# PULA IMVULA

>> GROWING FOOD >> GROWING PEOPLE >> GROWING PROSPERITY >>

GRAIN SA
GRAAN SA

JULY
2017

MONSANTO

# PULA IMVULA

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**PULA IMVULA IS AVAILABLE IN THE FOLLOWING LANGUAGES:**
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THIS PUBLICATION IS MADE POSSIBLE BY THE CONTRIBUTION OF THE MAIZE TRUST



# IN THIS ISSUE...

We enjoyed the NAMPO Harvest Week during May this year. This is always a great event and this year it was particularly good because we were able to show the small farmers equipment that is appropriate for small farmers. I do hope that next year more small farmers will try to get to the show – it will open your eyes to the sector.

Many of you will be paying your contributions for the Jobs Fund – remember that the purpose of this project is to get you to use all the land that you have available and to get used to paying for the inputs. It is a great help to receive subsidies, but this might not be able to continue for long. Therefore, it is very important that you use what you are receiving now very wisely to become independent as soon as possible. We must always remember that a government depends on people paying taxes – this is where the money from government is sourced.

With so many people out of work, the government of the day is going to struggle to get enough money from the employed people to be able to support those who rely on subsidies and grants. In order to make a contribution to our country, we need more people who do not have to rely on grants – we have to contribute to our country and not be a burden to the state. By using the land you have available, and becoming self-reliant, you are contributing to building our beautiful country. We must always keep in mind that the goal of these subsidies is just to get you on your feet. There is nothing more empowering and liberating as to be self-reliant and to know that you can manage on your own. If you can work wisely with the gift you receive today, you will be proud to stand on your own feet tomorrow.

If you have livestock, during the winter, in areas where we experience frosts, the protein levels of the grass are very reduced and it is likely that your cows, sheep and goats are not getting enough to eat, and particularly not enough protein in their diet. If it is at all possible, please will you try to supplement the diet of your livestock – there are many products (licks and blocks) available at the local agricultural businesses (Afgri, TWK, etc). Get advice on how you can help your livestock through the winter – remember that they are working for you and you should care for them. Each cow and ewe that you have should give you a calf/lamb/kid each year and they will not be able to do this if they are not adequately fed during the long and cold winter months.

Keep warm and start planning for the coming season – farmers can only rest for a short while and then we start working again.



# NAMPO 2017 unfolds the future

This year, the well-known NAMPO Harvest Day took place from 16 - 19 May at NAMPO Park, outside Bothaville. NAMPO is the agricultural sector's most relevant platform and market place for innovation, technology and information exchange which is valuable and applicable to all farmers, big or small. New expansions and innovations by various role-players to add value to this event initiated the 2017 theme namely 'Unfold the future'.

With 2017 being the 51st year of Grain SA hosting this prestigious event, the expo has been going from strength to strength with showcasing over 700 exhibitors this year. The stock section boasted with ten sheep breeds, four goat breeds and 28 cattle breeds that were exhibited. The Saddlebred Society of South Africa and Arab Horse Society of South Africa also participated, in addition to the Friesian and miniature horses which were seen. An international auctioneering competition was also offered for the first time and a youth show was offered daily in the cattle/horse arena, where the young ones showed their skills by working with miniature horses, Limousin and Brahman cattle.

A significant new addition to the expo this year, was the Grain SA experience centre where all the services of Grain SA was portrayed including Research and Conservation Agriculture, Economic Services and Marketing as well as the Farmer Development Programme, all under one roof. This allowed for agricultural economists, Development Co-ordinators and other specialists in the Grain SA team to be readily available with advice and assistance throughout the duration of the show. A small movie theatre was also available for visitors to enjoy a movie where audio visuals of the organisation's activities could be seen.

NAMPO has yet again hit an all-time high record of receiving 78 648 visitors from 16 - 19 May! We hope to see you all there next year.

***Article submitted by Liana Stroebel, Provincial Co-ordinator, (Western Cape) of the Grain SA Farmer Development Programme. For more information, send an email to liana@grainsa.co.za.***

# NAMPO 2017 unfolds the future

# Meet our nominees for 2017 (Part 1)

The 2017 Grain SA Developing Farmer of the Year competition has commenced. It is very important to understand what this competition is all about. It is actually not a competition at all, but rather an opportunity to recognise hard work and perseverance and also to motivate and show others what can be achieved and what to aim for.

In the July and August issues of Pula Imvula we would like to introduce you to the 34 farmers who have been nominated for the 2017 Subsistence, Smallholder, Potential New Era and New Era Farmer categories. During September we will convey who the twelve finalists are, and in November the four winners will be announced. Here are the first 17 nominees under the Smallholder and Subsistence categories.

## Subsistence nominees

### Mvikele Simeon Lukhele – Mpumalanga

61-year-old Mvikele believes that without farming there will be no life. He views farming as the backbone of all careers.

He was born on a farm in the Piet Retief district. He grew up and became a farmworker on the same farm at the age of 16. Mvikele worked on this farm for 15 years before he moved to Hereford, in the Gert Sibanda district, in 1986. He planted maize and beans on the hectare allocated to him.

Mvikele joined Grain SA in 2004. He could soon see the difference in his yield. Before becoming a member and attending study groups, Mvikele harvested about ten bags of maize from his hectare. His yield improved from less than 1 t/ha to an average of over 6 t/ha.

This year, with the wonderful rains that fell at the right time for maize production, Mvikele is expecting to harvest over 8 t/ha.

# Meet our nominees for 2017 (Part 1) – Subsistence nominees

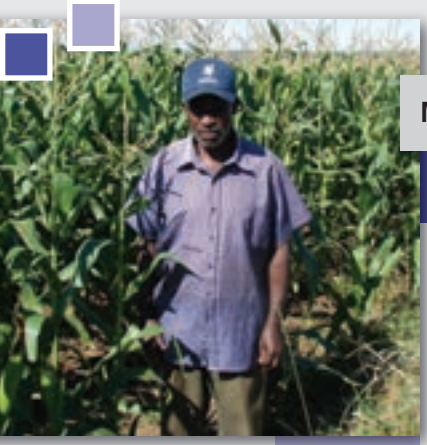
## Sipho Sybion Vilakazi – Mpumalanga

Sipho has never worked or lived on any other farm but the farm he was born on in 1962 – the farm Vergenoegheid near Piet Retief.

On this farm, he started off as a general farmworker in 1979 and was promoted to a tractor driver, before the Department of Land Reform bought the same farm for the community in 2001.

In 2009 Sipho joined Grain SA's Sulphur Springs Study Group and today he is the proud chairman of the group. He produces maize on three hectares of arable land and is a participant in the Grain SA Jobs Fund Project.

Sipho's ambition is to expand his farming operation. He plans to acquire more land and one day leave a lucrative farming enterprise for his children.



## Mbulaleni Amos Mshayisa – Mpumalanga

71-year-old Mbulaleni's life took him to the mines for a number of years but being a farmer at heart he eventually returned to the land.

Mbulaleni started his career as a general farmworker on the farm Geldehoop before he became a miner. After eleven years in the mining industry, he decided it was time for him to return to the land. But it was only when his employer, Gunter Freddie, gave his farmworkers a hectare each to cultivate, that Mbulaleni knew for certain that his heart lied in agriculture.

He is a member of the Sheepmoor Study Group and a participant in the Grain SA Jobs Fund Project since inception. He produces maize on two hectares and harvested over 3 t/ha in the 2015/2016 planting season.

Mbulaleni plans to grow his farming operation to one day plant over 100 hectares with maize.

## Ghsasa Solomon Dhlongolo – Mpumalanga

When the 68-year-old Ghsasa joined the Donkerhoek Grain SA Study Group in 2009 he had no idea of how this would change his life for the better.

Ghsasa was a farmworker for most of his working life. He started off as a general worker but soon advanced to become a tractor driver. In 2009 he decided to plant maize for his family's consumption and started off by cultivating two hectares of land allocated to him by the Kaluka CPA near Piet Retief.

His eminent passion for farming and his diligent attendance of Grain SA Study Group meetings and functions soon resulted in him being elected as chairperson of the Donkerhoek Study Group.

Ghsasa is a member of the Grain SA Jobs Fund Project and looks forward to harvest his best yield ever on the ten hectares he planted this year.

## Somhlola Soko – Eastern Cape

Somhlola was born and grew up in Nikwe Village near Bizana where his parents made a living through farming.

As a young child, he helped his father on the land and with the cattle and even though he really loved agriculture, the need to earn more money directed his career path towards the mines. Somhlola worked for several mining companies in Johannesburg from 1980 until 1994 when he was declared unfit to work because of his deteriorating health.

He returned to farm in 2005 and became a member of the Ntlozelo Study Group in 2010. Through Grain SA, Somhlola attended two training courses on maize production.

With the help of the Jobs Funds Project, the knowledge he acquired through the training courses and the mentorship of Grain SA – Somhlolo wishes to start producing more than what his household can consume and ultimately generate some profit from his lands.

## Siyavuya Njeya – Eastern Cape

74-year-old Siyavuya plants his maize land by hand. He did everything he was taught by Grain SA meticulously and doubled his maize plantings over the last two years.

Siyavuya grew up in the village of Nikwe close to Bizana and was interested in farming for as long as he can remember. For most of his working life he worked on mines in and around Johannesburg.

He decided to become a fulltime farmer and joined the Grain SA Ntlozelo 30 Study Group in 2010. Siyavuya also takes part in the Jobs Fund Project since 2014 and still managed to harvest 1,5 tons on the hectare he planted in the drought stricken 2015/2016 planting season.

This year he planted two hectares with maize and the crop looks amazing.

## Simphiwe Elliot Gumbi – KwaZulu-Natal

Even though Simphiwe grew up in the rural areas of KwaZulu-Natal, he was not really interested in agriculture and only considered it as a career after working on the mines for 22 years.

In 2005 Simphiwe and his wife, Vuyelwa, decided to make farming and helping the community their new life ambition. They farm on a portion of Hoffental farm near Tabhane in KwaZulu-Natal.

The couple has no mechanisation and plants their maize by hand. Simphiwe has taken part in the Grain SA Jobs Fund Project since 2015 and has reaped the benefits in yield. According to him the knowledge he gained by attending the Thabane 29 Study Group and the mentoring by Grain SA's officials made him a much better farmer.

Simphiwe is a pillar in his community, he sells maize and mealie meal and helps those that are less fortunate by supplying them with food. He is also passionate about sharing the knowledge he gained through his association with Grain SA with other farmers in order for them to get the best yields from the resources at their disposal.

# Meet our nominees for 2017 (Part 1) – Subsistence nominees

## Zibuyile Adelaide Mvula – KwaZulu-Natal

After working as a domestic worker for more than five years, Zibuyile longed to return to the land and make agriculture her way of earning a living. Her only reference to farming at that stage was what she, as a young girl remembered her parents working the lands.

Zibuyile is a member and the spokesperson of the Gudlucingo Farming Group and also a member of the Grain SA Zwelisha 29 Study Group. They farm on a portion of KwaGudlucingo near Bergville. She participates in the Grain SA Jobs Fund Project under which she planted four hectares of maize this season.

As a young woman, Zibuyile is a true ambassador for agriculture. She invites people to join Grain SA and tells them about the benefits of being mentored and organised. She also shares her passion and successes with young people, trying to get the youth more interested in farming.

## Nophinzile Tolo – Eastern Cape

Nophinzile lives on the Baziya Makaula communal land near Mthatha in the Eastern Cape. Her parents were communal farmers and she worked all her life to follow in their footsteps.

Three years ago, she joined Grain SA and became a member of the Baziya Makaula 30 Study Group. Nophinzile farms with goats and sheep and partakes in the Grain SA Jobs Fund Project. She has planted one hectare of maize under the auspices of this project.

Nophinzile also attended training courses on production practices and financial management.

She does not own any tractors or implements and plants and harvests by hand. Despite her lack of mechanisation, Nophinzile still harvests an average of 3,5 t/ha per year.

Her dream is to expand her farming operations, plant a bigger portion of land and produce enough maize to sell and make a good profit.

## Vuyiseka Victoria Mxezengana – Eastern Cape

At a farmer's day hosted by the Mroshozweni Study Group, Vuyiseka was introduced to Grain SA and what they do for the full spectrum of grain farmers in South Africa. She immediately signed up to become a member of both the organisation and the Mrhoshweni Maize Project Study Group.

She grew up on the Ngcwala communal land in Qokolweni near Mqanduli where both her parents farmed. Agriculture was nothing new to her but she realised that her parents were old and they still used outdated practices and technology. She needs Grain SA to bring her in touch with new methods and technology.

Last year Vuyiseka planted one hectare of maize as a participant in the Grain SA Jobs Fund Project. She hopes that the yield will be so good that she might be able to plant a bigger area in the 2017/2018 planting season.

## Zoliwe Rhum Nombewu – Eastern Cape

Zoliwe's aspirations to one day become a successful commercial farmer motivated her three years ago, to visit the Grain SA office in Mthatha in order to find out more about the organisation.

She was impressed to hear about the training courses and mentorship programmes that Grain SA provides and became a member and also joined the Siyakhula Gxididi Maize Project Study Group.

However, Zoliwe was no stranger to agriculture. She grew up with her parents who were communal farmers in the Mount Fletcher area. They farmed with livestock and produced maize by using animal traction.

In sharp contrast, Zoliwe owns two tractors, two pick-up trucks and all the implements she needs to cultivate the 25 hectares of communal land allocated to her. She planted two hectares of maize n the 2016/2017 planting season as a participant of Grain SA's Job Fund Project.

## Mavis Nomvula Hlatshwayo – Mpumalanga

Mavis was born 55 years ago in the Pongola district. Her mother died while she was still very young and therefore she grew up with her grandparents. They farmed with maize, beans, vegetables, other crops and livestock and it was during those years that Mavis's passion for agriculture developed.

She joined Grain SA and became a study group member in 2005. She regularly attends study group meetings, workshops and courses organised by Grain SA.

Mavis is a member of Sizanani Society, an organisation for female members only. They support each other and give donations to community members who are living below the bread line. This remarkable woman dreams of access to more land to farm on and create job opportunities for the unemployed in her community.



## Pula Imvula's Quote of the Month

*Success is to be measured not so much by the position that one has reached in life as by the obstacles which he has overcome.*

~ Booker T. Washington

# MANAGING YOUR CANOLA CROP

Your canola crop has been planted and has established well. What do you need to focus on in the production season?

The focus should be on post emergence weed management, fertilisers and disease control. When it comes to post emergence weed control, the type of canola will play a critical role in your choice of herbicides, especially in broadleaf weed control.

If you have planted a conventional cultivar you will not be able to apply a broadleaf herbicide because it will kill your crop as well. Clearfield (Cl) and Triazine tolerant (TT) canola has been modified to tolerate specific herbicides when it comes to the control of broadleaf weeds. Cysure (herbicide) can be used in Clearfield cultivars, while atrazine and simazine is compatible with TT cultivars. By using canola in your crop rotation you are able to deal with possible grass weed problems in your fields more effectively. Once the canola crop has grown to a stage where the soil is covered, the crops compete well with any possible weeds.

> *Once the canola crop has grown to a stage where the soil is covered, the crops compete well with any possible weeds.*

The next focus point is fertilisers. Depending upon seasonal rainfall, you can decide to apply once-off topdressing, with a possible second one later in the season. It is very important to make sure that the topdressing you apply contains Sulphur (S). Canola has a high S need and it plays an important role in the formation of oil in the seed. The nitrogen (N) amount applied can vary between 30 kg and 40kg of N per ha. The first topdressing can be applied with 4 to 6 weeks after emergence. A second topdressing of 30 kg of N/ha can be applied at stem elongation. It is also very important to apply boron. This element plays an important role in the forming of the flowers and eventually the number of pods, and should be applied no later than 10% flowering.

Disease control is the third aspect to focus on. Although the cultivars we use in South Africa are bred with varying degrees of Blackleg resistance, it is still necessary to apply a fungicide to control this disease. This should be done at the 4 to 6 leaf stage. Specific fungicides are registered for use in canola. The other disease that needs attention is Sclerotinia. This disease also has to be controlled by use of a fungicide, but only needs to be applied when the crop is at 30% flowering. Again, be careful to only use registered products.

> *The focus should be on post emergence weed management, fertilisers and disease control.*

The three aspects covered in this article are really important to ensure that you give your canola crop a good opportunity to produce a good yield.

***Article submitted by Dr Johann Strauss, Directorate Plant Sciences, Research and Technology Development Services, Western Cape Department of Agriculture. For more information, send an email to johannst@elsenburg.com.***

# What has changed?

We live in a world that is for ever changing and the tempo of change is increasing. You may find this a strange topic to discuss but bear with us, there is method in the madness. One may even ask the question 'Are things changing?' Unfortunately, or fortunately things are changing – sometimes for the better, sometimes for the worse.

Let's consider a few changes that affects the farming environment. The changes mentioned is by no means a complete list and neither in order of importance.

***Information***

The amount of information and availability has changed dramatically – to such an extent that it can be mind boggling. The development of electronic technology is the major driver of the amount and availability of information.

***Technology***

As discussed in our previous articles mechanical and digital technology is continuously changing and improving.

***Climate***

It is now more or less an accepted fact that the climate is changing due to the mostly negative influence we as human beings have on the earth. The temperature is increasing, and the occurrence of hailstorms, thunderstorms and flooding, hot and cold spells – are on the increase and becoming more severe.

***Marketing***

The marketing of agricultural products has changed dramatically from a controlled system to a free market system during the late 1990s. As of late different markets, each with its own challenges, are opening to our farmers.

***Consumer preferences***

Consumer preferences has also changed dramatically with the emphasis on high quality products produced in an eco-friendly and animal friendly manner. And they want to know where the products come from – traceability.

***Economy***

The latest change regarding the economy is the downgrading of our country to junk grade which will have negative effects on all of us. The downgrading is the result of a poor economic growth rate and the increase in unemployment. Interest rates will increase and the value of the Rand will decrease. Because of this the prices of inputs will increase, especially those that are imported. The one advantage for exporters is when the Rand decreases they earn higher prices for their products.

***Transport***

The face of transport has changed tremendously in South Africa. In earlier days, most of the transport activities were by rail, especially bulk transport. Today trucks are congesting our roads and transport has become more expensive.

***Government support***

It is a fact that our farmers receive very little support from government.

***Theft***

Even the face of theft is changing in our country – there is a higher incidence of theft that cost our farmers a lot.

## What about this?

We have briefly mentioned a few of the changes that have taken place over the last couple of years. You may now ask the question "What about this?" Let's look at these changes from a management point of view.

First, you must gather information regarding the changes and then identify the effects the changes will have on your business. Will the influence be negative – such as increasing costs, reducing your production, or will the influence be positive – such as increasing income, or increasing the quality of your products. Then you must manage these changes. You will be able to manage the effects of some of the changes and some not. They must then be managed as a risk.

In previous articles, we have explained that a farming business is one of the most difficult businesses to manage. This statement stands true and these changes makes it even more difficult. Should you wish to survive as a farmer, you must take note of these changes and keep abreast of all changes by managing their effects.

The irony of these changes is, the negatives of these changes affect small farmers in relative terms more than the bigger commercial farmers. Vice versa, as far as positives affects from these changes are concerned, the bigger farmers experience greater benefits than the small farmers. The nett result being that there is more pressure on the small farmer to manage his business properly to survive.

The only way you can manage your business is to be properly informed. To be informed you must gather information, read the information, digest it and decide how you are going to react.

We have also previously stressed the point that to stay a successful farmer your farming business need to improve and advance every year. Somebody said 'when a farmer does not improve his business every year, he will stagnate and when something stagnates, it eventually dies.'

For the small farmer – stick to the basics. Manage your business, including the effects of changes, as best as you can by proper planning, organisation, implementing and control, using all the information you have gathered. Ensure that the information, both from internal and external sources, are reliable and correct.

Have you, for instance, already started managing (or at least done some planning) for the next drought?

***Article submitted by Marius Greyling, Pula Imvula contributor. For more information, send an email to mariusg@mcgacc.co.za.***

11 Meet our nominees for 2017 (Part 1)

# Smallholder nominees

## Hamu Samson Shuwisa – Mpumalanga

Samson Shuwisa's interest in farming started when he as young boy helped his father in the fields. He bought his first cow when he was still very young and today owns a herd of 120 heads of cattle.

He worked on the farm Goedehoop for over 50 years before he started to farm for himself on a farm called Nooitgedacht, close to Sheepmoor.

In 2009 Samson decided to plant more maize than what he needed for home consumption and sold the rest of his maize. Two years later, in 2011, he joined a Grain SA Study Group of which he has been the chairman for the past seven years.

He started by cultivating one hectare of maize as part of Grains SA's Jobs Fund Project and today, Samson plants 18 hectares, totally funded by himself. His biggest dream is to one day, in the near future, expand his hectares to well over 100 hectares.

## Sifiso Michael Mnisi – Mpumalanga

Sifiso was born on the farm Rooikop in Donkerhoek. He can still remember how he as a youngster admired the crops of neighbouring commercial farmers and dreamt about one day growing crops just as beautiful.

After working as a boilermaker for a couple of years whilst trying to farm on a part time basis, Sifiso returned home to make farming his full-time career in June 2012. He joined the Donkerhoek Study Group and participated in the Jobs Fund Project for the past three years.

Sifiso planted maize on 8 hectares in 2014/2015 and 2015/2016 and doubled his yield during the 2015/2016 season. His positive attitude is contagious and a positive influence on young people considering agriculture as a career.

In five years' time Sifiso aims to be a successful commercial farmer winning Grain SA's New Era Commercial Farmer of the year competition.

## Meluxolo Mfoxo – Eastern Cape

As a young man of 25, Meluxolo joined his father on the farm to help him. Now 31 years later, he is a successful smallholder farmer with a deep-rooted passion for the land.

Meluxolo farms with dry beans, maize, cattle and sheep on Goedehoop near Ugie in the Eastern Cape. He soon realised that even though he learnt a lot from his father, it was crucial to keep up-to-date with new technology and decided to join the Umnga Flats Study Group in 2013.

He attended various training courses ranging from Business Ethics and Farming for Profit to the more practical courses like Maize and Sorghum Production. With the knowledge he acquired and the mentorship he received from Grain SA, Meluxolo bettered the soil of his lands and became more mechanised.

Meluxolo is working hard towards his goal of becoming a successful commercial farmer in the near future.

## Thumekile Mzinzi – Eastern Cape

Thumekile was born on 18 August 1959 in the Engcobo district. He started farming in 1999 on his portion of 113 hectares of the Umnga Flats near Ugie.

He uses his land to cultivate dry beans and maize and rents another 220 hectares from the municipality which he uses for his livestock to graze on. Apart from his cattle and sheep, Thumekile is also the proud owner of two tractors and a truck.

As a member of Grain SA's Umnga Flats Study Group, he attended training courses in Business Ethics and Maize and Sorghum Production.

Thumekile is highly regarded in his community and is the Community Co-ordinator for the Communal Development Programme in the area.

He believes that a farmer can only be successful if he is hands-on and works hard. Through his hard work, passion and dedication, Thumekile wants to grow his farming enterprise into a successful commercial farm.

## Thembalihle Hopewell Tobo – Eastern Cape

Thembalihle joined the military in 1986 and was a soldier for ten years before his love for the land brought him back to where his roots are – Ndunge near Bizana.

In 1996 he started farming with maize and livestock. He cultivates 25 hectares of communal land and owns a tractor and the necessary implements. In the 2015/2016 planting season Thembalihle planted 14 hectares of dry land maize and despite the drought managed to harvest 41 tons. He also planted two hectares under the Jobs Fund Project on which his yield was 3,5 t/ha.

Thembalihle became a member of Grain SA in 2006 and is currently the chairperson of the Ndunge Study Group. He is an active member, organising meetings, conducting farmers' days and oversees and maintains the trials.

He believes that with agricultural activities in the area, the prevailing poverty could be drastically alleviated and by working together the Ndunge and Bizana farmers could become the feeders of the nation.

**Nominees are in no particular order.**

***Article submitted by Hanlie du Plessis, Freelance writer. For more information, send an email to hanlieduplessis@telkomsa.net.***

# WINTER WEEDS to take into account after the summer crop

Moisture preservation and the management thereof become critical for sustainable crop production. Winter weeds compete for moisture and nutrients just as strongly as summer weeds. That is why it is important to keep an eye on winter weed infestations and control them when they grow abundantly.

Seed deposit in winter must also be prevented so that the problem does not escalate over time. Winter weeds are not killed by frost and hoeing is not advised as too much soil moisture is lost.

The most common winter weeds that occur where summer crops were planted are ragwort (Senecio consanguineus), milk thistles (*Sonchus* spp.), tall fleabane (*Conyza* spp.) and white-flowered Mexican poppy (*Argemone ochroleuca*).

Some weed species can also start germinating in late summer and deposit seed throughout the winter. Such weeds include khaki weed (Tagetes minuta), dwarf marigold (*Schkuhria pinnata*), blackjacks (*Bidens* spp.) and devil's-thorn (*Emex australis*).

During the past few seasons the incidence of devil's-thorn has increased, and when it is allowed to grow uncontrolled, it can require a number of spraying applications to get numbers under control again. Most of the winter weed species are broad-leaved species (dicots) and can be controlled effectively with post-emergence herbicides.

> *Most of the winter weed species are broad-leaved species (dicots) and can be controlled effectively with postemergence herbicides.*

Herbicide application with a high-clearance sprayer is ideal because sprayings can be done while crops (dried) are still in the field. Weeds can thus be controlled in a more timely manner. Tractor sprays and/or implements will probably only get into the fields after the harvest, which usually is too late. This means


***Photo 1: Ragwort (*Senecio consanguineus*).***


***Photo 2: White-flowered Mexican poppy (*Argemone ochroleuca*).***


***Photo 3: Common milk thistle (*Sonchus oleracea*).***

***Table 1: Possible herbicides that can control winter weeds effectively post-emergence.***

| Active ingredient | Formula | Weed species |
|---|---|---|
| 2,4-D/dicamba | 240/80 g/litre | White-flowered Mexican poppy<br>Tall fleabane<br>Devil's-thorn |
| Dicamba | 480 g/litre<br>700 g/litre | Ragwort<br>Tall fleabane |
| Dicamba/topramezone | 160/50 g/litre | Devil's-thorn |
| Atrazine/sulcotrione | 300/125 g/litre | White-flowered Mexican poppy<br>Tall fleabane<br>Devil's-thorn |
| Bendioxide | 480 g/litre | White-flowered Mexican poppy<br>Ragwort |
| Bromoxynil | 225 g/litre<br>400 g/litre<br>450 g/litre<br>500 g/litre | White-flowered Mexican poppy<br>Common milk thistle<br>Devil's-thorn |
| Bromoxynil/terbuthylazine | 150/333 g/litre | Common milk thistle<br>Devil's-thorn |
| Glyphosate* | 700 g/kg<br>500 g/kg<br>540 g/litre | White-flowered Mexican poppy<br>Common milk thistle<br>Ragwort<br>Tall fleabane<br>Devil's-thorn |
| Paraquat* | 200 g/litre | White-flowered Mexican poppy<br>Common milk thistle<br>Ragwort<br>Tall fleabane<br>Devil's-thorn |

** It is better to mix glyphosate with 2,4-Dichlorophenoxyacetic acid (2,4-D) than to spray it on its own. This provides better control and prevents weeds from becoming resistant. Better control is obtained where sufficient water is deposited together with paraquat*

that the weeds have become too big and already reproduced seed. This can negatively affect the efficiency of post-emergence herbicides.

The golden rule with weed control is that the smaller the weed is, the more effectively it can be controlled. This also applies to winter weeds that usually first have a basal rosette shape as a seedling before stalked upright branches form.

**Table 1** provides a brief summary of post-emergence herbicides that can be used in summer crops to control winter weeds. Check the label on every herbicide for optimum recommendations with respect to dosages.


***Photo 4a and 4b: Tall fleabane (*Conyza *spp.) – in tuft form and in seed.***


***Photo 5: Devil's-thorn (*Emex australis*).***

***Article submitted by Elbé Hugo and Marlene van der Walt, ARC-Grain Crops, Potchefstroom, for SA Graan/Grain July 2016. For more information, send an email to HugoE@arc.agric.za or VDWaltM@arc.agric.za.***

# BROWN RUST OF SUNFLOWER: A potentially devastating disease

Brown rust is caused by the fungus Puccinia helianthi Schw., which is capable of causing yield losses in specific sunflower production areas of South Africa where the disease may reach epidemic proportions.

Severe infection of sunflower rust causes a decrease in seed size, head size, oil content and yield. Rust can occur anytime during the growing season as long as the environmental conditions are favourable.

Annual sunflower disease surveys conducted by the ARC-Grain Crops Institute (ARC-GCI) during the 2012/2013, 2013/2014, 2014/2015 and 2015/2016 seasons reported brown rust to occur in all major sunflower producing areas, particularly in the North West Province and Free State.

Severe symptoms of brown rust which can cause an estimated yield loss of between 10% and 40% in each field were observed in and around Bothaville, Ottosdal, Vredefort, Kroonstad, Rustenburg, Senekal and Lichtenburg during the 2015/2016 survey.


*Photo 1: Infected sunflower leaf showing brown urediospores and black teliospores on the underside of the leaf.*

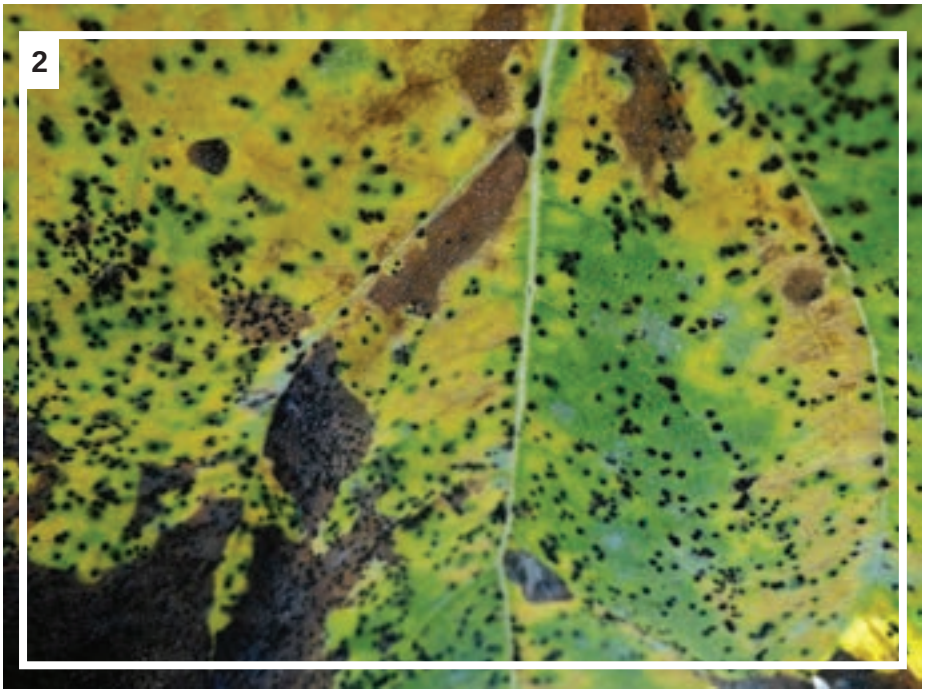



*Photo 2: Infected sunflower leaf showing aecial pustules on the upper side of the leaf.*

## Epidemiology of the disease

Rust overwinters as teliospores on plant debris and do not require an alternate host to complete its life cycle. These teliospores germinate in spring to produce basidiospores which infect volunteer sunflower seedlings.

This initial infection results in the formation of pycnia which in turn leads to the development of aecial pustules. The aecia produce aeciospores which spread by wind to other sunflower plants and will eventually produce uredinia.

Uredinia will then produce urediniospores which are disseminated by wind and can infect stems, bracts, petioles and leaves of sunflower plants. Conditions favourable for rust are warm temperatures (12°C - 29°C) and either rain/irrigation or dew.

In dry years, if night temperatures are low enough to promote dew formation on leaves, infection may occur. High nitrogen fertilisation and seeding rates results in excessive foliage, which increases humidity within the canopy and this favours rust development.

## Symptoms of the disease

Rust is characterised by cinnamon-coloured spots or uredial pustules, which primarily occur on the leaves but also on the stems, petioles, bracts and back of the sunflower head.

The uredial pustules on the underside of the leaf turn black with the advent of cool temperatures as the brown urediospores are replaced by black overwintering teliospores (**Photo 1**). The upper side of the leaf show aecial pustules alone or in clusters (**Photo 2**).

# Earthworms – inseparable part of soil interactions

Charles Darwin, famous for his work on natural selection, said the following about earthworms: It is doubtful whether many other animals have played so important a role in the history of the world as these humble organised creatures.

Earthworms make a particularly large contribution to the sustainable working of soil ecosystems. Through the functions they carry out in the soil, they indirectly influence other organisms, vegetation and people. That is why interactions with earthworms are extremely important to the functioning of soil systems.

## Soil system

Earthworms are called the engineers of the soil because of the physical, chemical and biological changes they bring about in a soil profile. These changes can influence the habitat and activities of other organisms in the soil eco system. Earthworms influence the soil eco system in various ways:

- By recycling dead plant material into compost (breaking down dung and plant residues to form organic matter in the soil) and recycling leaf waste in orchards and forests.
- By increasing nutrient availability. Firstly by taking organic matter deeper into the soil when burrowing, digesting this material and thus releasing nutrients to plant roots; secondly their casts (dung) are richer in nutrients than the surrounding soil.
- They improve the structure of the soil when they burrow looking for food. In this

***The compost earthworm,* Eisenia fetida *or* Eisenia andrei*, is mainly used to break down garden, farm and food waste to obtain a high-quality compost.***

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# Brown rust of sunflower: A potentially devastating disease

## Disease control

Planting rust-resistant hybrids reduces disease development, therefore farmers experiencing rust problems should look out for rust resistant hybrids available in the market. Crop rotation is important because it prevents disease build-up by interfering with the life cycle of the pathogen.

Reduced irrigation and nitrogen fertiliser application also minimise disease infection as these conditions favour disease development. Rust overwinters on volunteer sunflower plants, therefore destruction of volunteer plants occurring close to commercial fields early in spring reduces sources of primary inoculum.

Timely and proper application of registered fungicides (Triazole and Strobilurin) will limit new infections and prevent epidemics. Farmers are always advised to seek expert advice before applying fungicides and they should keep to the recommended label rate and time of application.

Farmers that observe brown rust symptoms in their sunflower fields are requested to contact the authors at 018 2996100 as we are always looking out for isolates to collect.

***Article submitted by Moses Ramusi and Bradley Flett, ARC-Grain Crops, Potchefstroom, for SA Graan/Grain July 2016. For more information, send an email to ramusim@arc.agric.za.***

# Earthworms – inseparable part of soil interactions

process they loosen the soil particles and also form tunnels in the upper soil layers. These tunnels then aerate the soil and drain rainwater from the surface.
- Earthworms contribute to crop production by improving the soil quality.
- They serve as food for predators, as birds as well as soil fauna feed on them.

## Soil micro-organisms

Soil micro-organisms are essential in soil for the following reasons:
- They play a key role in releasing nutrients from organic matter and making them available for absorption by plants.
- They are involved in breaking down and mineralising complex organic matter and can also break down human-made organic components to limit or prevent pollution.
- The well-known root fungus called mycorrhiza produces glomalin, a sticky substance that binds soil particles to form bigger and more stable aggregates. This is one of the major mechanisms protecting soil against wind and water erosion.

These important soil micro-organisms are more active in soils where earthworms are present. The reason for this is that their casts and tunnels, which are rich in available nutrients, generally contain bigger microbial populations and microbial biomass than the surrounding soil.

Earthworms can also promote microbial activity through their digestive processes, which allow high phosphatase activity in earthworm casts and consequently promotes the availability of phosphate to plants in the soil.

Earthworms also reduce the incidence of root diseases like root rot in wheat because they feed on the fungi that cause these diseases.

## Soil fauna

The influence of earthworms on the populations and activity of soil micro-fauna, namely protozoans and nematodes, has been widely studied. The movement of nematodes and protozoans in soil is limited as they require soil moisture to move.

The feeding activities of earthworms in the soil may affect these micro-fauna as they are displaced to different soil layers when, for example, the earthworms draw organic matter down into the soil.

It has been found that earthworms and protozoans have an important influence on each other. The presence of earthworms mainly promotes protozoan activity and biomass in the soil, and in turn protozoans are important in earthworms' diet, because they promote sexual maturity.

Nematode numbers in soil are considerably lower when earthworms are present. The reason for this is that they are ingested and digested together with plant residues and soil and thus removed from the soil.

## People

Earthworms help people in the following ways:
- As soon as earthworms are established in grazing stands, grazing productivity increases. This occurs by improving infiltration and the processing of dead plant material lying on the surface. In this way losses in material and nutrients through erosion are limited.
- They facilitate and accelerate the process of mine restoration: by increasing soil fertility and recycling wastes, they help to repair functioning ecosystems above and below the soil.
- Earthworms can be used in eco-toxicological tests to assess soil in terms of pollution.
- Vermicompost can be used to improve soil quality: Vermicomposting refers to the use of earthworms (the compost earthworm *Eisenia fetida* or *Eisenia andrei* is mainly used) to break down garden, farm and food waste to obtain a high quality compost.

## Conclusion

Earthworms fulfil many important roles in the soil. The role of these soil engineers is therefore inseparably linked to their interactions with other organisms, which can only be to the benefit of crop production systems.

***Article submitted by Charné Myburgh, LNR-Instituut vir Graangewasse, Potchefstroom, for SA Graan/Grain July 2016. For more information, send an email to vanCollerC@arc.agric.za.***

# New DEKALB® products for the next planting season

Monsanto's research focuses on improving the productivity of farmers, regardless of the size of their enterprise and their food production preferences.

'Monsanto is very proud of the new DEKALB® products available for the next planting season. These products are: DKC74-74BR and DKC74-26R; DKC71-44B and DKC71-42; DKC68-58BR and DKC68-56R; DKC62-52BR and DKC64-54BR; and DKC63-53', says Magda du Toit, Communication Manager, Monsanto South Africa.

## The DKC74 range

DKC74-26R and DKC74-74BR are recommended for the eastern and western maize production areas and have excellent yield potential, standability and grain quality.

### *Cultivar characteristics*

The DKC74 range germinates well and the seedling is strong with the plant emerging rapidly. Tillers form during the growing cycle, however, as the cultivar is well adapted to drier conditions, these tillers do not reduce the yield. A leafy hybrid, DKC74-74BR is very suitable for silage. High yield is the outstanding feature of this cultivar. It is a medium grower with agronomic traits that complement the existing DEKALB® package well. DKC74-26R has glyphosate tolerance with DKC74-74BR containing the YieldGard® II gene as well.

### *Strengths of the range*

New genetics, good grain quality, good standability, strongly prolific and high yield potential.

### *Management recommendation*

- The hybrid is suitable for a medium to low plant population.

## The DK68 range

DKC68-58BR and its family, DKC68-56R and DKC68-58B, have several characteristics adding to its popularity in the yellow maize market in South Africa. The cultivars are recommended in combination with the DKC73-74BR GEN, DKC80-40BR GEN, DKC74-74BR and the DKC71-44B family. These cultivars have an excellent yield potential and grain quality, as well as being prolific. The cultivar is recommended for the eastern and western production areas.

### *Cultivar characteristics*

The DKC68 range germinates very strongly and the plant emerges rapidly. The more rapid drying off of the DKC68 range, as well as in combination with the DKC71 range, place these cultivars in a suitable package for farmers who want to harvest early.

### *Strengths of the cultivar range*

New genetics, dries rapidly, good disease tolerance, prolific and good grain quality.

### *Management recommendations*

- Medium to high plant population with a maximum of 60 000 plants/ha.
- Increases normal plant population with 10%.
- Low ear placement.
- The same fertiliser as for DKC73 range.
- Dries rapidly after the plant reaches physiological maturity.

## The DKC71 range

These new cultivars, DKC71-44B and DKC71-42 are recommended in combination with the DKC73-74BR GEN and DKC80-40BR GEN and have an excellent yield potential, standability and grain quality. The cultivar is also suitable for production in the eastern and western areas.

### *Cultivar characteristics*

The DKC71 range germinates very well with strong seedlings. It dries rapidly which places the cultivar in a suitable package for producers who want to harvest early. The plants appear purple during emergence if cold nights occur.

### *Strengths of the range*

New genetics, dries rapidly, good disease tolerance, prolific, good standability, good grain quality, lighter grain colour.

### *Management recommendations*

- Medium to high plant population.
- Increases normal plant population with 10% - 15%.
- Good standability.
- Low ear placing.
- The same fertiliser as for DKC73 range.
- Dries rapidly after the plant reaches physiological maturity.

DKC63-53, DKC65-52BR and DKC64-54BR are ultra-short growing season cultivars that are specifically suitable for full irrigation, with a plant population of approximately 80 000 plants/ha.

Some of the other DEKALB® hybrids suitable for silage production, are: DKC80-10, DKC80-12B, DKC80-35BR, DKC 66-32B, DKC66-36R and DKC66-60BR, DKC73-72 as well as their biotechnological hybrids, namely DKC 73-70B, DKC 73-73R and DKC 73-74BR.

Keep in mind, in general a good grain maize should also be a good silage maize. Maize silage is very popular as it is considered to be one of the most effective conservation methods for all the nutrients on a maize field.

Furthermore, maize silage has a high energy value, especially when supplemented with maize grain, as well as being easily digestible. Additional benefits of maize silage compared to other stored roughage:

- It reduces fire hazard.
- It is available when other palatable animal feed is scarce.
- It has a long storage life provided it is stored properly.
- It can be used with great success in dairy and finishing rations.

With the planting season around the corner, now is the ideal time to contact your DEKALB® seed representative or broker to discuss last orders, or to consider new cultivars and seed treatments and how these could fit into your planning for the following season's planting.

> *Keep in mind, in general a good grain maize should also be a good silage maize.*

***Article submitted by Magda du Toit, Corporate Communication Manager, Monsanto South Africa. For more information, send an email to magda.du.toit@monsanto.com.***

# The rise of global soybean production

The soybean industry is beginning to place itself as one of the leading crops in the grain and oilseed industry. Soybean production is rising annually, matched with a rise in global demand.

The latest estimates by the USDA, indicate that world soybean production is likely to increase to 345 million tons in 2017/2018 season, which is a 10,1% increase in two years. In the World Agricultural Supply and Demand Estimates report (WASDE), the USDA indicate that the 2016/2017 soybean production is likely to have been the largest crop in a decade, currently sitting at an estimated 348 million tons.

The key drivers in the increasing soybean production are the United States of America (USA), Brazil and Argentina, who collectively contribute 81% to the global soybean production. USA alone is set to produce 45% share of the global production, meanwhile Brazil and Argentina account 31% and 17%, respectively. China, who is also among one of the largest soybean producers, has gained the status of the leading importer of soybeans. Soybean imports to China have shown an increasing trend over the years, and are expected to increase to 93 million tons in 2017/2018, compared to 82 million tons in 2015/2016 season.

> *"The latest estimates by the USDA, indicate that world soybean production is likely to increase to 345 million tons in 2017/2018 season, which is a 10,1% increase in two years.*

## Local production

Locally, soybean production is also on the rise. South Africa which is Africa's leading soybean producer managed to harvest 1,06 million tons of soybeans in the 2015/2016 season, which was considered a record crop. However, in the latest crop estimates reported by the Crop Estimate Committee (see **Table 1**), soybean production for the 2017/2018 season is estimated to reach 1,2 million tons, an increase of 66% from the 2016/2017 season.

It is worth noting that based on the estimated 2017/2018 record production of 1,2 million tons; South Africa would not require any imports, meanwhile, exports could increase by a marginal 4,5%. In this case, it is clear that South Africa is likely to move away from the status of a net importer of soybeans, given the emerging production trend.

> *"South Africa which is Africa's leading soybean producer managed to harvest 1,06 million tons of soybeans in the 2015/2016 season, which was considered a record crop.*

Based on the rising trend of soybean production, it is evident that global soybean supplies have expanded strongly in recent years and plantings are likely to trend up to new highs in years to come. World production is also expected to increase, underpinned by rising demand for high-protein meals.

***Article submitted by Michelle Mokone, Agricultural Economist: Grain SA. For more information, send an email to Michelle@grainsa.co.za.***

***Table 1: Area planted and third production forecast: 2017.***

| Crops | Area planted | 3rd Forecast | 2nd Forecast | Area planted | Final crop | % Change |
|---|---|---|---|---|---|---|
| | 2017 Ha | 2017 Tons | 2017 Tons | 2016 Ha | 2016 Tons | Δ |
| Soybeans | 573 950 | 1 233 130 | 1 162 425 | 502 800 | 742 000 | + 6,8 |

*Note: Estimate is for calendar year, e.g. production season 2016/2017 = 2017*
*Source: Crop Estimates Committee*

# The Corner Post

## SOLOMON MASANGO
### Assisting small farmers to grow

In this new series, *The Corner Post* will feature the mentors who form part of the Grain SA mentorship programme. A mentor is that person who gives you advice on how to achieve your own goals and dreams.

Although Solomon Masango from Carolina was only employed as a mentor for a period of four months – from October 2016 to February 2017 – the mentorship programme had a tremendous impact on his own life. 'I like farmers and love farming and therefore I want people to do the right thing when it comes to agricultural practices,' he shares. The changes he saw in the lives of these farmers as they became more successful meant he couldn't just walk away. After his contract expired he decided to stay involved and visits them as often as possible. 'I love being a mentor. When you teach others, you learn,' he says. 'If you see a problem someone else experiences, you can learn to avoid it!'

### Winning leads to losing

Solomon was the humble winner of the 2015 Grain SA/Absa/John Deere Financial New Era Commercial Farmer of the Year Award. He was also the first to receive a huge prize from sponsors John Deere Financial in partnership with Absa. Unfortunately, this prize, a John Deere 5403 48 kW tractor, led to a huge family dispute, which eventually saw him losing the land on which he had been farming for five years. After working hard to ensure fertile soil and producing good crops, the disagreement amongst the family made it impossible for him to continue farming there. However, he feels blessed that he has managed to find land to rent from neighbouring farmers – 150 ha from one farmer and 80 ha from another. Here he farms with maize, soya and sugar beans and also has some beef livestock. Although he has had to start over again, he admits that farming is his passion and no stumbling block can change that.

'The soil on this farm is rather acidic and not very fertile. On the previous land, I had worked hard for five years to build the soil to produce a good yield,' he shares. Where he had achieved a yield of about 3 t/ha on soybeans, he is now expecting only 500 kg/ha to 800 kg/ha this season. Fortunately, the outlook for the maize is more positive with a possibility of 6 t/ha tot 8 t/ha seeming feasible. 'Unfortunately, the price has fallen, so I am not sure how I will do. Times are tough now, but I know that hard work will produce results,' he says.

### Three steps to successful farming

To Solomon the three most important aspects of farming he tried to share with the group, are the following:

1. A farmer must know his soil, as the type of soil determines what can be planted. Take soil samples and have it analysed, know the pH of the soil and when to add fertiliser or lime. Soil is like a child. Just as a child can't grow without food, soil can not initiate growth if it doesn't receive nutrition. Solomon believes soil gives back what you put in. If you want your soil to deliver a good crop, you have to feed it.
2. You cannot plant just any kind of seed. You must know what you can expect from the kind of seed that you use. Make sure you know how labour intensive the process will be, how much diesel and fertiliser will be used and what yield you can expect. If you plant the wrong kind of seed, you will waste money.
3. Keep the fields clean. Weeds kill the crop. If you want to plant maize, there should just be maize on the land and no grass or weeds. Keep lands clean as dirty lands means lower yield.

> *"Keep the fields clean. Weeds kill the crop.*

After sharing this advice with a group of 32 small farmers in the Breyton area in Mpumalanga, he has had very positive reports from them. Excited farmers are sharing the news of an increase in their yield from 1 t/ha to 4 t/ha or even higher. 'My part was just to teach them to make sure their soil is ready before planting,' he says. Seeing the difference these improved production practices made on the yield obtained by these farmers has given him hope and made him more positive about the future of his own new venture.

Solomon was so enthusiastic about his role as mentor that he even utilised his own tractor and implements to help with the soil preparation on their land. 'It was great to help grow small farmers and as they had no implements and I had received mine as a gift, I had to share it with them,' he says. He says once you share in the success of the group you are mentoring, you want to continue being involved in the process. 'I was taught and now I want to teach,' he adds enthusiastically.

Following his own advice, he should be able to build up his new farming enterprise and reach his previous high standard again within a few years. As one of America's previous presidents, Lyndon Baines Johnson said, 'Yesterday is not ours to recover, but tomorrow is ours to win or lose.'

***This month's edition of The Corner Post was written by Louise Kunz, Pula Imvula contributor. For more information, send an email to louise@infoworks.biz.***




## CULTIVARS

### Yellow maize

- SNK2778
- DKC68-56R
- DKC71-42
- DKC71-44B
- DKC73-72
- DKC73-76R
- DKC73-74BR GEN
- DKC80-30R
- DKC80-40BR GEN

### White maize

- CG4141
- DK8031
- DKC2147
- CRN3505
- DKC78-17B
- DKC78-35R
- DKC78-45BR GEN
- DKC78-87B
- DKC78-83R

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