research has always been my first love however, after a few years of being a Farm Journalist I have grown to love it just as much. Experiences, exposure, and training has made me love what I do and do what I love.

Yours in Farming,

Vimbai

Get the ZiMunda Farming Yearbook 2022!

These pages were just a sample of the new ZiMunda Farming Yearbook 2022!

The full yearbook is a compilation of all the articles we had in 2021. It is packed with information from expert advice in different agricultural disciplines, farmers insights and articles showcasing farms and the local agricultural industry.

Come and grab a copy at 37 Victoria Drive, Newlands, Harare. You can also call **0772 354 177** or email **admin@ndeipi.co.zw** to book your ZiMunda Year Book as we can get it delivered to you.

ZiMUNDA FARMING Bindu

Technologies And Practices to Reduce Post-Harvest Losses

Tanaka Calvin Chaza, Farm Hut

The choice of a technology package depends on circumstances, such as the scale of production, crop type, prevailing climatic conditions, the farmers' affordability and their willingness to pay (which are linked to social, cultural, and economic implications of adoption). In Zimbabwe, smallholder farmers use digital technologies such as FarmHut to meet timeous market demands and avoid market congestions. Such timeous market information enables smallholder farmers to avoid post-harvest losses due to evidence-based decision-making capacities on their farming activities.

Postharvest technologies play a role in stabilising food supply and seasonal prices. Transient hunger in most parts of Africa has been attributed to seasonal production, and lack of efficient food storage and distribution systems, especially of staple crops. In spite of significant advances in food storage methods, smallholder farmers in most parts of Africa still rely on indigenous vessels such as mud silos, barns, cribs, and drums for the storage of grain, fodder, and seed storage. Such storage vessels are simple to construct and inexpensive to maintain but are unable to protect the produce from biological, physical, and environmental hazards for a prolonged period of time.

Various protocols are standardised and available for adoption to get the best result, which will give economic benefits. Similarly, proper storage conditions, with suitable temperature and humidity are needed to lengthen the storage life and maintain quality once the crop has been cooled to the optimum storage temperature. Post-harvest technologies and practices include;

Zero Energy Cool Chamber - This is an on-farm storage chamber, for fresh fruits, vegetables, and flowers to extend their marketability. The spoilage of fruits and vegetables can be controlled by reducing the storage temperature. Refrigerated cool storage is not only energy-intensive and expensive but also involves large initial capital investment. There is, however, a practical, low-cost alternative for on-farm fruit and vegetable storage that employs the cooling power of evaporation. Zero energy cool chambers stay 10- 15° C cooler than the outside temperature and maintain about 90 percent relative humidity. And they are easy to build out of locally available materials, such as brick, sand, bamboo, straw, and

Raspberry cooling storage room installed by Coldex.

gunny bags.

Refrigerated Transport - Refrigerated transport is a method of transporting shipments with specially designed temperature-controlled trucks. The transporting trucks have a built-in refrigeration system that cools the shipments at a regulated temperature all through the process of transportation. These kinds of trucks ensure coolness and maintain the quality of the products being transported.

Solar Tunnel Dryer - It consists of a tunnel-type semi-cylindrical drying chamber, trolleys, and trays are provided to hold one tonne and two tonnes of raw material. The reduction in drying time compared to (60 %) compared to open sun drying as a result of higher inside temperature of about 22 - 25°C. Solar dryers capture the sun's heat to dry fruit, vegetables, and fish not only preserving them but also making them more robust to transport and sell.

Waxing- It is used as a protective coating for fruits and vegetables and helps in reduction in a loss in moisture and rate of respiration and ultimately results in prolonged storage life. It helps the farmers to get better returns for their produce.

Pre-packaging- This technology controls the rate of transpiration and respiration and hence keeps the commodity in fresh condition both at ambient and low temperatures. It can able to bring revolutionary progress in our trade practice and also benefit the consumer and the producer because of its low cost and ready availability.

Modified atmosphere packaging (MAP) - These packagings modify the atmosphere composition inside the package by respiration. This technology is successful to extend the life of (Cavendish banana, carrots capsicum, green chili tomatoes by 15, 14, 13, 8, and 15 days as against 5, 7, 8, and 7 days in control respectively, under ambient cond Storage of Papaya can be extended for 4 weeks when at 10 -12 °C under Modified Atmosphere (MA) condition by wrapping them in Low-Density Polyethylene (LDPE) bag. Using this technique, the fruit can be transported to different markets in refrigerated sea containers with a Sea Temperature at 10-12 °C.

Irradiation - It is the newer technologies that can be gainfully employed during storage to reduce post-harvest losses and extend the storage life of fruits and vegetables. When fruits and vegetables are exposed to ionizing radiation (such as gamma-rays) at optimum dosage delays ripening minimises insect infestation, retards microbial spoilage, control sprouting, and rotting of onion, garlic, and potato during storage. It is also used as a disinfection treatment and controls fruit fly on citrus, mango seed weevil, and papaya fruit fly.

Edible coatings - These are continuous matrices prepared from edible materials such as proteins, polysaccharides, and lipids. They can be used as film wraps and when consumed with the food, become an ingredient of the food. They not only minimise the post-harvest losses but also need energy-intensive operations and controlled atmosphere storage. They can control the migration of gases, moisture, oil, fat, and solutes, as well as retain volatile flavouring compounds. An edible coating improves structural integrity and mechanical handling and carries products so that they help to maintain quality and inhibit microbial growth causing deterioration of the product.

Solar powered packhouse for blueberries at Nhimbe Fresh, Marondera.

OTECH

LEADING IRRIGATION

DripTech

WORKINGTON | GLENARA | MSASA | HARARE DRIVE
2ND STREET | MUTARE | SEKE

0867 700 7000

www.driptech.co.zw

Open days Back on Track

By Rob Jarvis

On Thursday 24th March 2022 the agricultural sector of Zimbabwe firmly put the Corona virus on the backburner with an Open day organised by the Agricultural Research Trust at their magnificent facility right on the edge of Harare City at Pomona.

The occasion was graced by the Deputy Minister of Lands , Agriculture, Fisheries, Water and Rural Resettlement, the Honourable V. Haritatos and by the Permanent Secretary to the same Ministry, Dr. John Basera. Prior to undertaking the field tour, both the Deputy Minister and the Permanent Secretary took the opportunity to brief the farmers and the service personnel present on the plans for agriculture going forward to meet Government's development goals.

Over three hundred people registered at the event and these included farmers, trade, service industries and seed house personnel. They were treated to the sight of magnificent summer crops, ranging from soya beans and maize, to a whole range of small grains, legumes and almost every imaginable kind of vegetable. The tour included stops at seed house demonstrations, fertiliser trials comparing standard synthetic options compared with biological alternatives, weed and pest control comparisons. Highlight for many farmers was to see the A.R.T. research personnel's eight blocks of land which have been allocated to regenerative agriculture research. A.R.T. has red clay loam soils that have been well-husbanded for the past 40 years and they are in relatively good heart with little compaction, quite high organic matter percentages and reasonable levels of inherent fertility. However the research has shown that good economic results had been obtained from the grazing of beef cattle on cover crops grown in the winter months when compared to the growing of winter wheat. The trial is ongoing and as new findings come to the fore, so will the treatments be adjusted to take advantage of potential quick gains and maximise profitability.

At the end of the day the farmers present and the agriculture industry personnel, led by the Permanent Secretary and the Deputy Minister (top right) from their high viewpoint could see that the Agricultural Research Trust is running extremely well, providing an essential service by independently testing new cultivars of almost every kind of crop

grown in Zimbabwe.
There was a huge range of industry stalls set up in the gardens around the A.R.T. Auditorium and at each stop in the field the personnel of companies undertaking contract research with A.R.T. had their colourful banners and information billboards up for the farmers to digest, with fiery speakers getting their company messages across.
One of the most popular stops on the tour was a smallholder demonstration centre pivot that is aimed at a communal or resettlement farmer with just family resources to hand. The inventor of this innovative system, Berens Stockil has designed some amazing tools and equipment that ensure target crops are planted, grown and cultivated to precise measurements to maximise the output. The system is designed to be powered by solar panels and these can be engineered to draw water up from boreholes, irrigate the circles and even supply surplus for domestic consumption at the rural homesteads. (See below right).
A feature of the Open Day was the opportunity for the farming community and participants in the event to interact with both the Deputy Minister and the Permanent Secretary of the Ministry that has overall jurisdiction on land and agriculture generally. Seen below in the foreground is former A.R.T. Farm manager Paradzai Gombera with the Permanent Secretary Dr. John Basera, when being shown the excellent field demonstrations laid on by Klein Karoo, one of A.R.T.'s key partners.

KLEIN KAROO K2 SEED MARKETING

ZIMBABWE

Wheat - Peregrine

1. Variety - Peregrine
2. Maturity- very early 113days.
3. Very good standability, about 90cm height.
4. Very good disease package
5. High yielding - 7-9t/ha.
6. Protein content -11.2%7. Adaptibility - both high and low potential areas

Onion - Capricio

For both fresh and dry market

TYPE	Open pollinated	
MATURITY TYPE	Early short day	
MATURITY IN DAYS	190 - 200	
PLANT CHARACTERISTICS	Bulb: Shape	Deep flat round
	Firmness	Moderate
	Exterior colour	Medium straw
	Interior colour	Cream white

DISEASE TOLERANCE *Pyrenochaeta terrestris*

Onion - Capricio | KKS1402

BOTANICAL NAME	*Allium cepa* L.	
TYPE	Open pollinated	
MATURITY TYPE	Early short day	
MATURITY IN DAYS	190 - 200	
PLANT CHARACTERISTICS	Bulb: Shape	Deep flat round
	Firmness	Moderate
	Exterior colour	Medium straw
	Interior colour	Cream white

DISEASE TOLERANCE *Pyrenochaeta terrestris*

Interlink Advertising & Print 0242 773006/7

KLEIN KAROO SEED MARKETING ZIMBABWE (Pvt) Ltd

640 St. Gerards Way, Greystone Park, Harare | +263 8677 009163-4 | sales@k2.co.zw

+263 778 972 927 / 719 195 196 | Klein Karoo Seed Marketing Zimbabwe

FIELD CROPS

Swift Mutakuri - The Great Bale Transporters

BY SWIFT TRANSPORT

Swift Transport will be providing producers with more transport capacity when it includes its new trailers for the first time this tobacco season. The 16 Tautliner trailers imported from South Africa, have a massive loading capacity of more than 400 bales each. The trailers are perfectly designed to ensure quick loading and off-loading saving valuable time.

The increase in demand for Swift to ***transport bales*** was the driving force in the decision to increase the trailer fleet.

With the tobacco receiving floors opening in different tobacco growing regions in 2021 due to the COVID-19 pandemic, the need for safe, reliable, and secure tobacco transportation between these regional floors and the Harare auction floors, increased exponentially.

Rob Kuipers, CEO of Unifreight; *"As we enter a ninth tobacco season, we do so with the knowledge that we are prepared, not only from the point of view of increased capacity with our new equipment recently acquired but with the working knowledge and logistics developed from the previous eight seasons which we have had the privilege of being a part of, is constantly improving. Each year we take on board the lessons learned and move to perfect our transport offering to ensure it is the best, safest and most reliable transport service that any tobacco producer can use."*

The move to a more ***streamlined line-haul transport service*** for the large commercial growers did not limit the Swift operation, it continued to move communal tobacco bales delivered to its depots and satellite depots, safely to the Harare sales floors.

The Swift Mutakuri service has a dedicated team that works throughout the season ensuring that the transport and logistics for the movement of tobacco bales is expertly carried out from collection point to final delivery. Using Swift Mutakuri there are no delays and bales arrive at the auction floor on time, within 24 hours of collection.

For further information please contact: Kerne Mackie at kmackie@unifreight.co.zw

LIVESTOCK

Nutrition Economics

Establishing Improved Pastures to Reduce Cost of Feed in Livestock Farming

By Europe Africa Seed Initiative

Livestock production in Zimbabwe, regardless of size of the enterprise, is affected by ever increasing cost of feed. Typically feed represents 40-60% of the total costs with a large proportion being attributed to winter supplements. This is because during dry winter season natural rangelands will have poor quality forages that do not meet minimum nutrient requirements in quantity and quality.

The Answer

Establishing improved pastures will help in making on-farm nutrient balanced feed consequently reducing cost of buying commercial feed. Improved pasture extends grazing season and harvesting period for feed preservation or storage. Livestock farmers are encouraged to establish winter and summer improved pastures to create an on-farm all year-round grazing and harvesting period. In cases where farmers do not have irrigation to support pasture crop during winter, they can harvest during summer while the pasture is under natural rains, and preserve either as hay or silage and use it to supplement throughout dry periods.

How To

There are a variety of improved pasture crops that a farmer can choose from and establish to help in providing fresh and quality feed for their livestock. These include winter and summer grasses (Rhodes grass, Kikuyu, Rye grass, Brachiaria, Smutsfinger, Buffalo grass, Star grass and Panicum), winter oats, legumes (Lucerne, Dolichos, Velvet bean, Sunhemp and Clovers), Forage Sorghums and Millets.

Key questions to think about before picking a pasture include: Herd size? Irrigation availability? Type of enterprise? Available land for pasture establishment? Soil type? Forage resources? And Available Budget?

It is highly encouraged to check with your nearest Easi Seeds Pasture Agronomist to help in selecting a suitable pasture for your area and business.
For more information farmers can visit our website at www.easiseeds.com or contact the easiseeds pasture and livestock specialist on +263 71 6510 887 or get in touch with the sales office on +263 71 919 3561.
Farmers, winter is upon us, check with Easi Seeds for improved pasture options for your enterprise.

Improving Production Efficiency in a Beef Herd.

By James Kabinda, Animal Production Specialist.

The on-going thrust or any beef cattle business is increased production efficiency, which will then translate to improved sustainable profit. Beef cattle production efficiency is often a debatable issue, with the debate hedging on the comparison of breeds, bulls' inspection points, cows, and the cattle management systems.
Since the beef production efficiency determines the profitability of the farming enterprise, there are a number ways of improving beef yield which are discussed below;

IMPROVED FEED MANAGEMENT

The cattle should be fed closer to their individual nutritional requirements. Overfeeding or underfeeding reduces efficiency of production. Improving feed management also includes reducing feed wastage during harvesting, storage or feeding and reduces costs. Poorly designed and maintained feed troughs often result in significant wastages of feed. On pasture-based farms, feed wastage is controlled by ensuring efficient herd stocking rates. Proper feed storage is vital in improving feed management (ZiMunda Farming issue 29 – Making and storing silage).

Healthy cattle enjoying winter lick.

Use of commercially available feeds in rotation is critical to enhance production efficiency. **Summer licks** which are phosphate based are required during the rains when the farmer has confidence that grazing is adequate. Phosphorous plays an important role in digestion and utilisation of forage but is deficient in most Zimbabwean soils and the veld grasses. Grazing becomes inadequate without phosphorous supplementation no matter how good the pasture may look like.

After the rains, nitrogen and energy becomes limited. At this stage a balance between grazing and winter licks will be adequate. As veld deteriorates, veld supplementation can be done using beef survival meal plus winter licks or small amounts of all-in feed to grazing animals. ***The catch here is to make sure your animals get at least 3% its body weight per day on dry matter (DM) basis. This translates to 10kg DM for a 300kg animal.*** Where feed with high moisture is used, the farmer should account for the moisture that is for silage at 50% moisture, feed at 6% its body weight per day.

OPTIMISE HERD STRUCTURE

Herd feed efficiency can be improved by optimising herd structure and reproduction management. A larger number of older replacement heifers and more cows in late lactation reduces herd efficiency. Culling is a management tool that can be used to manage low productive animals. Improving herd production efficiency also entails reducing the culling rate.

GENETIC SELECTION AND IMPROVED BREEDING MANAGEMENT

Improving herd production efficiency can be through genetic selection. Genetic progress in beef cattle production is dependent on sire selection. Genetic improvement can translate into greater productivity across the beef herd. Information presented by Dr Roger Hunsley at the ZHB 2013 Beef School held at ART farm stated that ***"there is great potential for the beef cattle farmer by selecting the right genetics, to improve productivity under the prevailing climatic conditions".*** Selection can be done for traits such as birth weight, yearling weight, weaning weight,

beef to feed ratio, scrotal circumference (has high heritability of 0.67 and is linked to fertility), adaptability to local climate and carcass yield.

Uncontrolled breeding can lead to high levels of inbreeding in the herd. Increased levels of inbreeding within the beef herd will lower production efficiency leading to reduced profit. On the other hand, crossbreeding will improve production efficiency. Crossbreeding advantages are two-fold; hybrid vigour and breed complementarity. Hybrid vigour or heterosis refers to the improvement in performance of the cross-bred animals relative to the average of their purebred parents. Breed complementarity is the improvement in performance of the crossbred animals, resulting from combination of traits enhancing each other or forming a balance relative to the average of their purebred parents (refer to ZiMunda Farming issue 2 and 25).

Some beef farmers breed their heifers at a specific age, usually around 2 years. It is top notch breeding management to breed heifers at attainment of a specific weight (67% of mature weight) rather than age. Early breeding (around 1.5 years of age) increases reproductive efficiency of the heifer but is breed dependent. And this can be attained through improved nutrition management and/or use of improved beef breeds. However, a pregnancy at such an early age can retard growth and permanently damage future performance.

IMPROVED HERD HEALTH MANAGEMENT

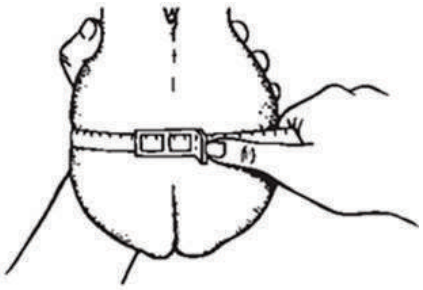
Diseases cause devastating effects on herd production efficiency. Disease can lead to deaths, reduced reproductive performance and feed utilisation. As such improved herd health management is a tool to improve efficiency. Beef producers should consult with livestock experts on designing and planning annual health management practices within their different geographical locations. Such practices include regular vaccination, dosing, dipping, disease screening and hoof trimming. Prevention is cheaper than cure.

EXPLOITING REPRODUCTIVE TECHNOLOGIES

Reproductive technologies (RTs) such as artificial insemination (AI) offer opportunities for improved efficiency (refer to ZiMunda Farming issue 3). Adopting RTs has its ups and downs. Looking on the positive side of RTs, the farmer is able to plan management easily by maintaining a homogeneous herd, through heat synchronisation and AI. Other RTs include embryo flushing and sexing. Embryo flushing can improve cow productivity by more than 10-fold, whereby multiple embryos from a single genetically superior cow are produced then transferred to surrogate cows. Males are fleshier and better feed converters than females. With sexing, the farmer has the chance to maintain a large population of male animals (through use of sexed semen or embryos) to improve overall herd beef to feed ratio.

HERD EVALUATION

It is important to carry out a Bull Soundness Evaluation (BSE) to improve herd reproductive efficiency. BSE is done for bull fertility assessment and involves; semen evaluation, scrotal circumference measurements, libido



A Sound Mashona Bull (Carmen Stubbs)

estimates and clinical diagnosis of reproductive disorders. Scrotal circumference (SC) is linked to bull fertility, with high circumferences representing high fertility and vice versa. A score of 4 for SC means high bull fertility. SC is however breed and age dependent. Bull reproductive disorders such as cryptorchidism (failure of the testicles to descend into the scrotum), hypoplastic testicles (failure of testicles to develop) and persistent frenulum (attachment of penis to prepuce which prevents protrusion during mating) can lower herd reproductive efficiency. All breeding stock should be condition scored prior to mating season. Body condition score target of 2.5 – 3 at breeding is vital for increasing conception rate and conversely reproductive efficiency. Records on performance can also help in herd evaluation.

In summary, good feeding management can be effective in order to improve production efficiency of the beef herd. In addition, this should include genetic selection, optimising herd structure, exploiting reproductive technologies, health care and herd evaluation as part of good management.

James Kabinda is an Animal Production Specialists with a degree in Animal Production and Technology from Chinhoyi University of Technology. He can be contacted on 0774225873, Email: jameskabinda@gmail.com

Let the experts do the feeding

Don't make a decision before you visit the Ultimate stock feed

Running a livestock business involves a lot of crucial activities. Amongst them is ensuring that the animals get the necessary nutrients from their feed. Let us take care of the nutrition of your animals (ensuring you produce the highest grade beef) while you focus on the rest!

FEEDMIX
The ultimate stock feed

Scan here

Head Office & Factory
Nº 524, Mutare Road
Cleveland, Msasa
Harare

Phone numbers: Land line - 086 770 06144
Sales cell number: 0772 311 525; 0783 065 517
Technical Help Line cell: 0771 681 344
feedmix pvt ltd www.feedmix.co.zw
email: sales01@feedmix.co.zw ; techsales@feedmix.co.zw

Controlling Worms for Better Returns

By Coopers Animal Health Zimbabwe

Deworming is very important routine procedure in beef and dairy cattle to control internal parasites. Cattle are not only threatened by outside pests like ticks, flies and other insects but also internal parasites like lungworms roundworms and flukes.

Cattle usually get infected with worms from the pastures they graze in. Larvae from worms live and thrive in the pastures and infect cattle when they ingest this grass. The grass must be wet from either rain or dew, and the soil temperature must be warm for the larvae to reach the grass blades.

Parasites can lead to reduced performance in cattle. Losses can result from;

- depressed feed intake and conversion,
- lower average daily gain or milk production and
- lower reproductive performance.

They have also been seen to reduce immunity and weight and result in the appearance of conditions like anaemia.

It is crucial to detect the signs of infection by these parasites to prevent any major losses to the herd. An effective tool to early detection is monitoring the worm load in cattle by doing faecal analyses.

Strategic De-Worming Programs

Timing is critical for strategic de-worming programs.

1. Liver fluke infestations start to peak around May across and deworming with broad spectrum de-wormers such as Systamex Plus Fluke®, Nilzan Drench®, Nilzan Bolus® and Bimectin Plus® significantly reduce infestation rates minimizing any losses in production.

In some farms with an acute liver fluke problem caused by the migration of large numbers of immature flukes dewormers such as Fluxacur® are recommended as many dewormers are not effective against immature flukes.

Acute liver fluke can be detected as anaemia, distended painful abdomen and acute death.

2. Roundworms and tapeworms usually start increasing around November and they can be controlled by deworming using Systamex® liquid, Bimectin® or Systamex Plus Fluke®, Nilzan® and Bimectin Plus® where cattle are drinking dam water. Adult cattle are generally immune to infestations with tapeworm; however, it has far reached effects in calves before weaning.

On farms with high worm burdens or in high rainfall years another round of deworming may also be done between January and February.

Nursing Calves

Age of the animal may impact parasite loads. Older cows are usually not as susceptible to worm infections as they gradually develop immunity. Nursing calves on the other hand are at high risk of internal worms and it is vital to deworm them at the appropriate time. Tapeworms are mainly a problem in suckling calves and are presented as,

- Pot bellies
- Weight loss (stunted growth), may be evident in adulthood
- Tapeworms may be visible in dung

A healthy nursing calf at Paula's stud

Deworming in early stages of infection has been seen to result in an improvement in weaning weights by 10-20kg. It is best to deworm nursing calves with Systamex Plus® at three months of age and at 6 months or weaning.

Following a set deworming program has the following benefits:

- It increases milk production
- It increases weight gains and growth rates
- Allows farmers to attain higher weaning weights
- Increases conception rates in breeding cows and heifers
- Results in improved resistance to diseases

Please consult with the Coopers Technical team or local veterinarians to set-up a deworming program that fits your production and management goals.

Images provided by Coopers Zimbabwe and Sharai Dube.

Pig Feeding

By Lucy Towers, Farm Hut

Good feed is necessary for growth, body maintenance, and the production of meat and milk. It is always best to use locally available feeds that are less expensive but can be nutritionally complete when properly prepared. In fact, in a small farm set up, pigs can be fed well using only kitchen scraps from a family's household. The nutritional needs of pigs can be divided into six categories or classes. These are water, carbohydrates, fats, proteins, vitamins, and minerals.

FEED FORMULATIONS

1.Creep Feed
This is the baby piglets' first and most important dry food. It contains 20% protein that is highly fortified with milk by-products and is available in small, chewable, highly palatable pellets for easy digestion. A combination of protein source, milk replacer, vitamins, amino acids, and rich feed ingredients makes this complete feed the ideal start for young healthy piglets. Feed ingredients include corn, soya bean meal, barley, wheat bran, vegetable protein, oilseeds extracts, and fatty acids, feed phosphate, pig vitamins, and trace minerals.

Creep feed (about 20g per piglet per day) or a good homemade mixture with fine rice bran, broken rice, and milled maize grains. Clean drinking water must always be available. Feeds should meet the animal's needs for maintenance, growth, and reproduction. Good pig feed contains sufficient energy, protein, minerals, and vitamins. Rice bran, broken rice, maize, soya beans, cassava, vegetables, and distillers' residues are often used in pig feed.

2.Traditional Feed Processing
Distillery waste is much appreciated in traditional pig husbandry, especially for pigs. It is advisable, however, not to give this high-valued feed to pregnant and lactating sows or to piglets and weaners, simply because of the alcohol content in the waste. Leucaena and Acacia are traditional, locally available tree crops, and the leaves are rich in protein. After drying, they can be mixed and fed to pigs with other feeds. The different feeds are mixed and boiled to make pig feed more palatable. There are 2 types of traditional processing:

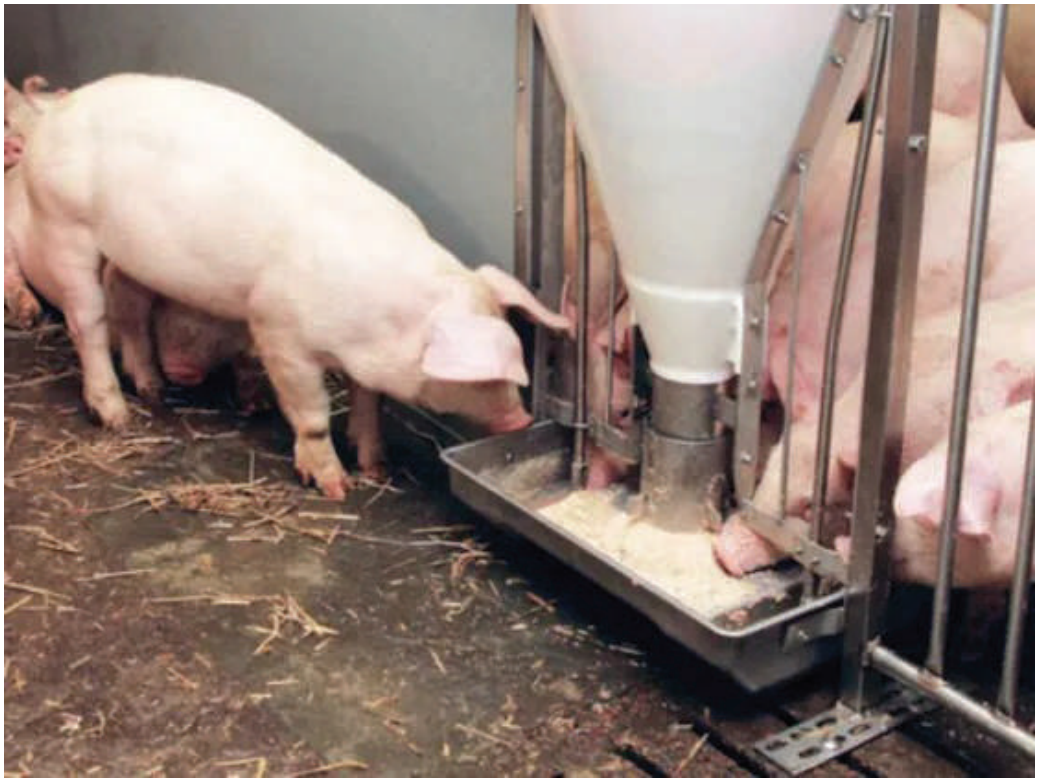
- Mixing all the different feeds together (rice bran, broken rice, crushed maize and soya, dried legume leaves, etc.) in proportion and giving it directly to the pigs.

- Cooking the different raw materials together to improve digestibility, and to break down toxins from some feeds such as raw cola-cassia, banana stem, maize and soya grains, beans, kitchen waste, forage crops, and similar.

3.Feeding Alcohol Distilling Residues
Local alcohol can be made from millet, rice, maize, sweet potato, bananas, and similar. Most popular for pig feeding is distillery wastes from millet. It should be mixed with other feeds such as rice bran and broken rice/maize. Distillers' residues can be fed to fattening pigs, but not to pregnant or lactating sows. Yet, these animals require a high quality of feed and therefore distillery waste needs to be replaced by other high-quality feed such as commercial feeds. Distillers' residues can be fed to fattening pigs, but not to pregnant or lactating sows. These animals require highly nutritional quality of feed; therefore, the distillery waste needs to be replaced by other high-quality feed like commercial feeds.

DAILY FEED REQUIREMENTS

Dry/pregnant Sows and Gilts: Dry sows and gilts require 2.5kg a day of sow and weaner meal. Give an extra 1kg/day one week before serving gilts and sows and one week after service. Give lactating sows 2.5 kg a day of sow and weaner meal for maintenance and 0.25 kg a day extra for each piglet being suckled.



Boars: Give boars 2.0 kg a day. If the boar is regularly used increase this to 2.5 kg.
Piglets: Give creep pellets 0.5 - 1.0 kg a day from day 7 up to weaning time (21 days) per piglet. The feed should be mixed with sow and weaner meal the last one week before weaning.

Feeding of Growing and Finishing pigs - Pigs weaned at 3 - 5 weeks of 11 - 13 kg body weight should continue being fed on the starter diet until they reach 18 kg live weight. Pigs weaned at 7 weeks or older may be switched gradually to sow and weaner diet. For growing or finishing pigs all ration changes should be made gradually. If this is not possible the feeding level of the new diet should be low until the pigs become accustomed to it. Where post-weaning scours are a major problem, restricted feeding during the first week after weaning may reduce the incidents of scours. For treatment in case of an outbreak of scouring, medication through drinking water is preferable since sick pigs go off feed.

NB: When feeding animals any sudden changes can lead to loss of production. Thus, feed changes should be as gradual as possible.

FEEDER TROUGH SIZE AND TIMES

The feeding trough should be firmly anchored to the floor to prevent overturning and wasting of feed. Pigs will eat more fresh clean feed than feed that is contaminated, stale, or mouldy. To ensure proper intake of nutrition clean feed troughs daily. Sufficient feeder space is necessary so that each pig can eat what it wishes every day. On many farms feed waste is 15% or more, but it should be avoided as much as possible. Pigs must also be fed on time since it makes them familiar with the feeding regime. Pigs need to be fed according to their sizes and ages

DRINKERS

The feeding trough can also be used to supply water. At large farms, automatic drinkers are used these are called bowls or nipples. All pigs need sufficient clean drinking water.

- A pregnant sow requires 10 - 12 litres of water per day.
- A lactating sow requires 20 – 30 litres of water per day.
- A growing pig requires 6 - 8 litres of water per day.
- A boar requires 12 - 15 litres of water per day.

By not providing enough water for your pigs you will reduce their daily feed intake, therefore, ample clean water must be available for your pigs to drink at all times.

What can you feed your pig?
• Commercially prepared swine rations from grain, fruit, and vegetable from markets - Commercial Feed.
• Vegetable, fruit, or bread scraps that have been not in contact with animal products or by-products if they are properly cooked.
• Restaurant leftovers, food transporter, and disposers of food waste products if they are properly cooked.
• Forest products including wild vegetables, wild bananas, wild cola – cassia, yam, forage grasses, etc. If they are properly cooked.
• Alcohol distilling residues: local alcohol can be made from millet, rice, maize, sweet potato, banana, etc. If they are properly cooked.

What you should not feed to your pig?
• Any meat products: includes pies, sausage rolls, bacon and cheese rolls, pizza, salami, and other delicatessen meats and table scraps without proper cooking and screening.
• Any carcass or part of a carcass of any mammal or bird (raw and uncooked). This includes any meat blood, offal, hide, or feathers. Pigs that feed on carcasses are also at risk of contracting diseases that are contagious to humans.
• Any fish products and bones.
• The excreta (droppings) of any mammal or bird.
• Any substance that has come into contact with a prohibited substance via collection, storage, or transport in a contaminated container, such as meat trays, takes away food containers.
• Household, commercial or industrial waste, which includes restaurant waste that has not been properly cooked and screened.

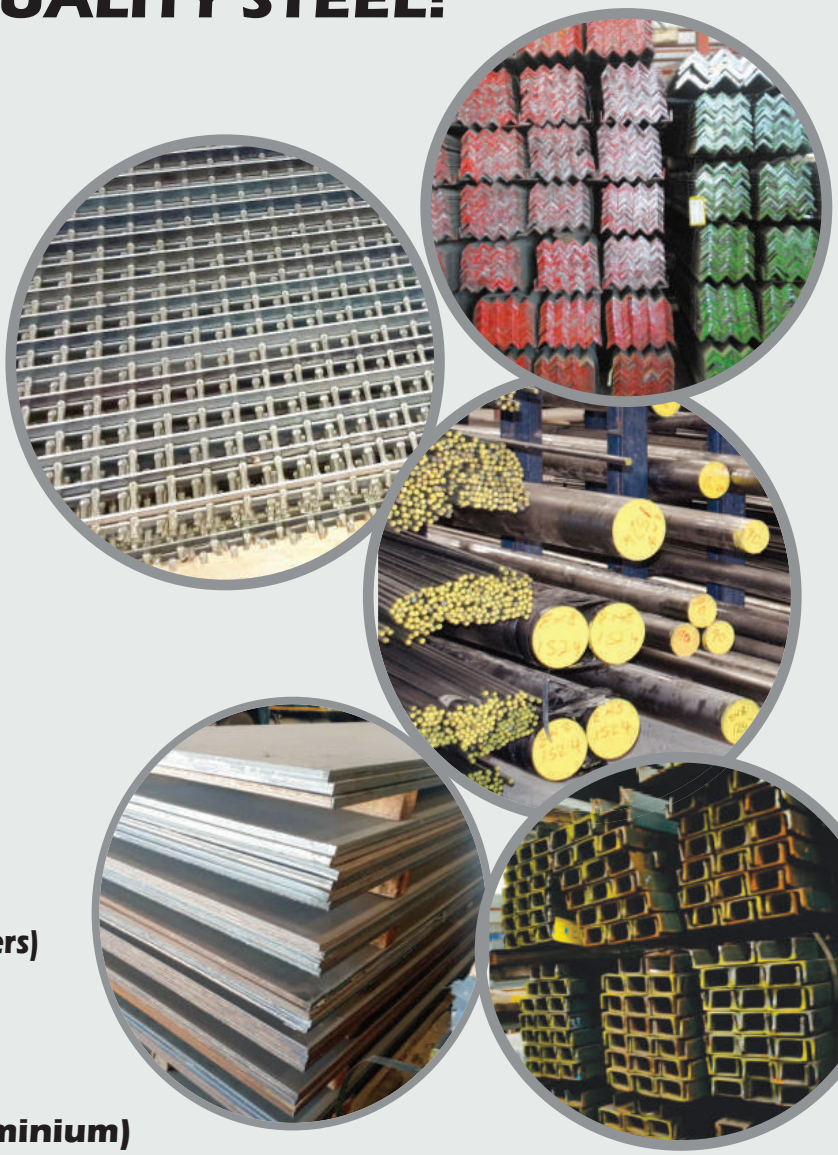
BSi STEEL

Forging Partnerships

ONE STOP SHOP FOR STEEL & STEEL RELATED PRODUCTS

THE BEST DEAL IN QUALITY STEEL!

- SPECIAL STEELS (shafts)
- BEAMS
- GRATING
- DEFORMED BARS
- REINFORCING BARS
- CONFORCE MESH
- STEEL PLATES & SHEETS
- GALVANISED WIRE
- BARBED WIRE
- RAZOR WIRE
- WELDED MESH
- DIAMOND MESH
- FIELD FENCE
- Y& DV STANDARDS
- ALUBUBBLE INSULATION
- TYING WIRE
- ROUND TUBE (corner post & stays)
- HIGH STRAIN WIRE
- ROUND BAR & DEFORMED BAR (droppers)
- U CHANNELS
- FLAT BARS
- LIPPED CHANNELS
- CHECKER PLATE (steel and aluminium)
- ANGLES



...& MANY MORE

HARARE BRANCH

37 Coventry Rd, Workington, Harare

Email: harare.sales@bsisteel.com

Telephone: 08677 000 444

BULAWAYO BRANCH

4 Burton Rd, Belmont, Bulawayo

Email: byo.sales@bsisteel.com

Telephone: 08677 000 377

A Holistic Approach to Starting a Poultry Business

By General Beven Mundida,
Livestock Consultant.

The poultry farming business is more than just feeding and administering antibiotics. Beginner farmers need to take a holistic approach when planning on establishing a poultry business. For the business to be profitable, the prospective poultry farmer has to plan carefully on the economic, social and biological components of their enterprise. Having a holistic approach means looking at the business as a whole interconnected entity (markets, practices and human resources) - understanding the bigger picture. In order for farmers to approach the poultry business holistically, they should;

KNOW THE POTENTIAL MARKET

Anyone who wants to produce poultry has first to find a market before investing into the business. Results from the market research will tell which product is in demand and at what quantities per period. A poultry farmer does not only produce for the meat or the egg market but can also supply by-products such as manure and chicken feathers. Through market research one can determine what to produce and its nature of demand.

- Whichever market you choose, you have to know it is the right one.

KNOW THE PRODUCT

a. Producing for meat

One can either sell live, freshly slaughtered, frozen birds, or value-added meat products such as plain or marinated chicken cuts, chicken flatties and patties. Freshly slaughtered birds are a good market, particularly if a farmer gets a contract to supply a specific customer. For large slaughter quantities, it is advised to use an approved abattoir that complies with health regulations.

Selling live birds can pose economic risk if they are not sold on time. By continuing feeding the birds past over their slaughtering age, a serious dent in profits in inquired. The demand for live meat chickens is affected by off-lay hens (culled egg layer hens) which are sold at a reduced price, consequently affecting the demand for, and prices of, good-quality meat live birds.

b. Producing for eggs

The second major poultry product is eggs with an option of fresh eggs or value-added egg products for example, egg rolls or one could start a boiled egg vending business at schools and markets. An important concept in product handling is the egg grading system. In Zimbabwe there are three consumer grades for egg size: large, medium or small egg. Grading the eggs caters to the preferences of egg purchaser, hence increasing desirability your product in the market.

DETERMINE THE FARMING SYSTEM

Once product and market have been determined, you can decide which farming system to use: extensive, semi-intensive (modern free range) or intensive.

Extensive poultry production is a free-range system whereby chickens find their own housing, food and water. With extensive poultry production system, even though costs appear lower, egg or meat output will be very low compared to intensive and semi-intensive systems. It is good to remember that whatever farming system you decide to use, your input will determine the output.

In a ***semi-intensive system,*** chickens are given housing, feed and water. A roaming area is also constructed next to the house so that birds can wander around outside at certain times.

In an ***intensive production system,***

chickens are kept indoors for the full production cycle and all inputs are provided.

FIND A SUITABLE LAND

The farm's position and the correct construction of chicken housing can go a long way towards making it possible to have a profitable undertaking. The farm should be in close proximity to the market to avoid unnecessary transport costs. If the farm is far away from suppliers of inputs such as feed, they will charge extra for transporting over long distances. The road leading to the farm should be in good condition and easily accessible to avoid high rates of depreciation on farm vehicles. This will make it easier for suppliers to get to the farm and for farmers to deliver to the market. It's also helpful if the farm already has an electricity connection for lighting and heating systems.

Chicken houses have to be built on a level surface, so the terrain should not have too steep a slope. This will cut down or eliminate excavation costs. It is risky to set up infrastructure for poultry production on rented land - doing so would be a waste of resources if you have to vacate the land.

Make sure that the farm has sufficient clean water. If there is a borehole on the property, have the water tested for mineral quantity or harmful substances. If, for example, the water is too saline, it can cause erosion of equipment such as nipple drinkers. If the water quality is bad, a water purifier can be installed; but this can be costly.

The farm should not be too close to neighboring poultry production facilities, in order to prevent the spread of diseases. If it is too close, make sure that a good on-farm bio-security programme is in place.

KNOW HOW TO PREVENT DISEASES

Farmers must understand and take a holistic approach to poultry health and well-being through disease prevention or animal wellness promotion. Diseases in poultry can severely affect the profitability and future existence of production, so it is essential to have good bio-security in place to prevent (as far as possible) the spreading of diseases.

A vaccination regime is of paramount importance in any livestock production system. Vaccination is a simple, safe, and effective way of protecting yo ur birds against harmful diseases, before they come into contact with them. So, understanding the vaccination programmes is key to the health of your flock.

Good drainage, particularly near the chicken houses. The area around chicken houses must not be muddy - you can trample in soil and diseases. Poor drainage can cause flooding and diseases spread more easily if there is stagnant water. It is a good idea to keep the chicken houses clean and free of stagnant water by throwing a cement or pebble slab in the area directly around them. Water that does not drain away fast enough can attract insects such as flies and mosquitoes, both carriers of disease.

Enough spacing per bird - The area where housing is to be constructed must be big enough to minimise the spread of disease between birds. This also applies if you already have a mixed farming operation, and want to start poultry.

Ventilation should be considered in poultry houses. If proper ventilation is neglected, this will seriously cause some problems to birds.

Bird separation by age - It is not a good idea to house chickens of different ages in the same facility. Diseases are transmitted much more easily to small chicks than to older chickens which have more immunity.

NB: Broilers have an additional requirement - they do not react well to sudden noises and could die of shock if an unexpected loud noise is made near them.

By using the holistic approach to running a business i.e., looking at the different aspects of the poultry system - "whole" enterprise and all of its variables, you will make certain that your business is running at its full potential.

For inquiries on poultry production contact call/ WhatsApp +263 776 420 161 or email: gbmundida@gmail.com

N.RICHARDS GROUP

Attention!

All Tobacco Farmers

As the
2022 Tobacco Sales Season
begins, remember that

N. RICHARDS GROUP

has 40 branches nationwide.
If you are looking for
BULK GROCERIES, FARM INPUTS
& BUILDING MATERIALS,
there is a branch near you!

To find out where your nearest branch is, please visit our website

www.nrichards.co.zw

and use the

Store Locator

TODA ZVAKACHIPA!

Pasina imi vatengi hapana zvatiri. Tino tarisira kushanda nemi.
Kungela line bathengi kasilutho.

Follow us on facebook

For more information & quotations, visit our website
www.nrichards.co.zw

Celebrating Woman in Agriculture

1. Amy Hart, Director at Goats.Africa (Pvt) Ltd

There is no doubt that goats are a productive asset with essential community benefits as they give diverse products. They give milk and meat to feed families and to sell for extra money, as well as manure to fertilise crops and improve pastures.

We at Goats.Africa see women as major contributors to agriculture production and marketing, we believe that when women have broader opportunities to participate in agriculture, the benefits are expanded to their families, communities and the economy. Goat production is a positive path towards enhancing opportunities for women and a sustainable choice for a richer environment in the future (see ZiMunda Farming issue 19).

2. Eunah Makoni, Promoting Dairy Farming Technologies at ABS TCM (Pvt) Ltd

It is quite unfortunate that traditionally, women's role in dairying has been peripheral and not at the decision-making level - I advocate for change. Rewards of dairy farming business increase with vertical integration and I encourage women to go the full distance by becoming dairy processors; subsequently creating jobs and supply of affordable dairy products at a local level.

Dairy farming challenges include low milk producer prices and high feed costs. Women dairy farmers should appreciate the importance of economies of scale, technology to fast-track growth and grow and conserve fodder to minimise use of bought in feed (see ZiMunda Farming issue 5).

3. Wendy Matashu Madzura, Head of Agronomy Services at Seed Co Zimbabwe

The agriculture sector has a vast number of opportunities especially for women across the value chain. I want to encourage women of all age groups to consider agriculture as a good career choice and sustainable business option. In any business venture one should research around the best practices to be employed and apply themselves whole heartedly to get the best outcome. The secret to success is working hard, passionately and consistently. I encourage women to invest time in understand the different sectors of agriculture and select their best fit and above ALL women need to move away from the bounds of society that hold them back and lower their self-esteem. I believe that women are hardworking and committed to anything they set out to achieve as such the possibilities are endless (see ZiMunda Farming issue 23). ***So, I say, Women CAN…***
It is time to jump onto the band wagon, because TOGETHER WE CAN.

4. Venensia Mukarati, An Accountant by Profession and a seasoned hydroponic farmer.

With no academic background in farming, a few years ago I started with 144 plant system and have increased to 8000 plants per cycle in my hydroponic system. Because I had to learn on the job, I owe my success in farming to the amount of work I put in and persevering with my vision. I encourage all woman beginner farmers to be patient as no one succeeds immediately - everyone was once a beginner. As a beginner you need to be ready to fail and pick yourself up. I attempted to grow produce for months and failed then when I figured out how to operate the system correctly my produce did not have a market, I had to give away my vegetables and make a loss (see ZiMunda Farming issue 7).
Start small while you grasp the farming practices and never give up you - invest more time on learning whatever you want to do.