

01 Delivering Quality Product and Service

FarmAg International

STEWARDSHIP

Manual and Checklists



English

Ensuring a safer future



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Ensuring a safer future



WHAT IS STEWARDSHIP?

An Outline of the Basic Principles of Stewardship and its Benefits

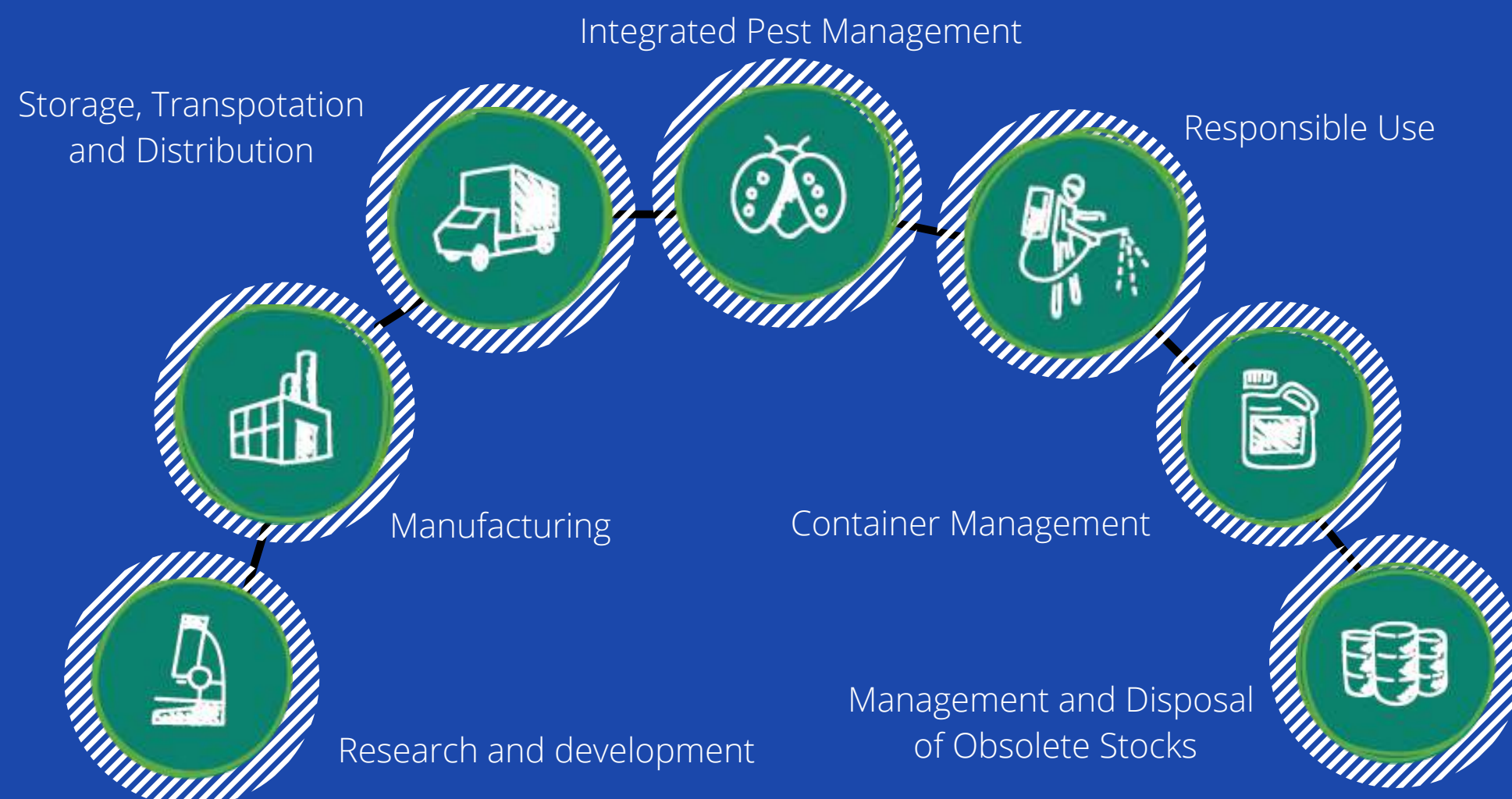


Ensuring a safer future





The 7 Elements of Stewardship



STEWARDSHIP IS A LIFE CYCLE APPROACH TO PRODUCT MANAGEMENT.

It is the responsible and ethical way of managing crop protection products from their discovery and development, to their use and the final disposal of any waste. The overall aim of the stewardship approach is to maximize the benefits, and minimize any risk, from using crop protection products.

Ensuring a safer future





RESEARCH AND DEVELOPMENT



OVERVIEW OF THE RESEARCH AND DEVELOPMENT PROCESS

GOAL

The goal of the industry’s research and development programs is to improve the range and quality of its crop protection products. These advances include both the refinement of existing products and the development of new products and applications.

DEVELOPING A CROP PROTECTION PRODUCT

A new crop protection product takes ten years and approximately \$250 million to develop (from discovery to first sales); on average around 25%, and as much as 40%, of the cost is on researching non-target (including mammalian) toxicology, environmental fate and impacts.

DEVELOPMENT COMMITMENT

All companies are working to create new products or reformulate older products so that they are biologically efficient, environmentally sound, user friendly and economically viable.

A LONG AND SUSTAINED INVESTMENT

The leading companies represented by CropLife International spend considerable time, effort and funds on Research and Development (R&D) to produce new and improved crop protection products.

SUMMARY

In summary it may be said that the research and development process is designed to continually improve crop protection products through continued research and development as well as to yield safer products.



MANUFACTURING AND FORMULATING



OVERVIEW OF THE MANUFACTURING AND FORMULATING PROCESS

GOAL	GOOD MANUFACTURING AND FORMULATING PRACTICES	RESPONSIBLE MANUFACTURING MANAGEMENT SYSTEMS INCLUDE	RESPONSIBLE CARE	SUMMARY
<p>Responsible manufacturing and formulating of crop protection products is an integral part of our industry’s stewardship programs.</p> <p>Plant science companies aim to protect both their employees and the environment to the fullest extent possible.</p>	<p>Through adoption of good manufacturing practices, the industry aims to protect its neighbors, its employees and the environment. National and international standards are strictly adhered to, and international standards are adopted (ISO 14000 and 9000 in particular).</p>	<ul style="list-style-type: none">• Plant & Process Safety• Pollution Prevention• Employee Health & Safety• Emergency Response & Community Awareness• Security• Product Stewardship• Quality Management• Contamination Prevention• Risk Assessment, Reporting & Auditing	<p>Responsible Care® is a program developed in the late 1970s by the chemical industry to assist companies in improving their environmental, health and safety performance. Participating companies are required to report on performance in a range of areas, including manufacturing.</p>	<p>Manufacturing and formulating of crop protection products is done with a view to protecting both employees and the environment.</p> <p>Through the use of good manufacturing and formulating practices and implementing manufacturing management systems, chemical companies are making a commitment to the safety of workers and the environment.</p>



STORAGE, TRANSPORTATION AND DISTRIBUTION



SANS 10206:2020

OVERVIEW OF THE STORAGE, TRANSPORTATION AND DISTRIBUTION OF CROP PROTECTION PRODUCTS

GOAL	STORAGE GUIDELINES AND EXAMPLES	TRANSPORT GUIDELINES INCLUDE	DISTRIBUTION NOTES	SUMMARY
Crop protection products need to be stored, transported and distributed safely to ensure protection of the environment, safety of workers and end users. In addition, the provision of misleading or inadequate information during distribution and marketing may also pose a risk to the environment and human health by allowing these products to be used in inappropriate ways.	<ul style="list-style-type: none">Is the storage facility in a suitable location? Away from open water sources, schools, domestic areas and human activity.Does the facility fulfill requirements of correct construction materials, floor surface, internal fire break walls, roof covering and ventilation, drainage and local fire regulations.Follow SANS 10206:2020 requirements	<ul style="list-style-type: none">Correct Marking and Labelling of productsCorrect handling equipmentTransport selectionPre-loading and unloading inspectionsInstructions in writingStowage and securing of loadsLoad segregationRoute planningEmergency procedures	<p>Retailers are important players in the distribution chain. They are often the main source of information and advice to farmers on when to use crop protection products and how they should be handled and used.</p> <p>Areas covered in retailer training programs include handling and storage of products, integrated pest management and responsible use and container management.</p>	<p>The storage, transportation and distribution of crop protection products is a closely linked process with a detailed set of guidelines which need to be followed so as to ensure protection of the environment and safety of workers and human health.</p> <p>An emergency plan should always be on hand should an accident occur and staff/drivers need to be adequately trained to deal with an emergency.</p>



INTEGRATED PEST MANAGEMENT



OVERVIEW OF INTEGRATED PEST MANAGEMENT

WHAT IS IPM?

Integrated Pest Management or IPM, as it is commonly known, is a system of managing pests which is designed to be sustainable. IPM involves using the best combination of cultural, biological and chemical measures for particular circumstances, including plant biotechnology as appropriate. This provides the most cost effective, environmentally sound and socially acceptable method of managing diseases, insects, weeds and other pests in agriculture.

“Integrated Pest Management (IPM) means the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment. IPM emphasizes the growth of a healthy crop with the least possible disruption to agro ecosystems and encourages natural pest control mechanisms.”

EFFECTIVE IPM

An elementary principle of effective IPM is to develop pest control strategies that take into account all relevant control tactics and locally available methods, and are sensitive to local environment and social needs. The successful user of IPM will evaluate the potential cost effectiveness of each alternative as well as the whole control strategy.

SUMMARY

IPM is a flexible approach which makes the best use of all available technologies to manage pest problems effectively and safely.

IPM strategies consist of three basic components:

- Prevention of pest build-up through use of appropriate crop cultivation methods
- Observation of the crop to monitor pest levels, as well as the levels of natural control mechanisms, such as beneficial insects, in order to make the correct decision on the need for control measures
- Intervention where control measures are needed



RESPONSIBLE USE



OVERVIEW OF THE RESPONSIBLE USE OF CROP PROTECTION PRODUCTS

CROP PROTECTION PRODUCT USE

Crop protection products is the general name used to cover the group of products that includes insecticides, acaricides, molluscicides, rodenticides, nematicides, anthelmintics, plant growth regulators, fungicides and herbicides.

They are biologically active chemicals or other agents, used to manage pest organisms which have been thoroughly tested for safety and usefulness before they are released for agricultural use. In order to be used safely and effectively, crop protection products **MUST** be handled and used in accordance with the manufacturers instructions.

If not used correctly, according to their label instructions, they may be harmful to people, animals and the environment.

RESPONSIBLE USE GUIDELINES INCLUDE

- Handle crop protection products carefully.
- Check that you are using the correct crop protection product for the pest problem.
- Always read and follow label instructions.
- Use the correct amount of crop protection product.
- Wear protective clothing
- Measure accurately.
- Use the right equipment.
- Prevent environmental contamination.

SAFETY AND PROTECTIVE CLOTHING – PPE

Wearing personal protective equipment (PPE) is imperative when working with crop protection products.

- Check the label and wear the appropriate protective equipment. Protective equipment includes rubber boots, face shields, gloves, dust masks, overalls, aprons, respirators, hats and goggles.
- Cover yourself up (specialised clothing overalls or long sleeve shirt and trousers)

SUMMARY

In summary, it must be emphasized that one should always read and understand the product label. Use correct dosage rates and wear protective equipment when handling crop protection products.

Work with due regard to the safety of yourself and others, especially children and woman.



CONTAINER MANAGEMENT



OVERVIEW OF CONTAINER MANAGEMENT

WHAT IS CONTAINER MANAGEMENT?

The plant science industry provides farmers with innovative crop protection products that enable them to improve agricultural productivity while sustainably managing precious natural resources such as land, soil and water.

Product packaging plays an essential role in ensuring that crop protection products are delivered safely to the intended customers, while minimizing the risk of leakage and exposure. The containers in which products are sold are part of the plant science industry's life cycle approach to product stewardship. The industry is committed to ensuring that all containers are treated and disposed of safely and appropriately and are in support of recycling options.

CONTAINER MANAGEMENT GOALS

Container management programs represent the plant science industry's commitment to safety and to ensure the industry is taking responsibility for its waste. The goals are:

- Safe delivery of crop protection products to the final customer.
- Protecting both the environment and the operator from exposure.
- Appropriate treatment and safe disposal of used packaging using the triple rinse method.
- Reducing waste and maximizing recycling.
- Ensuring compliance with local packaging requirements and legislation.

WHAT ARE THE BENEFITS

Container management programs deliver a variety of benefits to operators and the environment including:

- Reducing waste and maximising recycling.
- Safe delivery of products to the final customer.
- Safe disposal of used packaging.
- Protecting the environment and the operator from unnecessary exposure.
- Resource conservation impacts:
 - Energy savings
 - saving landfill space
 - reducing carbon emissions

SUMMARY

In summary, container management programs are supported across three main areas:

- Research and design of containers.
- Training in responsible use and safe disposal of empty containers with distributors, retailers and end users.
- Support of safe disposal and recycling options.



MANAGEMENT AND DISPOSAL OF OBSOLETE STOCKS



OVERVIEW OF THE MANAGEMENT AND DISPOSAL OF OBSOLETE STOCKS

OBSOLETE STOCKS OF CROP PROTECTION PRODUCTS

Obsolete crop protection products are those that are unfit for further use or for re-conditioning. Stocks of crop protection products become obsolete mostly because of poor long term storage during which the product and/or its packaging degrades to a point where it is no longer useable and cannot be cost effectively reconditioned. Obsolescence may also arise because a product has been de-registered or banned internationally.

MANAGING OBSOLETE STOCKS

Obsolete stocks can be disposed of efficiently and safely if skilled resources are brought together.

Unmanaged obsolete stocks can lead to product leaks and contamination of surrounding areas. This can pose a threat to human, animal and environmental health.

Obsolete stocks must be managed and disposed of in a safe manner and in an approved facility. Contact the supplier for guidance.

HOW CAN OBSOLETE STOCKS BE PREVENTED IN THE FUTURE

The procurement of crop protection products in the developing world has changed significantly over the last years, however much still remains to be done, particularly:

- The provision of better warehousing.
- Training in management of crop protection products and their stocks.
- Correct disposal of unused products and packs by farmers.

SUMMARY

In summary, the management and disposal of obsolete stocks is the responsibility of all stakeholders in the crop protection product industry. To deal with the overall problem it is a necessity that all stakeholders recognize the responsible chemical use as a key component of integrated pest management, crop management and sustainable agriculture.



FarmAg's Stewardship Strategy



Transparency

01

We build trust by being honest and transparent in our relationships with our customers and partners.

Diversity

02

We are always looking forward to see how we can better our product offering and company ethics. We strive for diversity and embrace positive change in the industry.

Innovation

03

FarmAg trusts in the stewardship program and has developed its very own strategy to improve product offering, stock management and hands on training techniques.

Ensuring a safer future



01

TRANSPARENCY

Keeping you informed. Building Trust. Pursuing Excellence.



Following Guidelines



Brand Awareness and Trust



In House Training



Results Driven

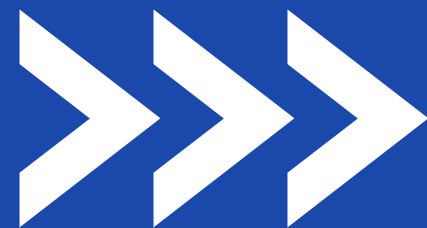
Following Guidelines

FarmAg's Strategic Plan for Following Guidelines



The FarmAg Approach

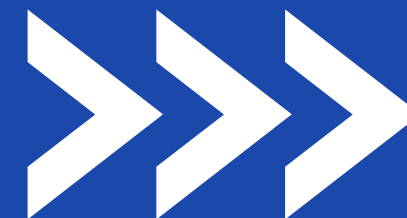
Through strategic implementation, FarmAg uses a roadmap of strategies and plans which are made up of a set of performance goals and protocols. This leads to empowerment, accountability and delivers customer value in line with FarmAg's mission.



Positive Outcomes

The positive outcomes of following FarmAg's guidelines are:

- Employee satisfaction
- Streamlined performance
- Improved customer retention
- Lowered chance of accidents or incidents
- Compliance with regulations



Customer Value + Improved Revenue

By following guidelines and implementing FarmAg's strategic roadmap, company worth and product desirability is improved. The benefits include higher customer value, customer trust and improved company revenue. Everyone profits from following guidelines.

Brand Awareness and Trust

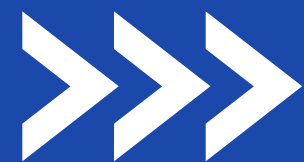
FarmAg's Strategic Plan for Building Brand Awareness and Trust



THE FARMAG STRATEGY

Through research and strategic product development, FarmAg has been able to align its own strategy for building brand awareness & trust.

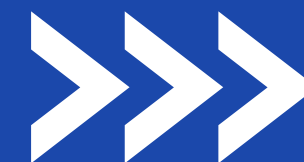
FarmAg has developed a voice for its brand through social influence and customer experience.



TRANSPARENCY + CONSISTENCY

A better customer experience across FarmAg's services, products and promotional items has influenced the success of the company. Areas focused on are:

- Going beyond customer service
- Personalising the FarmAg experience
- Listening to customers needs
- Creating long standing relationships with its customers.



COMMITTED TO OUR CUSTOMER

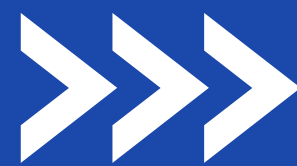
FarmAg remains loyal to its customers by making a commitment to keep its promises of product standard, remaining honest & open and pursuing excellence in service delivery.

In House Training

Developing Growth through Integrative In House Training Programs

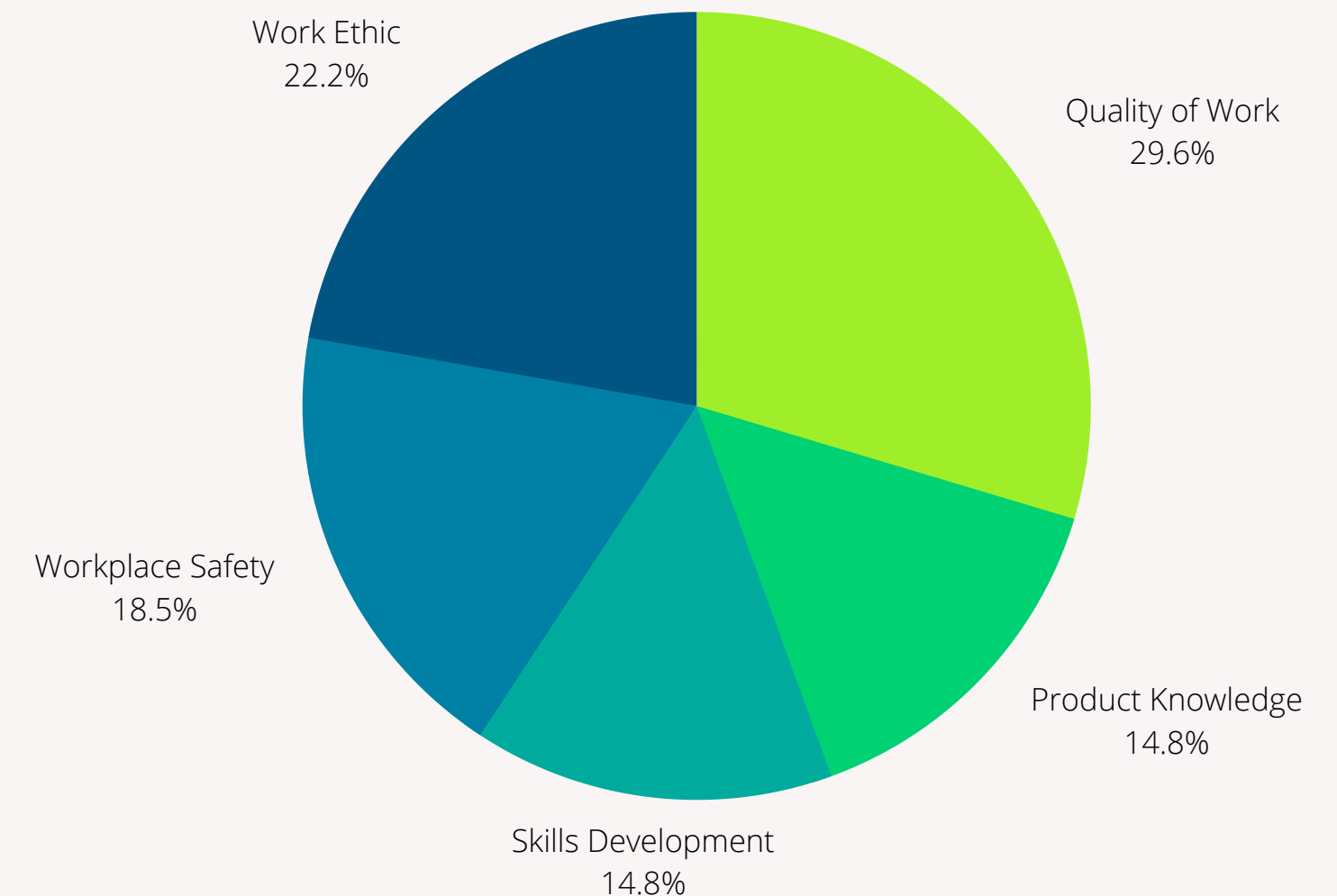


FarmAg has developed its own training system which incorporates and encompasses all areas of company function and has specific learning outcomes. The training system was developed using a systematic approach and following much research, learning methods as well as learning material was developed to deliver growth to the company, its agents and its employees.



In house training benefits include:

- Improved work ethics
- Improved quality of work
- Improved product knowledge
- Skills development
- Improved workplace safety
- Increased staff morale
- Team building
- Keeps staff/agents/customers informed
- Career progression



Graph to show growth percentages following In House training

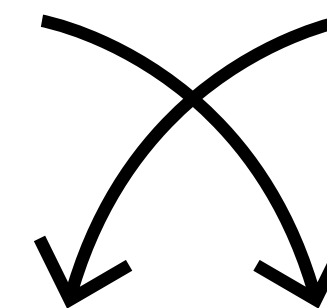
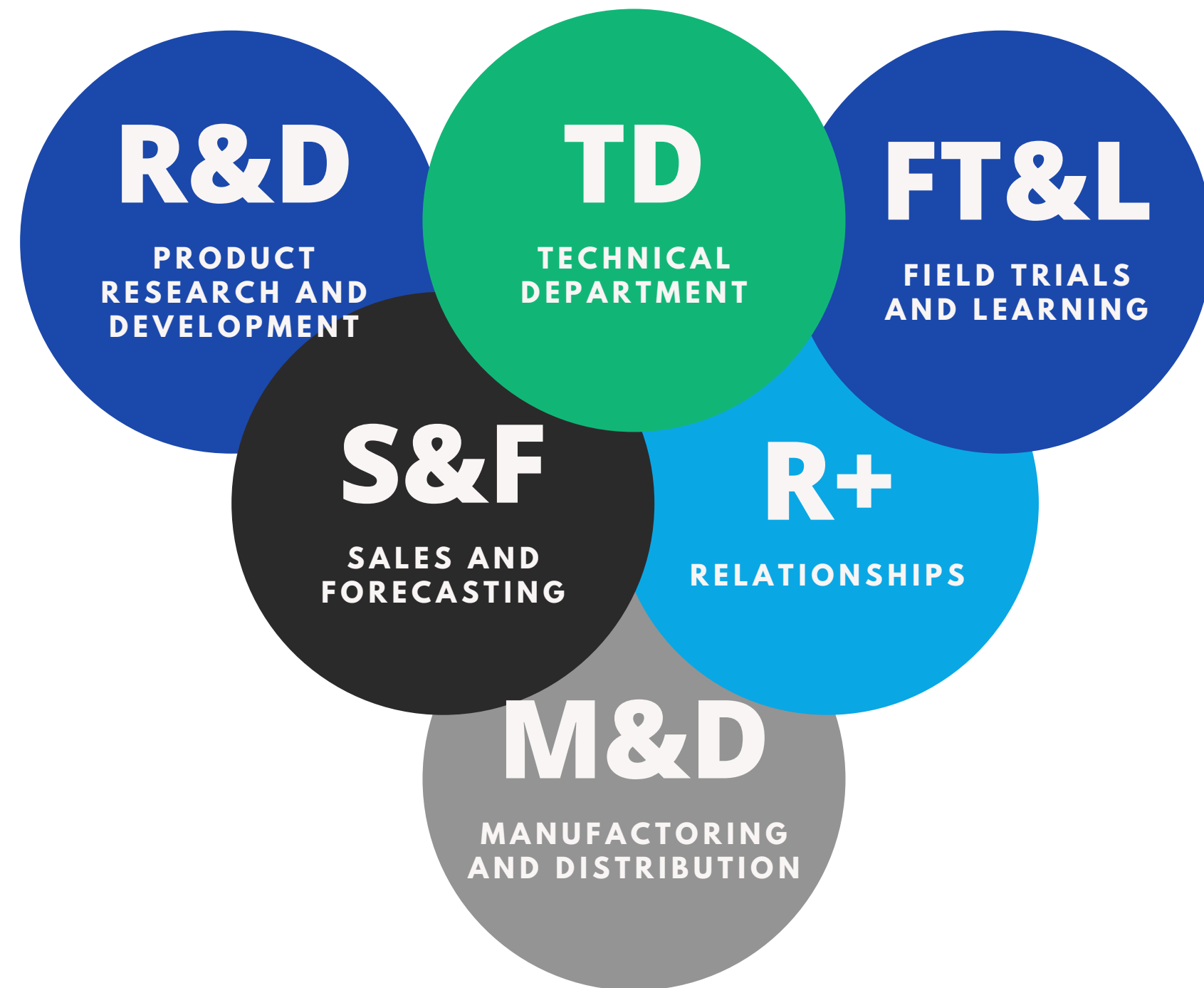
RESULTS DRIVEN

*Using Outcome Based Thinking,
FarmAg Stays Ahead!*

Motivated by success and passionate about working and achieving higher results, FarmAg strives for excellence by setting ambitious targets.

All departments within the business as well as all its agents focus on the outcome of their actions. Whether it is sales or field trials, technical department or factory, all strive toward positive results and outcomes.

Products are developed with results in mind. Years are spent researching and developing products and continuous learning takes place through data analysis and field feedback. FarmAg endeavors to be a market leader by always adapting to market needs and product trends by synergising its company structure and processes.



RESULTS

02

DIVERSITY

*Shaping our Identity. Company Ethics.
Embracing Change*



PRODUCT DEVELOPMENT

**OUR
ETHICS**

FARMAG DIVERSITY

CHANGE

**COMPANY
CULTURE**

FarmAg believes in honesty, integrity and loyalty as core ethics of the business. Product development encompasses respect for the environment and sustainability. Change is a positive attribute of the company and it drives the way in which FarmAg remains reputable and morally responsible. FarmAg's company culture embraces accountability and commitment to excellence.



03

INNOVATION

FarmAg's Stewardship Program



Taking proactive steps.

Breaking new ground and ensuring a safer future starts with the implementation of FarmAg's new innovative stewardship program. The stewardship program has been carefully constructed to encompass all of the guidelines set out by **Croplife** and the **WHO** and has been tailored to suit FarmAg's needs.

The program is unique as it contains **specialized training and checklists** for every person involved in the crop protection product lifecycle. This program will be the **standard of operations** going forward and it is a tool for all of FarmAg's employees, agents and customers.

FarmAg has now employed a full time **stewardship officer** to oversee the rollout and maintenance of the stewardship program. This program is hands on and it only requires a small effort to implement **long term** and affect changes.





FARMAG STRATEGY

FarmAg's Stewardship Program



STEWARDSHIP IMPLEMENTATION STEPS

1

Unique Team Training

To kickstart the stewardship program, detailed training will need to take place. This will be achieved by using FarmAg's training action plan which includes training materials, content and other training elements. The training includes FarmAg employees, its agents, retail staff and depots.

2

Complying with Checklists

Upon completion of a training session, checklists are issued. The checklists are designed to guide rather than instruct and should be followed to conform with the guidelines set out by Croplife and the WHO. The checklists are a quick reference guide to achieving sustainable stewardship.

3

Awareness

It is the responsibility of any FarmAg employee, agent or sales person to continue to educate others about the stewardship principles. Without a complete social shift there will be no growth in ensuring a safer and more efficient future. End users should be well informed before using any crop protection products.

THE WAY FORWARD

An outline of Stewardship within FarmAg



Ensuring a safer future



"...THE CARE OF THE EARTH IS OUR MOST ANCIENT AND MOST WORTHY AND, AFTER ALL, OUR MOST PLEASING RESPONSIBILITY. TO CHERISH WHAT REMAINS OF IT, AND TO FOSTER ITS RENEWAL, IS OUR ONLY LEGITIMATE HOPE."

Wendell Berry



The system is made up of highly effective training solutions that are tried and tested. Knowledge will be power.

POLICY, LEADERSHIP, COMITTMENT

*—An effective life cycle
program.*



POLICY

FarmAg's policy is to strive toward the responsible and ethical management of all our crop protection products. To remain in compliance with the principles of Responsible Care and the FAO's International code of conduct on the distribution of pesticides. FarmAg aims to go beyond and to exceed expectations of mandatory compliance by using a solid infrastructure based on regulatory risk assessment.

FarmAg's policy is to invest in the right solutions and never compromise on safety.

The goal is to maximize the benefits of a life cycle management system and to feature stewardship principles and guidance in all of it's products and services.

COMPANY OBJECTIVES

Product stewardship is a non-negotiable. FarmAg's objectives are to evaluate and mitigate risks, ensure actions are taken to protect human & environmental health, reduce potential liabilities and compliance with best practise guidelines and legislation.

PLAN

To ensure implementation and compliance with FarmAg's policies and objectives, the support of executive and senior management is imperative. This leads to strong and effective leadership. and ultimately life cycle practices are maintained and performance targets are achieved. The plan is to follow the life cycle management program to ensure quality, safety and health & environmental management .

AN OUTLINE OF THE PROCESS

Stewardship processes and key areas of focus within FarmAg



Members of the value chain include suppliers, management, purchasing department, manufacturing, sales & marketing, packing/storing/loading, transportation companies, customer service, distributors, contractors and customers/consumers

LIFE CYCLE MANAGEMENT PROCESS

—Implementation of a life cycle programme

1

PLANNING

Detailed planning of the elements of the management process and program. The planning includes implementation methodology and company strategy.



2

DOING

Implementing the program within the broader business and specific business units.



3

CHECKING

Evaluating the effectiveness of the implemented program.
This is a continuous and on going process that measures the progress of the program.



4

ACTING

Taking action to address program deficiencies and striving for continual improvement of the life cycle management process.



1

PLANNING

—The 5 Actions to achieve successful planning.

ACTION 1

IDENTIFY. As a minimum, the FarmAg process is to be followed to characterise and manage product hazards and risks. It is required that a list of hazardous substances be compiled in line with the hazard classification methodology expressed in the South African legislation and standards.

ACTION 2

GATHER INFORMATION.

Information must be gathered and documented on products and their components so that their hazards and exposures can be identified. FarmAg focuses on safety hazards, health hazards, environmental hazards and exposure potential.

ACTION 3

ASSESS. Information gathered allows for the assessment of a products risk. Risk assessment is a management tool that focuses on the probability that harm might be caused.

$RISK = HAZARD \times EXPOSURE$

Risk assessment assists in estimating incidence and severity of adverse effects to human and environmental health.

ACTION 4

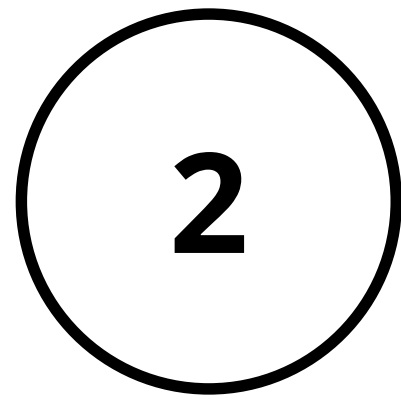
CONTROL. The control or management of risks takes place using specific strategies. Some of these may include:

- Substitution of the hazard/product
- Elimination of the product
- Training
- Hazard Communication
- Procedural measures

ACTION 5

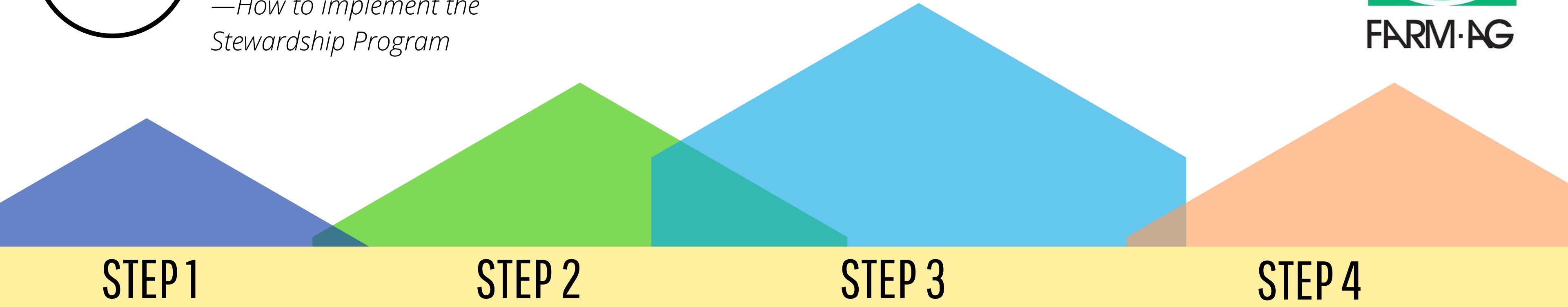
REVIEW. At specified intervals specified by the management system, hazard and risk assessments as well as risk management processes must be reviewed. This leads to additional control measures and new techniques of managing product hazards and risks.





DOING

—How to implement the Stewardship Program



RISK MANAGEMENT AND COMMUNICATION.
Conduct an adequate analysis of the risks involved in the use of crop protection products as well as an in depth evaluation of the entire stewardship life cycle within the company. Upon completion of the risk management assessment, openly communicate the findings to higher management and outline the way forward.

PREPARE & EVALUATE
Prepare the required materials, documents and risk mitigation measures. Break down the objectives into their categories as a line of action and evaluate the necessary measures needed to provide a comprehensive action plan.

TRAINING & AWARENESS
Provide training to the relevant staff as well as all members of the value chain. The training provided should be in line with the management systems approach and cover the whole lifecycle of the crop protection product. Following training it is imperative that the trained personnel spread awareness of the stewardship process and to supply informative information to others and end users.

REVIEW
It is crucial to perform internal monitoring and post training reviews to ensure that the objectives and stewardship targets are being met. Review also leads to improvement opportunities and by implementing adequate performance tracking measures, it will be possible to achieve improved learning success. Always evaluate if the company vision is being achieved.

3

CHECKING

—Assessing the effectiveness of the program



OPTION 1

INTERNAL AND EXTERNAL AUDITING
Conducting internal or external audits is an effective method for identifying areas for improvement in the product stewardship management system. Auditors should be experienced in product stewardship practices and systems. The auditors should be independent from the area being audited. Audit results should be communicated in such a way that the parties responsible can take corrective action.



OPTION 2

INTERNAL MONITORING METRICS
Internal monitoring should focus on whether product stewardship management system objectives and targets are being met and should identify improvement opportunities. Below are some of the metrics which can be used to internally assess the product stewardship program.

- Documented corporate policies and business unit strategies
- Documented product stewardship objectives, targets and plans
- Adequate performance tracking measures
- Adequate company resource allocation.



ACTING

—*Reviewing the Stewardship Program*



ACTION 1



ACTION 2



ACTION 3



STEWARDSHIP REVIEW

Periodically, the product stewardship system should be reviewed with company management to obtain support for ongoing implementation and improvement measures. FarmAg prefers to integrate management reviews as part of its regular management meetings to allow for ongoing implementation and improvement measures.

ELEMENTS TO REVIEW

- Policies, objectives and targets
- Resource allocation
- Program priorities
- Research and development projects
- Procurement, marketing and selling strategies
- Progress against previous action plans
- Changes in the organization
- Employee feedback
- Communication of the outcome of audits and reviews

IMPLEMENT AND MAINTAIN

It is crucial that the product stewardship system be implemented according to the requirements of the business and continual adaptation and maintenance of the system is required for the program to be successful



Guidelines



01

Guidelines

Produced to serve as both an information source and training material. These guidelines are intended to complement FarmAg's Stewardship Strategy and to follow the conduct on the distribution and use of pesticides.

Ensuring a safer future





Guideline Breakdown



STOCK PURCHASING AND MANUFACTURING

This will cover the basic guidelines for all entities that share the duty of care in the lifespan of a pesticide as well as the concepts of purchasing and manufacturing

1

RESPONSIBLE USE AND SALE

This will cover the guidelines for the safe and effective use of crop protection products as well as some sales guidelines

2

STORAGE AND WAREHOUSING

A detailed set of guidelines for the storage and safe warehousing of crop protection products.

3

TRANSPORTATION

These guidelines will deal with the transport and good practice of transporting crop protection products.

4

INTEGRATED PEST MANAGEMENT

Technology has paved the way for major improvements in methods of pest management. These guidelines will highlight some of the new methods and techniques which can be applied for IPM.

5

CONTAINER MANAGEMENT

A set of guidelines for the acceptable methods of safely and appropriately discarding of crop protection products. A few points on managing obsolete stocks will also be highlighted

6

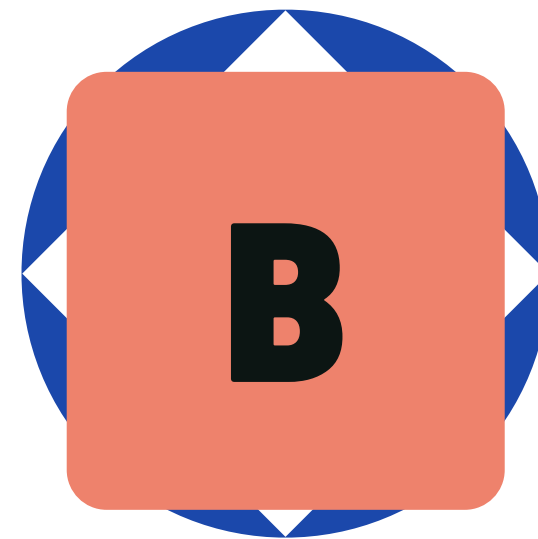
The ABC of Stock purchasing and manufacturing

Three simple steps



Acquire

Acquiring stocks is a well planned and carefully thought out process. Purchasing realistic volumes for the manufacture and sale of crop protection products prevents obsolete stocks. Only high quality and well tested products should be purchased for either the manufacture or sale of stocks. Managing stocks by using the first in first out method helps prevent the sale of expired stocks. Stock purchasers are encouraged to use up what stocks they have purchased before re-ordering more stocks. Stock should be bought according to the seasonal needs of the industry.



Best Practice

In order to be safely and effectively used, crop protection products MUST be handled and used in accordance with the manufacturers instructions. Never make any recommendations that are off label. Acquire the correct product for the target pest and make sure the label reflects that pest. Purchase and sell rotational products that fit into an integrated pest management program. Training is also imperative for those in manufacturing and purchasing positions.



Control

Strict control measures need to be implemented to ensure that the correct stocks are purchased and manufactured. The ultimate goal is to strategically plan and coordinate the supply and manufacture of stocks to prevent obsolete and expired goods. Good control measures also prevent damage to products and lead to improved health and safety of workers and the environment.

Some methods of control include:

- Having checklists in place for the correct handling and sourcing of stocks
- Sales forecasts and market analysis
- Make people aware of the legislation applicable to chemicals.

The **Responsible use** and Sale of Crop Protection Products

How to safely and effectively use and sell crop protection products



KEY AREAS OF RESPONSIBILITY AND SALE

- Always read and follow instructions
- Check you are using the correct product for the pest problem
- Store crop protection products in a safe and secure environment
- Wear personal protective clothing (PPE)
- Handle crop protection products carefully
- Measure accurately
- Use the correct equipment
- Dispose of waste materials according to local laws and regulations
- Prevent environmental contamination
- Educate buyers of crop protection products and promote responsible use
- Do not make off label recommendations
- Sell the correct amount of product needed for the job
- Train floor staff and other employees
- Work with due regard for your safety as well as the safety of other and the environment

Storage and Warehousing

The Requirements of Storing and Warehousing Crop Protection Products



PART A

REQUIREMENTS

- Assess the suitability of the location of the warehouse.
- Ascertain areas of risk including water sources, wells, ponds and water courses.
- The warehouse must be well away from areas used to store fertilizers, fuel and other combustible goods.
- The warehouse should be easily accessible with reasonable working area for loading, unloading and deliveries, access for emergency vehicles should preferably be available on two sides of the building.
- The construction of the warehouse should be made of materials that are non combustible and should be made of reinforced concrete.
- Walls should be made of solid construction and they can be clad with steel or similar sheeting. Fire walls should provide at least 90 mins of fire resistance. Concrete walls should be 15cm thick and brick walls should be at least 23cm thick. Hollow brick is unsuitable.
- It is recommended that there should be no windows in the store as sunlight may cause deterioration of plastic containers and labels.
- The roof should be made of non combustible products. Hardwood or treated wood frames are acceptable.
- Floors must be crack free, non slip and impervious to liquids. The floor should be smooth for ease of cleaning and should be free of open drains.
- There must be adequate means to retain any spillages and fire fighting water.
- There should be sufficient safety equipment available for fire protection, prevention and fire fighting.
- Adequate lighting should be fitted to be able to clearly see the stocks and their labels.
- All warehouses should be fitted with a lightning conductor.
- The warehouse should be well ventilated and exits other than main doors must be available for emergency purposes.
- The required signage for safety & security as well as operational signs should be clearly visible and placed in plain sight.

Storage and Warehousing

The Requirements of Storing and Warehousing Crop Protection Products



PART B

RESPONSIBILITIES

The overall responsibility is that of the owner or warehouse store manager

7 ASPECTS

Personnel and Staff Training

Occupational Health and Safety

Security

Fire Protection

Receipt, dispatch and correct storage of goods

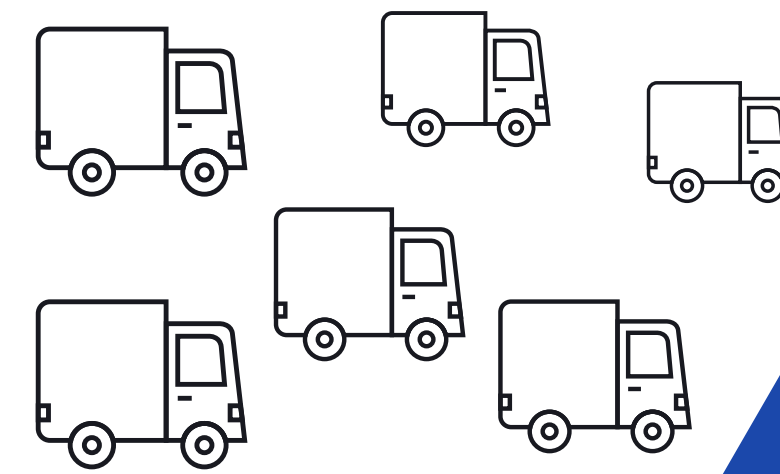
Record Keeping

Environmental Protection and emergency plans

- Warehouse structure should be distinguished into different areas. These areas include a storage room, receipt & dispatch area, loading area, area for administration, protective equipment storage and amenities.
- Storage techniques must be adhered to. This requires strategic placement of crop protection products into their different hazard categories. It is also good practice to store liquids away from powders. Shelving materials should be impermeable and made of steel.
- Stringent stock control systems must be in place. Frequent stock checks ensure that products get sold before they expire, the first in first out system is being followed, products are still valid and early detection of deteriorated containers.
- Good housekeeping practices lead to good standards of hygiene and safety.
- Personal protective clothing must be readily available and worn when required.
- Spillages, waste disposal and emergency management procedures should be in place.

Transportation

Proper organization is required for the transport of crop protection products



AREAS OF FOCUS

1. General Considerations such as
packaging, marking & labelling, climatic
considerations and handling methods &
equipment

2. Road Transport

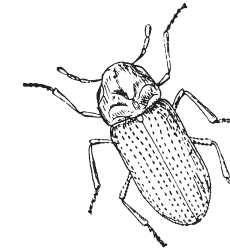
3. Loading and Dispatch

4. Emergency procedures

- For transportation packaging must be intact and of good quality.
- Obey laws and regulations regarding the marking and labelling of packages and transport units carrying dangerous goods.
- Crop protection products are susceptible to damage from exposure to the sun and adverse weather conditions. Make sure products are stored under cover and preferably in a closed unit which is waterproof.
- Care must be taken to ensure that packages are correctly handled during loading and unloading. Use the correct mechanical handling equipment.
- A competent and suitable carrier company must be selected which can carry dangerous goods. The design of the vehicles, their maintenance and construction should be suitable to carry the hazardous loads. A vehicle with a separate drivers compartment should be used and careful route planning should be considered.
- Drivers selected to handle and transport dangerous goods require special consideration and training.
- Emergency procedures require prompt action especially to contain any leakage or spillage.

Integrated Pest Management

The Benefits of Integrated Pest Management and its Implementation



PART A

THREE COMPONENTS

IPM requires competence in three areas



What is IPM?

INTEGRATED PEST MANAGEMENT (IPM) IS A MODERN, SUSTAINABLE APPROACH THAT ENCOURAGES THE USE OF NATURAL PEST CONTROL MECHANISMS WITH THE AIM TO GROW HEALTHY CROPS WITH THE LEAST POSSIBLE DISRUPTION TO AGROECOSYSTEMS AND RISKS TO HUMAN HEALTH AND THE ENVIRONMENT.

PREVENTION

PREVENT THE BUILD-UP OF PESTS

Includes a range of practical strategies that suit local conditions



MONITORING

MONITOR CROPS FOR BOTH PESTS AND NATURAL CONTROL MECHANISMS

Involves scouting for pests (insects, diseases and weeds) to determine if, when and how intervention should occur

INTERVENTION

INTERVENE WHEN CONTROL MEASURES ARE NEEDED

Involves physical, biological and chemical methods to preserve the economic value of crops with minimal effects on the environment

Integrated Pest Management

The Benefits of Integrated Pest Management and its Implementation

PART B



BENEFITS OF IPM

- Improved crop profitability due to better pest control measures and appropriate use of crop protection products.
- Stable, reliable and quality crop yields.
- Decreased severity of pest infestations.
- Reduced potential for problems of pest resistance and resurgence.
- Increased consumer confidence in the safety and quality of food and fiber products.



CROP PROTECTION COMPANIES

That integrate IPM principles into marketing and customer support for their products also stand to benefit from:

- Sustained market share and access.
- Less risk of restrictions or deregistration.
- New opportunities for established and novel products, techniques and services.
- Longer product lifecycles.
- Decreased resistance of pests to crop protection products and biotech plants.
- Increased public confidence in the credibility of the crop protection industry.



STEWARDSHIP & TRAINING

A major goal of the training is to maximize product benefits and minimize their risks. Such training covers all aspects of handling and storing crop protection products, as well as when to use and when not to use them, including how to:

- Identify pests and beneficial insects
- Assess risk of pest populations and potential crop damage.
- Manage pests according to IPM principles.
- Apply crop products safely and effectively if required.
- Avoid unacceptable risks to people and the environment.

Container Management

The Benefits of Integrated Pest Management and its Implementation

RESEARCH AND DESIGN

FarmAg is following the approach of selecting suppliers of containers that develop packaging that is safe, efficient and capable of being recycled or returned for re-use.

Triple rinsing empty containers is the recommended method of cleaning containers. Training in decontaminating empty containers and puncturing containers after use is essential.

TRAINING

COLLECTION AND RECYCLING

The collection of properly rinsed containers can lead to the recycling of the plastic and lead to improved waste management systems. If containers cannot be collected for recycling, they must be incinerated in an approved facility.



Stewardship Best Practices



01

Responsibilities

Responsibilities in terms of manufacturing, formulating, acquisition, sales, marketing, advertising, promotion, recommendation and use of pesticides within the South African legislative framework.

02

General Stewardship Activities

Responsible use training, supplying personal protective equipment and other safety equipment and participating in empty container management and obsolete pesticide disposal.

Ensuring a safer future



PERSONS WHO HAVE CERTAIN RESPONSIBILITIES IN TERMS OF PESTICIDES?

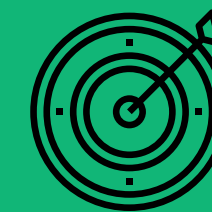
—*Who is responsible?*



FARM-AG

WHO?

1. The manufacturer or formulator
2. The registration holder
3. The distributor
4. The agent
5. The consultant or advisor
6. The retailer
7. The retail staff
8. The pest control operator
9. The person buying and applying the pesticide



TRAINING

Registration holders must develop training modules and offer training on responsible and correct usage of their products and on mitigation measures to be implemented to manage or preferably eliminate risks.

Training must be offered by:

1. Registration holders or marketing companies to distributors.
2. Distributors to agents and retail outlets.
3. Agents to farmers and farm workers.
4. Retail outlets (trained staff) to the general public.
5. Consultants



AGENTS AND SALESPERSONS

Responsibilities and Liabilities



The agent or salesperson must always

- Only sell registered pesticides.
- Only make recommendations for the use of a pesticide (including giving advice for use) according to its label instructions - this includes the purpose for which the remedy is intended for and the application method that it is intended for.
- Store pesticides under his/her jurisdiction according to the principles of the standard for safe use and storage of pesticides SANS 10126.
- Use only transporters who comply with the National Road Traffic Act, 1996 (Act No. 93 of 1996) and the standard for the transport of dangerous goods by road SANS 10231, or of transporting pesticides of own accord, be certified to transport dangerous goods with vehicles licensed and certified for the transport of dangerous goods in terms of the National Road Traffic Act, 1996 (Act No. 93 of 1996) and the SA National Standard SANS 10231 for the transport of dangerous goods.
- Ensure clients and their staff use appropriate personal protective clothing and equipment when working with pesticides.



General Stewardship Activities

FarmAg Supports the following Stewardship Programs



RESPONSIBLE USE TRAINING

- Farmers at any level: beginners, established, subsistence and commercial.
- Farm workers.
- Homeowners.
- Gardeners.
- State employees.
- Retailers.
- Agents, Distributors, Consultants.
- Any other groups

SPECIFIC AGRONOMICAL AND PUBLIC HEALTH TRAINING

- Crop specific training (cultivation and crop protection) for any crop cultivated in South Africa.
- Basic toxicology and risk management.
- Application technology and calibration of application equipment.
- Public health pest management.
- Invasive crop pest management.
- Structural pest management.

SUPPLYING PPE AND SAFETY EQUIPMENT

PPE must be issued to those handling pesticides. PPE items may include (but should not be necessarily limited to):

- Facial masks
- Respirators
- Head covers (hats)
- Rubber gloves and rubber boots
- Overalls and splash proof aprons
- Chemical barrier cream (chemical glove)
- Basic spill management kits