





AGRONOMY

UNMATCHED AGRONOMIC EXPERTISE ON THE FARM AS A BUSINESS

The Pioneer Agronomy team supports the efforts provided by Pioneer customers - to establish the best possible management practices so as to maximize productivity on their farms.

The members of the Agronomy team bring together a wide range of agronomic expertise, specialties and experience to support and advise the clients. At Pioneer, we are committed to improving crop management.

OUR MISSION IS TO PUT THE RIGHT PRODUCT ON THE RIGHT HECTARE

High tech focused: The aim is to work scientifically to produce the best crop on the most consistent basis possible in any situation. We have a diverse team, and each Agronomist specializes in a specific crop or in a specific aspect of crop production. Pioneer has Product Agronomists who focus specifically on the IMPACT™ trials - from which they are constantly releasing new products.

The team's innovative research and data analysis methods are based on research on farm size, which enables us to manage a variety of variable factors that have an impact on grain production. The latest research and unique digital applications are used to improve grain production and add value for the farmer - with Pioneer genetics.

The Pioneer Agronomy team broadens their research horizons and provides innovative information to provide the farmer with enriched data to make informed decisions throughout the year.

Leaders in Precision Technology: The right product for the right acres can be recommended using this digital technology. The Pioneer Agronomy team can make better cultivar recommendations regarding genetics placement and right population for the specific genetics. Planter precision maps can also be written for the Pioneer genetics to deliver the highest potential yield on the specific soil potential. In this way, the Pioneer customer can optimize its returns, maximize efficiency and reduce risks.

In doing so, we strive to ensure food security for the future through Pioneer genetics.



PIONEER MAKES AGRICULTURE IN SOUTH AFRICA BETTER

We will become the grower's ultimate resource, with customised solutions that help maximise their profits.

We are always updating our agronomical insights in order to educate our internal teams and customers, ensuring best practice all round.



PRODUCTIVITY

Best customer solutions

Performance predictability

| Demand planning |

Live the brand

INTERNAL PROCESSES

Hands-on knowledge

Know the business

Know the strategy

KNOWLEDGE

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SEED TREATMENT

TO THE POWER OF PIONEER

A mark of assurance in seed treatments

You choose a seed treatment package to help assure a successful season. In turn, you should feel assured that those seed treatments perform as expected, and work well with the genetics you're planting.

LumiGEN[™] seed treatments are designed, verified and proven to work with Pioneer® genetics, giving farmers a higher level of confidence in their seed treatment options.

Designed for our genetics

We evaluate hundreds of product concept combinations to develop the right seed treatment formulations for our genetic lineup. Each year, we validate those combinations in labs, greenhouses and farmer fields. Our seed treatment development process relies on 30,000 research plot evaluations annually.

Verified on our genetics

LumiGEN™ seed treatments capitalize on over 100 years of crop protection know-how, and an understanding of what growers need and how they farm. Our seed treatment combinations are carefully evaluated at the Corteva Agriscience Center of Seed Applied Technologies (CSAT)—an all-in-one facility that's part laboratory, testing center and seed treating plant. Here, seed treatments are reviewed using our exclusive six-step PASSER process.

Proven in the field with our genetics

Through our Field Test Network, our treated seed is evaluated by growers. It goes into the ground using real planters, under real conditions. On-farm testing is combined with our large-scale IMPACT™ testing program, where we conduct more than 60,000 plot evaluations each year. This testing helps ensure LumiGEN™ seed treatments work no matter what Pioneer® brand hybrids or varieties you plant.





PROTECTION

TO THE POWER OF PIONEER

Excellent control

PowerCore[™] trait technology provides excellent control of above-ground lepidopteran pests.

Through its multiple modes of action, PowerCore™ combines three genes that control major maize pests, such as maize stalk borer (*Busseola fusca*) and spotted stalk borer (*Chilo partellus*) and is tolerant to herbicides.



Protection from pests

PowerCore $^{\text{\tiny{M}}}$ is a pyramid of Bt traits that combines three proteins to deliver broad spectrum protection against above-ground pests.



Protecting your corn

Its efficacy has been demonstrated across multiple years of trials in major corn-growing regions.

It is an important product for insect resistance management (IRM).



Technology that protects

PowerCore™ trait technology provides consistent, excellent control of major lepidopteran pests of corn and the multiple modes of action also ensure the delay of resistance.





BIOTECHNOLOGY GUIDE 2022

PIONEER® BRAND PRODUCTS

STEWARDSHIP OVERVIEW

A MESSAGE ABOUT STEWARDSHIP

Pioneer is committed to the responsible management of all its seed products and when Pioneer introduces a new product in the market, we are in it for the long haul. Our philosophy of product stewardship means responsible management of the life cycle of our technologies, every step of the way – from initial research to the discontinuation of a product – for maximum product value, benefits and longevity (See Figure 1). Therefore, for the benefit of all value chain stakeholders (i.e. technology developer, producers and consumers) Pioneer requires all growers to comply with in-country biosafety regulations, Pioneer policies and crop management strategies specific to the product. In the Pioneer Technology Use Agreement (TUA) and Terms and Conditions of Purchase, growers who purchase and plant Pioneer® brand seed with biotech traits agree to adhere to the stewardship requirements described in this guide.



GENE DISCOVERY















DISCONTINUATION

Figure 1: Biotech Product Stewardship from research until product is discontinued.

Stewardship includes, without limitation, the following:

- Adhering to directions of use on all seeds, and labels for pesticides
- Seeds must be planted with an accompanying refuge of non-biotech maize seed for Insect Resistance Management (IRM). The refuge must be at least 5% of the maize as long as it is not treated with an insecticide for the target insects, or at least 20% of the maize if it is to be treated with an insecticide for the target insects. (See Table 2 & Figure 2 for more details)
- Following IRM requirements delays the development of insect resistance to incorporated plant technologies
- For crops or material containing biotech traits (as indicated on Table 1), confirming trait acceptance and intended uses and destinations with grain handlers prior to delivery or using those products on-farm
- No exportation of seeds or any other material containing biotech traits into countries where the product is not allowed or registered, including through a third party
- Implementing any additional stewardship requirements that Pioneer deems necessary for a particular product (e.g. grain or feed use restrictions and geographical planting restrictions)

WHY IS STEWARDSHIP IMPORTANT?

Proper stewardship of products is important because it offers the following benefits to growers:

- Access to Pioneer germplasm and biotech trait technologies in its seed products, subject to signing of the Technical Use Agreement.
- Assist in protection of Bt technologies and help to maintain the long-term durability of these technologies
- Using seed products solely for producing a single commercial crop encourages the development of better, high yield potential germplasm and additional technologies and innovations, further improving agricultural productivity for farmer's benefit

OUR COMMITMENT TO EXCELLENCE THROUGH STEWARDSHIP®

Pioneer is a member of Excellence Through Stewardship® (ETS) and Pioneer® brand products are commercialised in accordance with ETS Product Launch Stewardship Guidance and in compliance with the Pioneer policies regarding stewardship of those products. Crops and materials containing biotech traits may only be exported to or used, processed, or sold in jurisdictions where all necessary regulatory approvals have been granted for those particular crops and materials. It is a violation of national and international laws to move materials containing biotech traits across borders into jurisdictions where their import is not permitted. Growers should discuss these issues with their purchaser or grain handler to confirm the purchaser or handler's position on products being purchased. Excellence Through Stewardship® is a registered trademark of the Excellence Through Stewardship. For more information go to https://www.excellencethroughstewardship.org/.

PIONEER TECHNOLOGY USE AGREEMENT (TUA)

Pioneer has a long history of investing in intellectual property to provide growers with high performing varieties and industry leading services. Our continued commitment to product research results in brand products that consistently deliver high yield potential to help make a grower more profitable. Pioneer® is the flagship seed brand of Corteva Agriscience and it uses patents and Plant Variety Protection (PVP) laws to protect our investment in patented germplasm, native and transgenic traits, and breeding technologies. PVP laws give breeders exclusive control over plant varieties for up to 20 years, enabling Corteva Agriscience to bring new products to the marketplace supported by improved technology. It is important to note that Pioneer product offerings, even if not biotech, can carry multiple types of intellectual property protection, such as patented genetics, patented breeding technologies, plant variety protection, patented transgenic traits, and patented native traits, including through the terms and conditions of use found in the Pioneer TUA. The purchase of any Corteva Agriscience variety or trait is done so under license with certain limitations. By using the seed supplied in connection with a Pioneer Technology Use Agreement, you agree to the fact that the seed - and technology within that seed - includes subject matter owned by Corteva Agriscience, or licensed from a third party, that is protected under U.S. intellectual property laws. Under this contract, you agree to a single-commercial planting of the seed and agree to not bin run or save your seed.

Why is a TUA required?

- A TUA is required for the purchase of any Pioneer® brand seed all crops, biotech and non-biotech. The TUA serves as an agreement between the customer and Pioneer demonstrating that the customer understands and agrees to follow all license terms, stewardship and applicable legal responsibilities related to their seed products.
- Even though some products do not contain biotech traits, the TUA protects the intellectual property associated with non-biotech products such as germplasm and other intellectual know-how and patents.
- The TUA grants a limited license for the grower to use/plant Pioneer® brand seed containing Corteva Agriscience sourced technologies (including germplasm, non-biotech traits, and biotech traits) and produce a single commercial crop.
- The TUA requires growers to use and follow the applicable Product Use Guide which can be obtained on the Pioneer website and labels (seed and herbicide).
- The TUA prohibits certain activities such as saving seed or use of unauthorised herbicides on herbicide tolerant crops (where applicable). By abiding by your Pioneer Technology Use Agreement, you are helping Pioneer continue to invest in advances in genetics and technology that bring forward new research discoveries. These discoveries ultimately help you increase production and meet new pest and production challenges. It is of the utmost importance and required by biotechnology laws and regulations for the supplier and purchaser who intend to use the technology to enter into a lawful agreement by signing a TUA.



The Pioneer TUA allows farmers to purchase and plant Pioneer® brand products containing certain technology traits. Such an agreement should be signed every season and be handed over to the Pioneer sales professional immediately before seed can be issued.

The TUA also stipulates that:

- Any grower who has not signed a TUA must immediately notify Pioneer and make arrangements to sign the TUA or return the seed to the company.
- Biotech seed products are to be used solely for planting a single commercial crop and shall not be exported for planting in another country or supplied to any other person for planting
- Any purchase of biotech seed products by a grower who is not authorised or is not our licensed grower (i.e. did not sign a TUA) shall be void.

GROWING CONVENTIONAL AND BIOTECH CROPS

For decades, multiple agricultural systems have coexisted successfully around the world from production through supply chains. Over time, best practices to facilitate these different agricultural systems have developed and improved continuously to ensure that high-purity and high-quality seed and grain are available to support trade from various agricultural systems.

One example of such coexistence is the production of similar commodities in close proximity such as field maize, sweet corn, white maize and popcorn. Coexistence strategies should meet market requirements using science-based industry standards and management practices, and should be flexible to facilitate options and choices for growers and the food and feed supply chain. This flexibility should also include the ability of coexistence strategies to be modified as changes in products, markets or practices occur.

The ongoing success of coexistence strategies depended upon co-operation, communication, flexibility and mutual respect for each cropping system and among growers using these various systems. Over the years, growers have adapted to changes and innovations in agriculture by using new farm management practices, new technologies and other appropriate practices. It is incumbent upon a grower who is growing a crop to satisfy a particular market and to implement best practices to satisfy those market standards. By seeking to satisfy that market, the grower inherently agrees to use the appropriate practices to ensure the integrity and marketability of his or her crop in the market in which he or she seeks to market it. This is true, regardless of the particular market being served, whether it is white corn, sweet corn, organically produced corn or conventionally produced corn. In each of these cases, the grower is producing a crop supported by a special market price and therefore, assumes responsibility for meeting any applicable market specifications to receive the applicable premium price from that market. Even though the responsibility rests with the grower producing the crop for a particular market, it is each grower's responsibility to communicate with, and be aware of the planting intentions of his or her neighbours to gauge the need for any appropriate best management practices.

IDENTITY PRESERVED (IP) CROPS

IP crops are crops produced to meet the needs of specialised end-use markets. These crops are grown with a specific end use in mind, such as waxy, white and organic, amongst others, and should meet the defined requirements of that market. IP crops provide benefits for both the grower, with processor-paid incentives, as well as the end user. Growers who choose to preserve the identity of their crops to receive the additional end-use market value assume the responsibility of ensuring that their crops meet the contract specifications. To meet these specifications, the specialised end-use agricultural industry has developed generally accepted IP agricultural practices to manage IP production, as further described below. Accordingly, IP growers have the responsibility to implement any processes that are necessary to meet quality specifications. The special care required for IP crop production generally causes an increase in production costs that, in turn, causes an increase in the value of the goods sold.

MAINTAINING THE INTEGRITY OF IP CROPS

In order to preserve the identity of IP crops, thorough clean-out procedures should be implemented before and after contact is made with the IP crop. This may include cleaning areas in seed storage bins, seed boxes (hoppers), transportation vehicles, combines and harvesters. Thorough clean-out procedures should be upheld throughout all aspects of the planting procedure, which include storage, transportation, planting and harvesting. Additionally, growers of IP crops should consider steps to minimise the potential for cross pollination given the generally recognised and accepted occurrence of the movement of incidental amounts of pollen. As previously stated, communication between growers is key in determining the best agricultural management practices that should be implemented to maintain the identity of IP crops.

SEED TREATMENT STEWARDSHIP

Seed treatments, including fungicides, insecticides, nematicides and amendments play a critical role in agriculture and the production of a healthy crop. In addition to managing early-season pests and diseases, they serve as a viable alternative to foliar and soil applications in some cases.

Seed treatment management and responsible stewardship play a vital role in sustaining our environment, while maximising crop health. Responsible stewardship practices help maintain seed and seed treatment integrity, which keeps the active ingredient on the seed to achieve the maximum crop health benefit for the investment. In addition, these practices help minimise the potential for adverse effects on producers and the environment, including pollinators which may be present at the time of planting.

The following best management practice suggestions are recommended:

HANDLING

- Always read and follow the label directions and recommendations for proper handling and use of treated seed and seed treatments
- Use personal protection equipment as recommended on the product label or seed tag
- Follow all safety precautions as indicated on the label or seed tag
- Transport and transfer treated seed safely and in a manner that minimises the risk of spillage and dust

PLANTING

- Always follow planter manufacturer recommendations and avoid excess use of talc and graphite
- Eliminate flowering plants and weeds in and around the field prior to planting
- Limit dust movement from seed packages containing seed treatment. For example, consider factors such as wind speed and direction and avoid shaking the bottom of the treated seed bag when filling planting equipment
- Do not transfer treated seed next to active hives, at field margins, and adjacent to flowering plants and vegetation
- At planting, be aware of honeybees and hives located near the field, taking note of nearby hives and flowering plants and weeds, which could be attractive to pollinators and communicate with beekeepers when possible
- For pneumatic planters, direct the exhaust towards the soil surface
- Ensure all seeds are planted or incorporated into the soil at a proper planting depth

DISPOSAL AND CLEAN-UP

- Follow national and local regulations for the disposal or storage use of unused seed
- Properly dispose of unused treated seeds, seed packaging or containers in accordance with national and local regulations and the container management return policy as advised by CropLife South Africa.
- Clean the planting equipment in a manner that minimises dust
- Avoid cleaning the planting equipment next to active hives, at field margins, and adjacent to flowering plants and vegetation

GUIDE FOR THE USE OF BIOTECHNOLOGY PRODUCTS

This guide contains information for proper Insect Resistance Management for Pioneer® brand maize that contains the Pioneer Insect Protection Technologies – also referred to as the Biotech Traits. The Biotech Traits include:

Table 1: The protective proteins (insect protection and herbicide tolerance traits) and the genetic material necessary for the expression of protective proteins are approved as safe for humans, animals and the environment in terms of the GMO Act (Act No. 15 of 1997). The products are protected by one or more patent rights.

PRODUCTS	PRODUCT USE STATEMENT
Bt Trait (corn borer technology)	The product Bt trait technology contains cry1A(b) gene obtained from Bacillus thuringiensis var. kurstaki. The cry1A(b) protein produced in this maize provides control of susceptible stalk borers, Busseola fusca and Chilo partellus.
YieldGard® Maize 2 technology (MON89034)	The product YieldGard® Maize 2 technology contains cry1A.105 and cry2Ab2 genes from Bacillus thuringiensis var. kurstaki. Cry1A.105 and Cry2Ab2 proteins produced in this maize provide control of susceptible maize stalk borers, Busseola fusca and Chilo partellus.
	YieldGard® and the YieldGard® logo design are registered trademarks of Monsanto Technology LLC.
Roundup Ready® Maize 2 technology (NK603)	The product Roundup Ready® Maize 2 technology contains <i>cp4 epsps</i> gene from <i>Agrobacterium strain</i> CP4. Roundup Ready® Maize 2 technology produces <i>CP4 EPSPS protein</i> which provides tolerance to registered glyphosate formulations.
	WARNING: The Roundup Ready® gene will safeguard this hybrid ONLY against applications of approved glyphosate products such as Roundup PowerMax® (L 6702), when applied at labelled rates. The Roundup Ready® gene WILL NOT safeguard this hybrid against applications of other herbicides which require a different herbicide resistance gene. Always read and follow herbicide label directions prior to use. Roundup Ready®, the Roundup Ready® logo and Roundup PowerMax® are registered trademarks of Monsanto Technology LLC.
Intrasect® insect protection technology (TC1507xMON810xNK603)	This seed contains the Herculex® I Insect Protection gene that produces a <i>Bacillus thuringiensis</i> (Bt) <i>Cry1F</i> protein and also contains the Bt trait technology that produces a Bt <i>Cry1Ab</i> protein which provide protection against susceptible maize borers <i>Busseola fusca</i> and <i>Chilo partellus</i> . Product responses may vary by location, pest population, environmental conditions, and agricultural practices. This product also contains the Roundup Ready® Maize 2 technology with gene <i>cp4 epsps</i> from <i>Agrobacterium strain CP4</i> . The <i>CP4 EPSPS</i> protein provides tolerance to registered glyphosate formulations. This product is protected by one or more patent rights. Roundup Ready® Maize 2 technology provides tolerance to registered glyphosate formulations.
	WARNING: The Roundup Ready® gene will safeguard this hybrid ONLY against applications of approved glyphosate products such as Roundup PowerMax® (L 6702), when applied at labelled recommended rates. The Roundup Ready® gene WILL NOT safeguard this hybrid against applications of other herbicides which require a different herbicide resistance gene. Always read and follow herbicide label directions prior to use. ACCIDENTAL APPLICATIONS OF INCOMPATIBLE HERBICIDES TO THIS HYBRID COULD RESULT IN TOTAL CROP LOSS. Roundup Ready® and Roundup PowerMax® are registered trademarks used under license from Monsanto Technology LLC.
PoweCore™ technology (MON89034xTC1507xNK603)	The seed contained in this bag contains PowerCore™ technology, that contains the active ingredients Cry1A.105, Cry2Ab2, and Cry1F, proteins from Bacillus thuringiensis (B.t.) which provides good control over spotted stalk borer (Chilo partellus) and the maize stalk borer (Busseola fusca). In addition, this seed contains Roundup Ready® Maize 2 technology which provides tolerance to registered glyphosate-based herbicides. Product responses may vary by location, pest population, environmental conditions, and agricultural practices. This product is protected by one or more patent rights. PowerCore™ multievent technology developed by Corteva Agriscience and Monsanto. PowerCore™ is a trademark of Monsanto Technology LLC.
	Roundup Ready [®] Maize 2 is a registered trademark of Monsanto LLC. Always read and follow herbicide label directions prior to use. All herbicides used with this product must be properly registered with the Department of Agriculture, Land Reform and Rural Development in terms of the Fertilizer, Farm Feeds, Agricultural Remedies and Stock Remedies Act No. 36 of 1947 (as amended) and used in accordance with herbicide registered label and recommendations and all other applicable laws.
	WARNING: The Roundup Ready® gene will safeguard this hybrid ONLY against applications of approved glyphosate products such as Roundup PowerMax® (L 6702), when applied at labelled rates. The Roundup Ready® gene WILL NOT safeguard this hybrid against applications of other herbicides which require a different herbicide resistance gene. Always read and follow herbicide label directions prior to use. THE ACCIDENTAL APPLICATION OF INCOMPATIBLE HERBICIDES TO THIS HYBRID COULD RESULT IN TOTAL CROP LOSS.

Further information includes the proper management of herbicide-tolerant crops for Pioneer® brand maize with the Intrasect® Insect Protection, PowerCore™ technology and YieldGard® Maize 2 technology containing the Roundup Ready® Maize 2 technology and Pioneer® brand soybean varieties containing Glyphosate Tolerant technology.

IMPORTANT - READ BEFORE PLANTING

WHAT ARE PIONEER INSECT PROTECTION TECHNOLOGIES?

Pioneer insect protection technologies and/or the Biotech Traits allow farmers to plant Pioneer® brand maize with built-in protection to control important maize stalk-borer insect pests. Pioneer® brand maize with the insect protection technology confers protection against susceptible *Busseola fusca* (maize stalk borer) and *Chilo partellus* (sorghum stalk borer).

Note: These insects will be referred to collectively as 'stalk borers' throughout the balance of this document.

EFFECTIVENESS OF PIONEER® BRAND MAIZE HYBRID WITH THE BIOTECH INSECT PROTECTION TECHNOLOGY

STALK BORER TECHNOLOGY

The *Busseola* stalk borer is not easily controlled. Please note that, in general, the population pressure of stalk borers is higher during the reproductive phase of the plant (window period – VT to R1 stage) compared with the first generation that infests the plants in an earlier growing phase. Stalk borer resistance is therefore scored lower for the window period compared to the first generation.

It is important to carefully monitor fields for all pests to determine whether treatment with a pest control method is needed. Scouting techniques and remedial pest control treatments should address the fact that larvae must hatch and feed before incorporated plant protection technologies have an effect on the pests. Scouting should be performed regularly, particularly after periods of heavy or sustained egg laying (especially during bloom), to determine whether larval survival is significant in a particular field. Once there is unexpected damage observed then consult with your Pioneer agronomist.

INSECT RESISTANCE MANAGEMENT (IRM)

What is IRM?

An Insecticide Resistance Management (IRM) program is an essential part of good stewardship. The aim of an IRM program is to reduce the probability of target insects developing increased tolerance to the insecticidal Bt proteins, thus maximizing the longevity and effectiveness of these valuable traits in an environmentally-conscious way. Sustainable preservation of this technology places individual responsibility on everyone in the seed distribution system, from the seed supplier to the grower planting the seed. Additionally, IRM is a legal obligation for all as stipulated in the commercial permit granted by South Africa government for all Bt corn products.

THE IMPORTANCE OF INSECT RESISTANCE MANAGEMENT (IRM)

Compliance with IRM requirements is a stewardship obligation and is critical to maintaining the longevity and effectiveness of maize with Biotech Traits. If only maize with biotech insect protection technology is cultivated, rare insects that may be resistant and which survive could mate with other resistant insects and thus pass on the resistance to their offspring. To delay the development of insect resistant populations to maize with biotech insect protection technology, growers planting Pioneer® brand maize with the technology are required to also plant a separate area of Pioneer® brand maize without the technology, known as a 'refuge'.

What is a refuge?

A refuge is a block or strip of maize without technology. The primary purpose of a refuge is to maintain a population of stalk borers that are susceptible to the biotech insect protection technologies. Potentially resistant insects emerging from fields with the biotech insect protection technology can mate with susceptible stalk borer moths from the refuge, resulting in offspring that are susceptible to biotech insect protection stalk borer technologies. Please refer to Figure 2 as illustrated further in the document.

REFUGE MANAGEMENT FOR PIONEER® BRAND MAIZE WITH Bt INSECT PROTECTION TECHNOLOGY

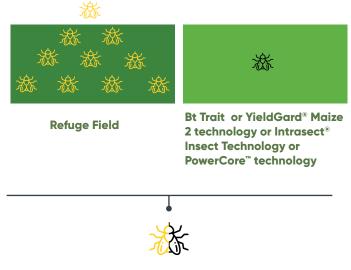
Table 2: Planting a refuge is a requirement for growing the technology and is a primary component of IRM. There are two acceptable refuge options:

PRODUCTS	REFUGE REQUIREMENTS	INSECT PROTECTION
Bt Trait	√ 95% Biotech insect	Busseola fusca (maize stalk
YieldGard® Maize 2 technology (MON89034)	protection technology with an accompanying 5% refuge – with this option no chemical control for targeted insects	borer) and <i>Chilo partellus</i> (sorghum stalk borer)
Intrasect® insect protection technology	is permitted on the refuge hectares.	
PowerCore™ technology	or √ 80% Biotech insect protection technology with an accompanying 20% refuge — with this option, chemical control of targeted insects is permitted on refuge hectares if economic thresholds are met.	

- Maize refuge options include (i) hybrids without the stalk borer Bt trait, (ii) hybrids with Roundup Ready® Maize 2 technology, and (iii) conventional maize
- Pioneer® brand maize with Bt insect protection technology and refuge hybrids must be of similar maturity
- The refuge must be planted within seven (7) days, under the same growing conditions as the hybrid with Bt insect protection technology. For example, if the hybrid with any of the Bt insect protection technology is planted under irrigation, the refuge must also be under irrigation
- The refuge area must be closer than 400m from the furthest point of the field containing Pioneer® brand maize with any of the biotech insect protection technology (as shown on Figure 2)

A neighbour's field does NOT qualify as a refuge

- Mixing of seed containing Bt insect protection technology with seed without the stalk borer trait is NOT an acceptable refuge design
- Planter bins should be properly cleaned before switching from seed containing different biotech insect protection technology to seed without the stalk borer trait, and vice versa
- Avoid volunteer plant with Bt insect protection technology in the refuge area
- Field Monitoring and scout fields frequently:
 - ✓ Monitoring Bt fields for insect resistance development is an integral part of an IRM plan. If resistant populations are detected early, alternative control measures can be quickly implemented to reduce the population and halt the spread of resistance.
 - ✓ Immediately report to the authorised Pioneer sales professional if unexpected damage is observed with biotech insect protection technologies.
 - ✓ Apply only registered products when advised.





EXAMPLES OF IN-FIELD REFUGE PLANTING OPTIONS:

(Refuge strategies are applicable on the 80/20 and 95/5 options)

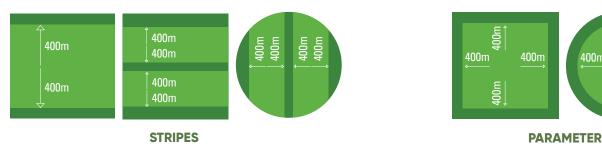


Figure 2: Structure of refuge planting permitted in South Africa

BEST PRACTICES FOR FOLLOWING INTEGRATED PEST MANAGEMENT (IPM)

Integrated Pest Management (IPM), provides the opportunity to a grower, to tailor how to manage weeds, insects, and diseases in the field. IPM integrates responsible use of traits, crop protection products, and cultural management practices to:

- Prevent the build-up of pests through starting with a clean field and rotating crops and traits.
- Use seed products, planting technology, and seedling rates that are appropriate for a given crop in a particular geographic area.
- Scout: Monitor for pest populations throughout the growing season to determine if treatment is necessary and for it to be done on time.
- Intervene when required, using combination of approaches to manage the pest population.
- Use appropriate maturity products and harvest schedules, destroying crop residue promptly.
- Minimize over-wintering of pests through soil management practices.
- Use crop rotation, including products with different traits, to delay onset of resistance.
- Use multiple modes of action of crop protection products in a season to reduce likelihood of pest resistance development.

The value of any biotech trait or insecticide spray programme could be enhanced if used within the context of an IPM (Integrated Pest Management) programme.

Pioneer recommends implementing the following best practices to maximise the value of the Bt trait:

- Regular scouting of the crop to look for unexpected damage caused by Busseola fusca or Chilo partellus in the field
- Immediately report to the authorised Pioneer sales professional if unexpected damage is observed
- Where it is practical, early burndown of weeds, tillage, planting date adjustment and crop rotation are all part of an IPM programme that could help minimise crop damage by insect pests

INSECT EFFICACY

Various factors, including pest pressure, reduced susceptibility, and insect resistance in some pest populations may affect efficacy of certain corn technology products in some regions. To help extend durability of these technologies, Pioneer recommends you implement Integrated Pest Management (IPM) practices such as crop rotation, cultural and biological control tactics (including rotating sources of Bt-protected corn traits), pest scouting, and appropriate use of pest thresholds when employing management practices such as insecticide application.

IPM SPRAY PROGRAMME

Pioneer implements an IPM programme to help farmers maximise the yield of their high yield potential Pioneer® brand maize hybrids with the Intrasect® Insect Protection technology and Bt trait stalk borer technology. Note that the IPM programme is not applicable to YieldGard® Maize 2 (MON89034 maize) and PowerCore™ technology fields.

To qualify for the benefits of the programme, customers need to adhere to the following:

- Sign the TUA at least once a year and return the signed copy to Pioneer
- Refuge areas must be planted in fields with Bt maize according to the prescribed guidelines contained in this brochure
- NON-COMPLIANCE with any of the above requirements will disqualify the farmer from the IPM programme incentives

Pioneer recommends implementing the following best practices to maximise the value of the Bt traits:

- Insecticide sprays are implemented at >10% damage and where no tassel formation is present
- The IPM spray programme DOES NOT apply to MON89034 (YieldGard® Maize 2 technology) maize or *Chilo partellus* damage for MON810 maize. If insect damage is observed on MON89034 maize plants or *C. partellus* on MON810 maize, a Pioneer sales professional or agronomy team member must be contacted to provide advice and appropriate remedial actions
- Only insecticide costs are covered, and NO application costs will be incurred by the spray programme
- This programme covers one spray per season (not per target pest)

Any person who participates in the IPM insecticide spray programme must first enrol for the programme and receive procedure manuals. Please consult your seed sales agent for additional information regarding specific details (protocols) of the IPM programme.

BEST PRACTICES FOR MANAGING HERBICIDE-TOLERANT CROPS

IMPORTANT - READ BEFORE PLANTING

WHAT IS HERBICIDE-TOLERANT SEED TECHNOLOGY?

Herbicide-tolerant crops can tolerate herbicide applications at product recommended application rates that will kill non-herbicide-tolerant Pioneer® brand maize or varieties of the same crop species. Crops with traits for herbicide tolerance allow farmers to apply herbicides to their crops that they would otherwise be unable to utilise, without causing death or unacceptable injury to that crop.

IMPORTANCE OF MANAGING HERBICIDE-TOLERANT CROPS AND WEED RESISTANCE TO HERBICIDES

Properly managing herbicide-tolerant crop technology is important to preserve the effectiveness and value of the tolerant crop seed and its corresponding herbicides in the future. Growers utilising herbicide programmes that include herbicide-tolerant crops can do so on an annual basis provided the technology is managed effectively. If you have any questions after reviewing this information, please contact your authorised seed dealer or agronomist.

BEST PRACTICES

- The use of herbicide-tolerant crops does not limit the grower to use only one herbicide product. Conventional herbicides can and should still be part of the grower's overall weed management system
- Limit the number of applications of a single herbicide or herbicides from the same mode of action family within a single growing season
- Apply herbicides at recommended dosages and at the recommended stage of weed growth, as stated on the label(s)
- Use mixtures or sequential treatments of an effective alternative mode of action to control target weeds, as recommended on the label(s)
- Use alternative weed management practices such as crop rotation, mechanical cultivation, delayed planting and weed-free crop seed
- Clean equipment before moving between fields to minimise the dispersion of weed seed
- Scout fields after herbicide application to detect weed escapes or shifts. If a potentially resistant weed or weed population has been detected, use available control methods to avoid seed dispersion in the field

MANAGING VOLUNTEER HERBICIDE TOLERANT CROPS

The seed of some crops can escape harvest, germinate the following year and become 'volunteer' weeds in a rotational crop. This can happen regardless of whether the crop seed was herbicidetolerant or not. Many tools are available for managing herbicide-tolerant volunteers, but advanced planning is advised to ensure the greatest adaptability and success.

The best strategies for managing herbicide tolerant volunteers are crop rotation and rotation of herbicides with different modes of action. The proper adjustment of harvesting equipment and the cultivation and tillage management will also help reduce volunteer plants from previous crops. Plan at least a year ahead when planting an herbicide-tolerant crop to make sure you have a weed management plan that will control any herbicide-tolerant volunteers, using alternative herbicide with different mode-of-action families and/or tillage for the next crop.

HERBICIDES RESISTANT WEED

Grower awareness and proactive management of herbicide resistant weeds are part of a successful weed control program. Suspected herbicide resistance is defined as the situation where the following three indicators occur at a site or location:

- Failure to control a weed species normally controlled by the herbicide at the dose applied (as per label recommendation), especially if control is achieved on adjacent weeds.
- A spreading patch of non-controlled plants of a particular weed species; and
- Surviving plants mixed with controlled individuals of the same species.

Possible indicators of weed resistance to herbicides include achieving good control of all but one of the labelled weed species in the field with the herbicide, and/or failure of repeated applications of the same herbicide to control only that weed species in a field.

Take note that weed control failures can have many causes that are not necessarily related to herbicide resistance. Lack of rainfall to activate pre-emergence herbicides, rainfall right after postemergence applications that wash the herbicide off the plant, cool temperatures, slow growth reducing herbicide activity in the plant, improper application timing, or improperly calibrated application equipment are amongst the many causes of less-than-expected herbicide performance. If you suspect a weed control failure is caused by weed resistance to an herbicide, you should first contact your herbicide retailer's or herbicide manufacturer's representative and your local Pioneer agronomist and conduct a thorough investigation that can eliminate other more common causes of poor weed control. Your local Pioneer agronomist will assist you with the additional steps that will be required if weed resistance to the herbicide is believed to be the issue.











Pioneer® brand products are provided subject to the terms and conditions of purchase which are part of the labelling and purchase documents.

Corteva Agriscience RSA (Pty) Limited, PO Box 8010, Centurion, 0046, Gauteng, Republic of South Africa.

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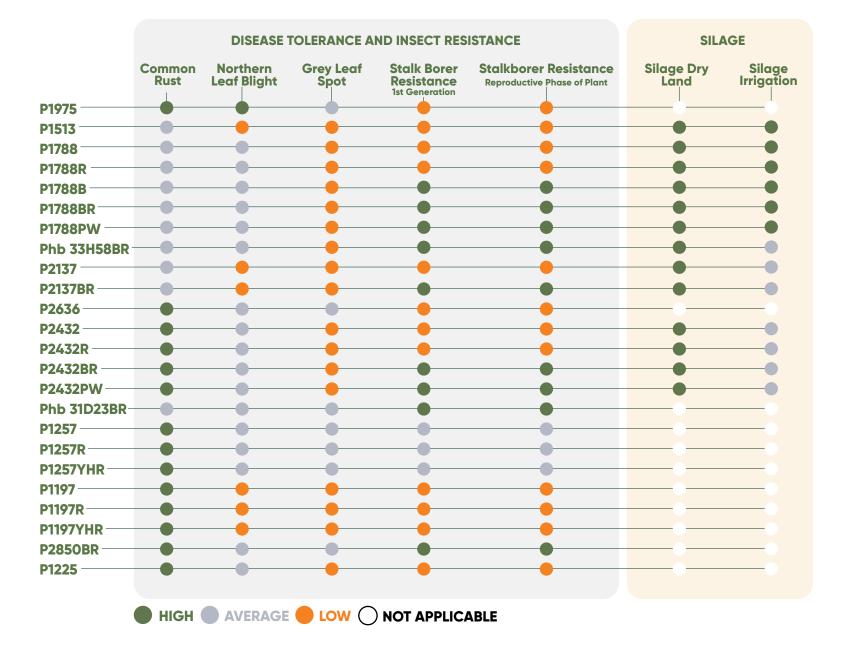
SEED CHARACTERISTICS & RATINGMAIZE, SOYBEAN & SUNFLOWER

YELLOW MAIZE

SEED INFORM	ATION				
SEED INFORM	ATION				
PRODUCTS	Mon89 / Mon810	Technology	CRM \	Irrigation	Dry Land
P1975			120	No	Yes
P1513			114	No	Yes
P1788			116	Yes	Yes
P1788R		RR2	116	Yes	Yes
P1788B	Mon89	VTP	116	Yes	Yes
P1788BR	Mon89	VTP, RR2	116	Yes	Yes
P1788PW	Mon89	VTP, HX, RR2	116	Yes	Yes
Phb 33H58BR	Mon89	VTP, RR2	115	No	Yes
P2137			119	No	Yes
P2137BR	Mon89	VTP, RR2	119	No	Yes
P2636			124	No	Yes
P2432			122	No	Yes
P2432R		RR2	122	No	Yes
P2432BR	Mon89	VTP, RR2	123	No	Yes
P2432PW	Mon89	VTP, HX, RR2	123	No	Yes
Phb 31D23BR	Mon89	VTP, RR2	118	Yes	No
P1257			112	Yes	No
P1257R		RR2	112	Yes	No
P1257YHR	Mon810	YG, HX, RR2	112	Yes	No
P1197			111	Yes	No
P1197R		RR2	111	Yes	No
P1197YHR	Mon810	YG, HX, RR2	111	Yes	No
P2850BR	Mon89	VTP, RR2	128	No	Yes
P1225			112	Yes	No

RR2 = Roundup Ready® Maize 2-gene YG = YieldGard® Stalk Borer Technology YGII = Genuity YieldGard® Maize 2-tegnology (VTP) HX = Herculex

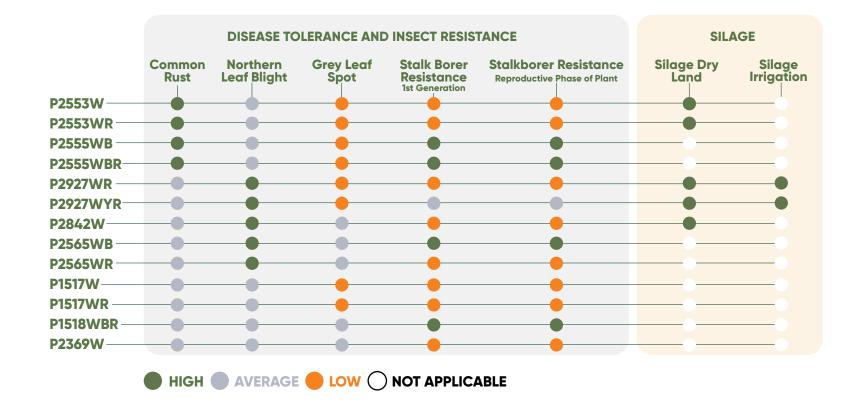




YGII = Genuity YieldGard® Maize 2-tegnology (VTP)

HX = Herculex

SEED INFOR			CHARA	ACTERISTIC	RATINGS			
PRODUCTS	Mon89 / Mon810	Technology	CRM	Irrigation	Dry Land	Prolificacy	Productive Tillers	Standability
P2553W			123	No	Yes			
P2553WR		RR2	123	No	Yes	-	_	
P2555WB	Mon89	VTP	123	No	Yes	-	_	
P2555WBR	Mon89	VTP,RR2	123	No	Yes	-	_	
P2927WR		RR2	129	No	Yes	-	_	
P2927WYR	Mon810	YG,RR2	129	No	Yes	-	_	-
P2842W			128	No	Yes		-	-
P2565WB	Mon89	VTP	125	No	Yes	•	-	
P2565WR		RR2	125	No	Yes	•	-	
P1517W			116	Yes	No		-	
P1517WR		RR2	116	Yes	No			-
P1518WBR	Mon89	VTP,RR2		Yes	No			-
P2369W			121	Yes	Yes			





GOOD AVERAGE WEAK

SEED INFORMATION							
PRODUCTS	Technology	VRV	Irrigation	Dry Land	Relative Days to 50% bloom	Relative Days to harvest ready	Habit of Growth
P48T48R	Glyphosate tolerant	4,8	Yes	Yes	42-63	111-138	Indeterminate
P53T10R	Glyphosate tolerant	5,3	Yes	Yes	46-66	128-146	Indeterminate
P57T19R	Glyphosate tolerant	5,7	Yes	Yes	50-68	130-147	Indeterminate
P62T16R	Glyphosate tolerant	6,2	Yes	Yes	50-70	125-150	Indeterminate
P64T39R	Glyphosate tolerant	6,4	Yes	Yes	50-72	132-154	Indeterminate
P71T74R	Glyphosate tolerant	7,1	Yes	Yes	55-95	138-190	Indeterminate







SEED INFORMATION			CHAR	ACTERISTIC F	RATINGS		
PRODUCTS	Relative Days to 50% flower (5.5)		Plant Height (cm)	Head: Curvature & Placement	Head: Form	Yield Potential U	niformity
P 65LP65*	70-75	120-125	180	•		•	_
P 65LL02	69-78	112-116	180	•	-	•	-
P 65LP54*	67-72	111-114	175	•	-	•	_
P 65LL14	68-74	112	170	•	-	•	-



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■ GOOD ■ AVERAGE ● WEAK



*Brown Rust (Puccinia Helianthi)
*White Rust (Albugo Tragopogonis)



MAIZE SILAGE

THE EVALUATION OF DIFFERENT HYBRIDS

The expectations placed on a good silage hybrid can differ greatly because of the producer's needs for use (for animal feeding it can be milk production), but the biggest need or expectation lies with the producers, animal nutritionist and contractors that are involved in the production of silage. The opinions of quantity versus quality when it comes to silage, are discussed regularly, but a good rule of thumb is the following:

- 1. High yield per hectare
- 2. High starch yield per Kg DM
- 3. High Total Digestible Nutrients (TDN)**

Protein value are measured and mentioned, but in our maize silage observations it is of less importance. Proteins in maize silage are mainly influenced by harvest time and the physiological phase of the maize plant.

**Total Digestible Nutrients (TDN) of silage are measured from the digestibility of crude protein, fat and fiber (thus NDF and all fiber fractions), and non-structural carbohydrates (including starches). A good (high) TDN value is found with low fiber, high digestibility of all fiber fractions and a high starch content.

Methods and Analytics

A sample representing each hybrid was taken over the trials of three seasons. Sampling was conducted by following a protocol outlined by **AgSci Unlimited Silage Consultancy**. The protocol indicated the decision of cut stage, by cutting and drying the maize material, to determining the dry matter (DM)**, using measures and parameters during harvesting, taking of samples, ensiling and analyzing of fermented samples.

**Dry Matter (DM) is shown as a percentage. Dry matter is the content of the sample that is free of moisture. Because moisture is the biggest component, it influences the amount fed and physical quantity of nutrients available to the animal, and it is important to always balance and evaluate the rations/ diets on a dry matter base.

Laboratory

All analysis was done in the laboratory **Labworld (Pty) Ltd in Isando, Johannesburg**; an affiliate of CVAS (Cumberland Valley Analytical Services) in the USA. NIR technology is used to measure the nutrition parameters of fermented silage.

Statistics

The "One-way analysis of variance" (ANOVA) procedure was used to show meaningful differences between the nutritional parameters, through the Tukey's Studentized Range test (HSD). The nutritional parameters are:

- 1. Dry Matter (DM)
- 2. Neutral Detergent Fiber (NDF)
- 3. NDF 30-hour digestibility
- 4. Starch
- 5. Total Digestible Nutrients (TDN)
- 6. Milk per ton

Meaningful differences were measured by ANOVA for the above six parameters. P-values were declared for < 0.0001.

Fermentation

All plants were cut at the R5 physiological stage. All silage trial samples fermented well. Therefore no comments can be made on ensiling ability of the different hybrids that were ensiled. By following and correctly applying the protocol, good ensilage was obtained.

Results and feedback

NDF digestibility:

Die NDF-fraction of crude fiber and the digestibility thereof (in this case the prediction after 30 hours in the rumen), are used as an indication of the type and usefulness of the fiber in the plant. Ruminants are masters in the use of fiber through microbial fermentation in the rumen, and it is because of this that ruminants are able to use these components so effectively, which leads to the point where we can make silage from the whole plant.

Milk per ton:

This is a specific calculation and is based on certain parameters from the laboratory used for the analysis (CVAS). This is an indication of how the silage can be used by dairy farmers.

Are yellow or white maize better for silage? There are mostly no differences between nutritional values, such as fiber levels or starch yields. What we need to do in silage production is to optimize the quantity and quality. If a white hybrid shows better quantity and quality than a yellow hybrid on a specific farm, it will be a good hybrid for silage.

Norms of the different parameters measured in the laboratory:

Under Norm	On Norm	Above Norm
<37%	37 - 42%	> 43%
<54%	54 - 58%	>59%
<27%	27 - 39%	>39%
<6.5%	6.5 - 9.2%	>9.2%
<65%	65 - 72%	>72%
	<37% <54% <27% <6.5%	<37% 37 - 42% - 54 - 58% - 27 - 39% - 6.5 - 9.2% - 39%





Quality Results of Silage Trials over 3 years

Cultivar	NDF	NDF at 30hrs digestibility	Starch	Crude Protein (CP)	TDN	Milk per Ton (kg/ton as-is)
P1197 Platform -	S	<u> </u>	S	S	S	3306.2
P1257 Platform -	S	<u> </u>	<u>S</u>	S	<u>S</u>	3278.7
P1788 Platform -	S	<u> </u>	<u>S</u>	S	<u>S</u>	3341.2
P2137 Platform -	S	S	S	S	<u>S</u>	3261.0
P2432 Platform	S	<u> </u>	S	S	<u>S</u>	3142.3
P2865WBR	S	<u> </u>	S	<u> </u>	S	3268.7
P2927WYR ——	S	A	<u>S</u>	S	S	 3077.2

- Concern Acceptable Strength
- Pioneer conducts silage trials annually to compare cultivars with the already known cultivars from the Pioneer package.
- All the cultivars tested in the above table showed good silage characteristics, however, how each one will be applied will differ, like the needs of the farmer or producer differs.
- Speak to your Pioneer Agronomist in your area to make sure that the cultivar choice made suits the farmer's or producer's needs.
- Plant population plays a big role in the bulk ability of each cultivar, higher plant populations from the trials do not always produce higher yields.
- Speak to your Pioneer Agronomist in the area to make sure that the selected cultivar is planted at the right plant population.

*Note: For more information on the agronomical qualities of each hybrid, refer to the seed information tables in this brochure.

Terms and Conditions:

- The beforementioned information is only for informative purposes. Contact your Pioneer sales agent for more information and recommendations regarding your specific farming practices.
- The performance of products is erratic and depends on a lot of different factors such as moisture stress, heat stress, soil type, environmental stresses as well as diseases and plagues.
- Individual results can vary.
- Recommendations in this report are made with good intentions and are based on the samples that were analyzed. No responsibility will be accepted for loss of production or otherwise, related to a possible negative aspect of any chosen hybrid, or any cultivation practices or abilities on the farm.

Acknowledgments and collaboration

- Data collection and analysis of the trials were done in collaboration with AgSci Unlimited Silage Consultancy, www.agsci.co.za, unlimited@agsci.co.za
- Farmers and contractors.





HEAD OFFICE

GENERAL ENQUIRIES: Tel: 012 683 5700 **EMAIL REQUESTS:** info.rsa@pioneer.com **ADDRESS:** 272 West Avenue, Lakefield Office Park, Block A, 2nd Floor, Centurion, Gauteng

MANAGEMENT

Jaco Snyman | Sales Manager | 082 330 5570

Daneel Fourie | Agri-Business Manager | 064 803 4000

Emile van den Berg | Agronomy Manager | 082 806 7452



AREA	AGENT	CONTACT NUMBER
AREA MANAGER	Jacques Minnaar	066 305 2461
AGRONOMIST	De Bruyn Myburgh	082 698 8117
BERGVILLE / WINTERTON	Gary Wood	082 809 7326
BERGVILLE / WINTERTON	Eric Heinecken	083 468 0619
DUNDEE	Brian du Toit	082 460 4891
DUNDEE	Frikkie Bester (subagent)	082 323 4305
KWAZULU-NATAL MIDLANDS	Kevin Wood	082 721 7750
PIET RETIEF	Sarel Nieuwenhuizen	082 680 9198
PIET RETIEF	Wynand Nieuwenhuizen (subagent)	079 504 9412
SWARTBERG / KOKSTAD	Philip Mortlock	082 466 1120
SWARTBERG / UNDERBERG	Pip Mortlock (subagent)	082 826 0247
HIGHFLATS / IXOPO / CREIGHTON	Roger Mann (subagent)	083 634 4367
UGIE / MACLEAR / ELLIOT	Craig Lindsay	083 276 1202
UGIE / MACLEAR / ELLIOT	Philip Lindsay (subagent)	083 301 5260
VRYHEID / PAULPIETERSBURG	AP Keeve	083 679 1763

MPUMALANGA -

AREA	AGENT	CONTACT NUMBER
AREA MANAGER	Gerhard Marais	082 806 7931
AGRONOMIST	Roelof le Roux	083 627 0050
AMERSFOORT / VOLKSRUST	De Wet van den Berg	083 789 9252
BETHAL	Hannes Swanepoel (Snr)	082 555 9571
BETHAL	Hannes Swanepoel (Jnr) (subagent)	072 180 2298
DELMAS	Callie de Bruin	082 463 6759
DELMAS / GROOTVLEI / HEIDELBERG	Joppie Victor	082 944 6080
DELMAS / LEANDRA	Jaco Haasbroek	082 457 6810
HENDRINA / ERMELO	Colin Odendaal	082 061 8284
HENDRINA / ERMELO	Heinz Oellermann	'082 806 7496
HOËVELDRIF	PM Erasmus	082 388 2148

EASTERN FREE STATE / STANDERTON .

AREA	AGENT	CONTACT NUMBER
AREA MANAGER	Des Cuff	060 957 2992
AGRONOMIST	Neels Faber	723 465 037
BETHLEHEM / CLARENS / PAUL ROUX	Gideon Knobel	083 628 6477
FICKSBURG / CLOCOLAN / TWEESPRUIT	Ryk Neethling	072 527 1334
FOURIESBURG / BETHLEHEM / CLARENS	Rikus de Villiers	083 286 8713
HARRISMITH / WARDEN	Marchand Janse van Rensburg	082 781 5221
HARRISMITH / WARDEN	Maré Potgieter (subagent)	083 604 2608
LADYBRAND / EXCELSIOR / TWEESPRUIT /	Meyer Kotze	082 908 9994
CLOCOLAN	Inleyer Rotze	082 708 7774
LADYBRAND / EXCELSIOR / TWEESPRUIT /	Erik Faure (subagent)	082 895 1897
CLOCOLAN	Elik i ddie (subageiit)	002 873 1877
MORGENZON / STANDERTON	Francois du Plessis	082 331 6572
SENEKAL / WINBURG / MARQUARD	Jurgens Kotze	083 414 3034
STEYNSRUS / ARLINGTON / LINDLEY /	Louis Koch (subagent)	073 661 0452
VENTERSBURG	Louis Roch (subagent)	073 001 0432
VREDE	Hennie Janzen	082 322 8037

/ MPUMALANGA / LIMPOPO —

AREA	AGENT	CONTACT NUMBER
AREA MANAGER	Jacobus Dürr	079 525 2340
AGRONOMIST	PR Janse van Rensburg	082 635 2897
BAPSFONTEIN / BRONKHORSTSPRUIT	Chris van der Schyff	082 707 8342
BRITS / THABAZIMBI	Louis Minnaar	083 800 0969
CAROLINA / LYDENBURG / BELFAST / STOFFBERG / MARBLE HALL	Johan de Bruto	076 801 5993
DELMAS / OGIES / LEANDRA	Michael McGregor	082 328 3250
DELMAS / OGIES / LEANDRA	Hendrik (Swannie) Swanepoel (subagent)	079 494 0125
DELMAS / OGIES / WITBANK	Puna Maree	076 812 1514
GROBLERSDAL	Johan Lindeque	082 567 2577
HENDRINA	Morné Ferreira	083 267 8866
LOUIS TRICHARDT / HOEDSPRUIT	Janus Muller	073 162 1926
MARBLE HALL	Cornel Smit	079 699 4503
MIDDELBURG	Jan Wijma	082 555 0014
MIDDELBURG	Pieter Erasmus	082 450 6705
OGIES / WITBANK	Christo Viljoen	082 462 8701

CENTRAL REGION —

AREA	AGENT	CONTACT NUMBER
AREA MANAGER	Gert Naudé	076 431 2257
AGRONOMIST	Neels Faber	723 465 037
PRODUCT AGRONOMIST - EAST	Mauritz van Heerden	082 885 3962
BETHLEHEM / LINDLEY/ PETRUS STEYN / REITZ / KESTEL / ARLINGTON / CLARENS	Louw Stadler	082 614 8629
BETHLEHEM / LINDLEY/ PETRUS STEYN / REITZ / KESTEL / ARLINGTON / CLARENS	Herman Coetzee (subagent)	083 261 9756
GROOTVLEI / VREDE / VILLIERS	Johan Stadler	082 782 8840
HEIDELBERG	Hendrik de Wet	082 555 0442
HEIDELBERG	Henri Marais (subagent)	083 764 2404
HEILBRON / ORANJEVILLE / SASOLBURG / VANDERBIJLPARK	Brenden Naudé	076 884 0514
KOPPIES	LK Jonker	082 784 1666
NIGEL / DEVON / BALFOUR	Jan Smith	072 663 2004
REITZ / PETRUS STEYN / BETHLEHEM / DANIELSRUS	Oosie Oosthuizen (Jnr)	082 789 4309
REITZ / PETRUS STEYN / BETHLEHEM / DANIELSRUS	JG Oosthuizen (subagent)	076 780 1222
VILLIERS / MEMEL / FRANKFORT	Schabort de Jager	082 441 9739

NORTH WEST —

NORTH WEST		
AREA	AGENT	CONTACT NUMBER
AREA MANAGER	Nelis Potgieter	071 291 2612
AGRONOMIST	Philip Fourie	082 909 3262
COLIGNY / LICHTENBURG / GERDAU	Charl de Wet	071 681 1254
DELAREYVILLE / GEYSDORP / MAREETSANE	Niel Kamffer	082 707 6552
KLERKSDORP / HARTBEESFONTEIN / OTTOSDAL / VENTERSDORP	Shaun Plotz	073 3246 776
LICHTENBURG / SANNIESHOF / BIESIESVLEI	Dirk van Niekerk	082 781 6377
OTTOSDAL	Tommie Wiersma	082 385 7122
SCHWEIZER-RENEKE	Gerrit van Niekerk	083 627 5162
VRYBURG / LOUWNA / TOSCA	Ami de Wet	082 343 6467
WOLMARANSSTAD / LEEUDORINGSTAD / MAKWASSIE	Willie Smit	083 307 9144

NORTHERN CAPE / EASTERN CAPE / WESTERN CAPE —

AREA	AGENT	CONTACT NUMBER
AREA MANAGER	Kallie Knox	067 424 7877
AGRONOMIST	AJ Steyn	083 627 3788
BLOEMFONTEIN / ALIWAL-NORTH / PETRUSBURG	Launa van Aswegen	083 310 0108
BLOEMFONTEIN / ALIWAL-NORTH / PETRUSBURG	Trevor Thompson (subagent)	060 945 4922
CRADOCK / COLESBERG	Gerhard Schulz	074 176 0583
CRADOCK / COLESBERG	Arno Oberholster	082 458 7948
DOUGLAS / ORANJERIVIER	Henry du Toit	082 783 5593
DOUGLAS / VAALRIVIER / ORANJERIVIER	Willie Botha (subagent)	083 632 1900
DOUGLAS / VAALRIVIER / ORANJERIVIER	Lourens Oellermann (subagent)	082 4912 553
HOPETOWN / VANDERKLOOF / GARIEPDAM	Dawie Human	083 286 4943
JACOBSDAL / KIMBERLEY / MODDERRIVIER / HOPETOWN	Stephen Bann	084 625 5367
JACOBSDAL / KIMBERLEY / MODDERRIVIER / HOPETOWN	Gawie du Plessis (subagent)	079 493 0552
JAN KEMPDORP/ HARTSWATER / BARKLEY WES / CHRISTIANA / BLOEMHOF	Andries Zandberg	082 809 4372
PRIESKA / MARYDALE	Jannie Smit	082 496 5835
UPINGTON / KAKAMAS / GROBLERSHOOP	Jannes Gagiano	084 745 2992
WES-KAAP / TSITSIKAMMA	Rikus Schoeman	063 691 1838
WES-KAAP / TSITSIKAMMA	Johan Schoeman (subagent)	072 406 2470

/ NORTH- & WEST FREE STATE / NORTH WEST -

AREA	AGENT	CONTACT NUMBER
AREA MANAGER	Hennie du Plooy	066 433 6418
AGRONOMIST	Martin Brandt	823 030 698
PRODUCT AGRONOMIST - WEST	Johan Kock	071 681 4039
BOTHAVILLE	Ian Joubert	082 920 2640
BOTHAVILLE / WESSELSBRON-NORTH	Chris Joubert (subagent)	082 572 5632
BULTFONTEIN	Pieter Vermaak	082 542 4394
BULTFONTEIN	Piet Vermaak (subagent)	082 571 3422
HOOPSTAD / HERTZOGVILLE	Pieter Labuschagne	082 775 1935
HOOPSTAD / HERTZOGVILLE	Braam Labuschagne (subagent)	082 571 5496
HOOPSTAD / HERTZOGVILLE	Christiaan Labuschagne (subagent)	082 565 2202
KOSTER / GROOTPAN / DERBY / MAGALIESBURG	Liaan Lotter	082 323 4878
KROONSTAD / WELKOM / ODENDAALSRUS	Fires Janse van Vuuren	082 809 5431
PARYS / VREDEFORT	Etienne Aucamp	083 600 5779
POTCHEFSTROOM / FOCHVILLE / VEREENIGING	Abrie Coetzee	083 448 0940
POTCHEFSTROOM / FOCHVILLE / VEREENIGING	PE Coetzee (subagent)	073 123 9456
VENTERSDORP / CARLETONVILLE	Sias Fourie	082 551 4536
VILJOENSKROON / VIERFONTEIN	Hanco Steyn	072 783 4845
WESSELSBRON / WELKOM / ALLANRIDGE	Braam Strauss	082 562 9667

	SMALLHOLDER FARMERS / TENDERS	AGENT	CONTACT NUMBER
	SMALLHOLDER FARMERS / TENDERS	Charles Matlou	083 327 7015
l	SMALLHOLDER FARMERS / TENDERS	Harry Matebese	083 769 4257

THE **LONG** LOOK

The Pioneer way of doing business

We are an international company with a unique combination of cultures, languages and experiences. Our technologies and business environment have changed dramatically since Henry A. Wallace first founded the Hi-Bred Corn Company in 1926.

This Long Look business philosophy – our attitude toward research, production and marketing, and the worldwide network of Pioneer employees – will always remain true to the four simple statements which have guided us since our early years:

- We strive to produce the best products in the market.
- We deal honestly and fairly with our employees, sales representatives, business associates, customers and stockholders.
- We aggressively market our products without misrepresentation.
- We provide helpful management information to assist customers in making optimum profits from our products.



