

CROP CIRCULAR

ISSUE 12
2021



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CONTRIBUTE

We are always looking for news, photographs or event updates from our members.

Please forward your contributions to elriza@croplife.co.za

WELCOME

Wow – it is hard to believe that 2021 has basically run its course and we are all filling up our calendars for 2022 already! A few months back, because of all the challenges and curveballs our industry members had to face, it seemed as if this was turning into the ‘longest’ year on record, yet here we are, only a few days away from 2022.

As I reflect on 2021, I am drawn back to the four foundation pillars that the CropLife SA Executive Council established for the association during the restructuring process of 2018, namely:

- Stewardship
- Government liaison and regulatory affairs
- Education, training and skills development
- Communication, brand and image building

Stewardship remains critical to the future of the industry as it provides not only a framework for product management from active ingredient discovery, all the way to end of life actions with empty pesticide containers, but also a guideline on how players in our industry need to operate in order to maintain societal acceptance.

‘Doing the right thing’ has never been more important for our industry, because, with the ease of access to information that social media and other less formal communication methods bring, any person with internet access can easily see what our industry does and how it behaves. Unfortunately, pseudoscience and false news sometimes cloud the waters, but that is why it is imperative that all industry players embrace the concept of stewardship in its widest form and behave accordingly.

Our regulatory environment continues to be a challenge and even though we have not yet secured major improvements in the current regulatory process, this matter takes a huge amount of CropLife SA resources. Seeing as having a local registration to market and sell a plant protection solution is our industry’s ‘right to operate’, it is only reasonable that so much time and effort is dedicated to this subject. Even though we have not yet had a headline win, I can assure all our members that huge progress is being made behind the scenes and often CropLife SA members do not get to see exactly what goes into the interaction with government in this regard.

Education, training and skills development also takes association resources, and the CropLife SA team strives to find ways of working smarter in this area too. During 2021, the Continuous Professional Development programme for the industry’s sales force moved to a new platform and early in 2022, the Basic Crop Protection course will also move to this new platform that allows for so much more to be done in terms of course content, level of course content and flexibility in participation. The CropLife SA team is extremely excited to be working with the Training Committee of your Executive Council to establish new modules for the CPD programme. In time, these will become increasingly technical to attract more industry players to participate, and in so doing, meet the strategic intent of ExCo, namely, to continually raise the bar with technical knowledge throughout our member organisations.

Closely linked to ‘doing the right thing’ mentioned above, promoting the industry success stories to support our industry’s stewardship efforts has been a key focus during 2021 and many great infographics, stories and video clips have been created. I urge all members to regularly scan social media, formal media and the CropLife SA website for this material and remember, the CropLife SA team welcomes suggestions for new material and even better, submissions from our members.



Rod Bell
Chief Executive Officer
CropLife South Africa

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It is a cliché, but very true nonetheless - any industry association is only as good as what its members make it. In this regard, the CropLife SA team would like to quite sincerely thank all the industry players who have contributed to the association, and therefore the greater industry, during 2021. Participating in various forums and action committees takes time and commitment and above all, these efforts are in addition to your 'day job', therefore please accept our sincere gratitude.

In closing I wish you all a wonderful year-end period with your families and trust that 2022 brings health and success to you all.

Agri-Intel updates

Chana-Lee White
Agri-Intel Manager

Annual renewals

Agri-Intel users who registered in November and December 2020 would have received an email from the system regarding a renewal. This mail is sent out 14 days before the subscription for a user expires.

As access to Agri-Intel is on an annual subscription, the user's profile would need to be renewed when this email has been received, which would be in the month that the user registered on the website. The user then has the option to renew their membership for the following year and update their details accordingly by logging into the website and updating the profile under "User Profile". Please retain your work email address for verification purposes. The system then sends the Agri-Intel team a notification once a renewal has been received and then the access date can be extended. The user will not be able to gain access to the website until that access date has been processed should the renewal period have lapsed. If the user does not wish to renew, then no action is required.

Agri-Intel training

Training sessions on how to use the Agri-Intel website have been held virtually over the past two years for Agri-Intel users, and while these have been very successful, it does have restrictions in terms of scheduling and number of participants. Therefore, we have now made training videos available on the website in the "Industry resources and training" section. These videos can be accessed at any time, on any device, and are available should you require assistance in navigating the Agri-Intel website. The videos are also accessible on the CropLife SA member portal and YouTube channel.

Agri-Intel terms and conditions

Please be aware that there are analytical features in place that are able to track downloads from the website. We are aware of certain users breaching the terms and conditions of the website.

Just a reminder that when signing on to Agri-Intel you are agreeing to the terms and conditions which are indicated on the login page:

- Please read the terms and conditions, which may change from time to time. Login to this site constitutes the automatic acceptance thereof.
- The information displayed on this website may only be used for personal purposes and should only be used as a guideline.
- Data contained on this website may not be incorporated into any third-party programs, applications, databases, publications or websites in any form whatsoever.
- Data may not be used for commercial gain or sold to third parties in whatever form.

Please note that if information is required to be shared with third parties or incorporated into any programs, please contact the Agri-Intel team for more information. Access to Agri-Intel data for non-personal use can be arranged for a fee if certain conditions are met. It should also be noted that each individual should have their own login details to access the website as sharing of individual login credentials with others is not permitted.

New platform for the Basic Crop Protection course

We are excited to announce that the Basic Crop Protection course will be hosted on a new platform from 2022. This platform will allow for a variety of new functionalities, such as any time registrations, completing the course in your own time (with a one-year limit) and automatic certificate generation. Although we know that many people are eager to register for 2022, we must ensure that the system is fully functional before we can launch it, therefore please bear with us as we make our way through the testing phase.

This is a time-consuming process, but we are hoping to have everything up and running by latest March 2022. Remember, once it is launched you can register at any time throughout the year and complete the course as quickly as you want to, so you will be able to get your qualification when you need it.

The moment the system is ready, we will send an email to all our newsletter subscribers with the registration link, which will also be available on our website.

Out and about

November was a busy month for the CropLife SA team, starting with the Agricultural Writers of South Africa's National Award evening. CropLife SA sponsors an award each year for the best articles in two respective categories, crop protection and plant biotechnology.

The main reason for our involvement is not only to show our appreciation to those journalists who go the extra mile when writing about topics pertaining to our industry, but also to motivate others who might not be too familiar with those topics, to get involved.

A huge congratulations to this year's winners:

- **Plant Biotechnology** - Lindi Botha for her article "Genetic-based crop breeding: The key to food security"
- **Crop Protection** - Elise-Marie Steenkamp for her article "Integrated Pest Management: Are we there yet?"



Thank you to all the journalists who strive to publish information that is accurate, relevant and educational, so that our farmers can reap the rewards that these technologies offer and continue to produce food safely and sustainably.

A few days after the event, we met up with the Brand Republic team to film a video that showcases the container management process, from triple rinsing on the farm, to the end product made from the recycled plastic. First, we visited Walter Jordaan at MyPlas to see how the containers are received, inspected, and then processed into tiny little plastic chips that are suitable for use by the plastic product manufacturers, a very interesting process to witness. Next we were welcomed at the Tuffy plant and shown how the plastic chips are transformed into black waste bags, and afterward we visited a plant where they manufacture a variety of plastic products, such as toy motorbikes, camping tables and plastic chairs. It is phenomenal how intricate these processes are, yet the operations run seamlessly.

The next day the team joined Danie Dreyer from Dealco on Hoogstede farm in Paarl to see how the containers are managed on farm level and then collected by Dealco to go to the recycling facility.

It was truly wonderful to see how the principles of stewardship were embraced by everyone involved, from spray operator, farm manager and farm owner to collector and recycler and a sincere thank you to everyone who gave their time to help is in this production. We are very excited to share the video with our stakeholders at our conference in March 2022 in anticipation of our Extended Producer Responsibility programme launch next year.



Update - SA's regulatory approach for new breeding techniques (NBTs)

Almost a year ago this newsletter featured an article on genome editing that provided insights on what the technology is, its utility to accelerate the plant breeding process for a diverse number of crops and traits and ability to deliver benefits to both farmers and consumers in terms of sustainable food production and access to better products.

Chantel Arendse
Lead: Plant Biotechnology

You may vaguely recall that South Africa's regulatory status on genome editing was at that time not determined. Fast forward to October 2021, and the regulatory situation for genome edited products has subsequently changed. On 27 October, a public notice issued by the Department of Agriculture, Land Reform and Rural Development confirmed that the risk assessment framework that exists for GMOs under the Genetically Modified Organisms Act, 15 of 1997 (GMO Act), would apply to all products derived from new breeding techniques (NBTs).

To be clear, genome editing, alternatively called new breeding techniques (NBTs) or plant breeding innovations (PBIs - and several other iterations), represents a group of diverse and evolving technologies developed in the past two decades to complement present day plant breeding and allows breeders to achieve crop improvement objectives in a more precise, cost effective and efficient manner. The difference, however, is that products derived from genome editing are in most cases free of foreign DNA, therefore not suited to regulation as GMOs as they are more comparable to products resulting from traditional breeding methods.

As an industry organisation, we strongly believe that regulation of products derived from genome editing should follow a differentiated pathway that is science-based and commensurate with potential food and environmental safety concerns of such products. The South African decision regarding the regulation of genome editing is therefore unfortunate, and threatens the ability of farmers, consumers and the broader agricultural value chain to capitalise on the opportunities and benefits that these new technologies bring to agriculture.

As farmers face off against unprecedented challenges in the wake of erratic weather and natural disasters due to climate change, environmental impacts, resource constraints and increasing disease and pest pressure, it will require access to all available plant science innovations, including genome editing to overcome these challenges. While these challenges are not insurmountable, regulatory systems that preside over agricultural innovations, need to be adaptable and future proofed to embrace technology solutions, without compromising on safety, ensuring that the country's food security and sustainability goals can be met and that our agricultural sector remains competitive and continues to thrive.

Collaboration is key to bringing technology to farmers in Limpopo

On the 28th of October 2021, the Limpopo Department of Agriculture and Rural Development (LDARD), Directorate for Crop Research Services, hosted a farmer information day at the Tshiombo Research Station in Mianzwi Village. The information day showcased the performance of maize demonstration trials planted with biotech varieties with stacked and single insect resistant and herbicide tolerant traits. The event was well supported with close to 100 participants in attendance, representing farmers from the surrounding community and agronomy students from the nearby Madzivhandila Agriculture Training College.

This successful event was the culmination of an initiative facilitated by CropLife SA, the Limpopo Department of Agriculture and Bayer Crop Science at the beginning of 2021. Through collaborative discussions, commitments were made for the sharing of agricultural inputs (seed and agrochemicals), labour and technical expertise to support the implementation of biotech maize demonstration trials. Despite delays due to inclement weather and Covid-19 challenges, implementation of the demonstration trial went ahead in mid-May this year, thanks to the outstanding efforts of 12 female farmers from the nearby Maraxwe Irrigation scheme who took on the responsibility for planting and overall maintenance of the trial. Kudos to our female farmers!

Considering that maize production areas in Limpopo were hit hard by the emergence of Fall Armyworm (FAW) in South Africa in 2017, the information day provided an appropriate opportunity to educate and raise awareness on how biotech seed technology can be used for responsible management of insect pests, such as FAW and maize stalk borer (*Busseola fusca*) within an integrated pest management system. Thus, ensuring that Limpopo farmers are equipped with accurate information to make the right choices about technology that could help them maximise their production yields and improve livelihoods.

The Plant Biotech desks wishes to thank Rodney Ndou (Bayer Crop Science) and Godwin Khorommbi (Directorate: Crop Protection Services, LDARD) for their collaboration and continued support.



Save the date

Join us for the CropLife South Africa **AGM and Conference 2022**

Date: 29 – 31 March 2022

Venue: It will be a hybrid event with the option to attend remotely or in person. Physical venue details will be confirmed.

Programme: to be confirmed.

Crop advisers who attend the conference will be awarded CPD points accordingly.

The future of crop protection lies in IPM

Since the dawn of agriculture, farmers have been dealing with the challenges of managing insects, weeds and diseases that threaten our ability to produce enough safe and healthy food for the population.

Elriza Theron
AgriAbout - October

Thankfully the strategies to control pests have evolved over the years and continue to do so. New technologies and innovations have enabled, for instance, a reduction in the amount of pesticide needed to address a specific problem, from kilograms per hectare in the 1960s to grams per hectare in certain instances today. And as these technologies progress, so do our agricultural practices in order to keep up with the global food demand, while considering societal expectations as well.

The future of pest control undoubtably lies within the domain of integrated pest management (IPM), meaning that we need to focus on managing pests effectively rather than just eliminating them. The first step in doing this is to grow a healthy crop that is more able to withstand the effects of pests than a weak or stressed crop. Many people believe that IPM means using different types of pesticides such as biologicals alongside synthetic pesticides, but IPM actually means using any and all suitable techniques or strategies to keep pests below levels that cause unacceptable crop loss.

These different strategies could include mechanical or physical, cultural, biological, and chemical methods of pest management, as well as biotechnology. The choice of which pest management method to employ will depend on the crop and pest situation, as well as the availability of resources. This means that pesticides are applied only when absolutely necessary, and only in quantities that are required and that are approved for use.

The benefits of IPM are numerous, for instance the use of inputs is optimised, crop losses are reduced, biodiversity is maintained, crop production is sustainable and, importantly, pest resistance to crop protection solutions is managed. But it must be kept in mind that IPM is not a set package to be incorporated in the same way on each and every farm, rather it is location and condition specific, sometimes even down to the field level or crop growth stage.

Proper and regular inspections are fundamental to IPM. Early detection of any pest, weed or disease gives the farmer an opportunity to investigate alternative, less harsh methods of crop protection than if the pest, weed or disease has already grown to devastating populations. It also provides a farmer with intel because the information regarding threshold values for damage, and the life cycle of the insect, weed or disease, can be compared with previous seasons to determine the risk associated with the occurrence of the pest.

Integrated disease management

Cultural control methods aim to help plants avoid contact with a pathogen and to eradicate or reduce the amount of pathogen in a field or area.

Examples of cultural control methods include crop rotation, sanitation and creating unfavourable conditions for the pathogen. Biological control methods aim to improve the resistance of the host or favour micro-organisms antagonistic to the pathogen. Examples include suppressive soils and trap plants.

Physical methods of control on the other hand aim to protect the host from pathogens by using methods such as heat treatment (soil sterilisation by heat, hot water treatment of propagation material or hot air treatments), drying of products, refrigeration or radiation.

Chemical control methods include soil treatment, fumigation, disinfection of warehouses and packhouses and control of insect vectors.

Integrated weed management

For optimal weed control, it is beneficial to understand the biological properties of various weeds because this can assist in understanding which herbicides, if any, would be best suited for the purpose. Other than chemical weed control, organisms like bacteria, viruses, fungi and insects can also be used for biological control of weeds.

Mechanical control methods have changed considerably, especially with the advent of minimum and no-till cultivation practices. Although these practices bring about many benefits to the environment, they also pose some challenges with regard to weed control, such as requiring increased herbicide use. The smart thing to do in an IPM programme is to incorporate ploughing every once in a while, even if it's only every four years or so, which will still maintain the no-till cultivation practice.

Biotechnology in the form of herbicide tolerant crops is another vital tool available to farmers in the IPM package, especially in the fight against resistance.

Integrated insect management

There are a variety of chemical and non-chemical insect management methods available to ensure the effective incorporation of IPM.

Some of the natural processes include the use of natural predators such as beneficial insects and nematodes in the pest management programme.

Other options include deploying *Bacillus* bacteria as a biological control agent, incorporating natural insecticides such as azadirachtin from neem oil, or using pheromones to disrupt mating.

As mentioned, mechanical control is not a matter of simple year-on-year ploughing anymore, however, incorporating the practice selectively as part of an IPM strategy could assist in burying unwanted pests such as stalk borer or host plants for insects.

Other agricultural practices to consider are crop rotation, mixed cultivation, strip cropping or establishing trap crops. Plant biotechnology also offers insect resistant technologies such as Bt-maize, which has the advantage of reducing the use of certain chemical control measures.

When using any form of chemical crop protection product, it is of utmost importance that the label directions are followed to a tee.

Not only is the label the only legal “adviser” of the product, but it contains essential information for resistance management to ensure that these products remain effective and can be available as a crop protection solution well into the future.

Although only a few examples were mentioned, it is clear that there are many possibilities available for farmers to effectively incorporate IPM into their agricultural production.

No single technology will be the answer to meeting the growing food demand in a sustainable manner, however, at the rate of agricultural innovation, the available options of scientifically sound pest control methods are increasing exponentially, to the benefit of producers, consumers and the environment. It is up to us to use it effectively.

Resistance management in the control of potato tuber moth in potato production

Insecticide resistance is the phenomenon whereby insect populations evolve to become less responsive to insecticides (also called sensitivity shift), and can no longer be controlled by the dosage of insecticide normally used to provide effective control. A sensitivity shift that leads to resistance, develops through mutations in the genetic coding of the insect.

Principal author: Roleen la Grange
Contributors: Desireé van Heerden,
Dr Fienie Niederwieser and
Dr Gerhard Verdoorn
CHIPS – Nov 2021

Mutations usually occur randomly, with most of the mutations having no impact on the insect's physiology or biochemistry. However, on occasion, a mutation confers resistance to an insecticide, resulting in a competitive advantage for the insect and its offspring if the same insecticide is used repeatedly.

When insecticides with different modes of action (MoAs) are not rotated or used interchangeably, insects that carry the resistance mutation will survive and become more representative within the population, increasing the pace of sensitivity shifts and ultimately resulting in an entire population developing resistance within a few generations.

Pest management and MoAs

To stop insects with resistance mutations from becoming dominant in the population, insecticides with different MoAs should be alternated in sequence or rotated to ensure that consecutive pest generations are not exposed to insecticides with the same MoA. This will decrease selection pressure on these insecticides and slow the pace of sensitivity shifts significantly. However, cross-resistance may occur when resistance to one insecticide confers resistance to another, even when the insect has not been exposed to the latter product.

The Insecticide Resistance Action Committee (IRAC) categorises insecticides into groups according to their MoA. These groups are easy to find on the IRAC website (www.irac.com) or the IRAC application for smart devices. This is a valuable tool for producers and crop advisors to understand the different groups and their respective MoAs.

The pest management practices required to delay the pace of sensitivity shifts and resistance development, are as follows:

- Identify the MoA of the insecticide used and alternate with insecticides that have a different MoA. In South Africa, the MoA of the insecticide is displayed on the front panel of the label, for example: Group 1A. In this example, the compound falls within MoA Group 1 (acetylcholinesterase inhibitors) and in sub-group A (carbamates). Sub-groups represent distinct classes of insecticides that have the same MoA but are different in structure or mode of interaction with the target protein. This sub-categorisation differentiates between closely related insecticides and reduces selection for either the metabolic or target site cross resistance. The cross-resistance potential between sub-groups is much higher than between groups, thus rotation between sub-groups should be avoided.
- Apply insecticides during the correct application windows to avoid consecutive pest generations being exposed to the same MoA. An application window refers to a period of residual activity provided by a single application, or several applications of the same MoA applied in sequence, generally coinciding with the timeframe of one pest generation (approximately 30 days, depending on local conditions).
- Multiple successive applications of the same MoA are acceptable when treating a single insect generation.
- Following a treatment window, rotate to a different window of application with a different MoA.

- Never apply insecticides at reduced or higher dosage rates or reduced water volumes. Apply insecticides only at the label-instructed timing and dosage.
- When making use of insecticide mixtures according to label instructions, always apply active ingredients at their individually registered dosage rates.

Practical guidelines

To reduce the number of insecticidal treatments required and optimise application timing, pest populations should be monitored throughout the season by means of regular scouting, which includes using pheromone traps.

If weather conditions are conducive to high pest populations, the shortest spray interval and the highest recommended rates on the label should be used. Systemic and translaminar pesticides (such as cyantraniliprole or acetamiprid) should only be used at the beginning of the season, when plants are actively growing, to allow the chemicals to sufficiently translocate within the potato plants.

When developing a spray programme for the control of potato tuber moth specifically, ensure that chemicals with the same MoA are not repeated in the programme for the control of a different pest on potato crops, especially if the presence of these species overlap (e.g., potato leafminer).

Where two pests are present simultaneously, the higher recommended rate for the pest that is more difficult to control, should be used. Similarly, if other crops in the vicinity are also hosts of potato tuber moth (e.g., tomatoes), ensure that the spray programmes are aligned in terms of the MoA applied against a specific generation of the pest.

In South Africa, approximately 26 different active ingredients representing twelve different MoAs are registered for the control of potato tuber moth on potatoes, providing adequate variety for insecticidal rotation during and between seasons.

When making use of agrochemicals, good agricultural practices should always be followed. This includes using spray equipment that is properly calibrated and in good working order, only using spray equipment and application methods as stipulated on the product label, ensuring good penetration into the crop canopy and sufficient wetting of the leaf surface by using a registered surfactant for optimal coverage (if recommended as such on the label), and not spraying during unfavourable conditions (e.g. during the hottest time of the day or in windy conditions).

Integrated pest management

Minimising selection pressures and delaying the onset of resistance for insecticides can also be achieved by making use of integrated pest management, which considers all available techniques to reduce pest populations. These methods include crop rotation, cultivar selection, planting of genetically modified crops (which are not currently available in potatoes), monitoring pest populations, biological control, releasing sterile insects, and mating disruption. When chemicals are used, they should always be used selectively and as part of an integrated resistance management programme.

This article is Monograph 4 of the Potato Production Stewardship Programme – a collaborative initiative of Potatoes South Africa, CropLife South Africa, and the Insecticide Resistance Action Committee. For more information, contact Dr Gerhard Verdoorn at gerhard@CropLife.co.za.



Die wonder en euwels van plastiek

Dr Gerhard Verdoorn
SA Graan
November 2021

Wie sal ooit die eerste plastieksak vergeet nadat ons gewoon was aan koerantpapier en bruinpapiersakke vir kruideniersware? Dit het die wêreld soos 'n storm getref, maar die skade is eers veertig jaar later ontdek toe die mens se algemene omgewingsbewustheid deur aktiviste aangewakker is.

Strande vol kleurvolle plastieksakke, seevoëls waarvan die ingewande met plastiekstukkies verstop is, plastieksakke in seeskilpaaie en selfs plastiekrommel wat orals oor die land rondwaai, is maar net van die nagevolge van die wanbestuur van een van die mens se maaksels. Tog is die wêreld waarin ons leef ondenkbaar sonder plastiek: Ons gebruik dit vir koeldrankbottels, medisyne, kosmetiese middels, stoorgewone vir vars en verwerkte kos en natuurlik ook as verpakking vir plaagdoders en saad. Dit is handig, sterk, lig en relatief goedkoop, maar dit kan die aarde erg besoedel as dit nie korrek bestuur word nie.

Moet ons dan as gevolg daarvan wegdoen met plastiek plaagdoderhouers en saadsakke en weer van die ou staaldromme en dik papiersakke gebruik maak? Nee, dit is onnodig, want feitlik alle plastiek wat vir plaagdoderverpakking en saadsakke gebruik word, is herwinbaar en kan soveel as sewe keer weer in die vervaardiging van ander kommoditeite gebruik word. Ons moet net die landbousektor se aandag trek en almal oortuig om plase skoon te maak van alle oorskotplastiek, insluitend besproeiingspype, skadunette, plaagdoderverpakkings, saadsakke, kratte en ander plastiekware.

Gevare en risiko's van leë plaagdoderverpakkings

Alle plaagdoderetikette het gevaarsimbole in die kleurbande wat aandui hoe giftig en gevaarlik die plaagdoder vir mense is. Dit is egter nie van toepassing op plaagdoderverpakkings wat op 'n standaardwyse gereinig is nie. 'n Standaardmetode beteken 'n wyse wat reeds op die proef gestel is om te bewys dat die verpakkings nominaal skoon is, met ander woorde dat daar baie min of geen skadelose plaagdoderresidue in die verpakkings oor is nadat dit gereinig is nie.

CropLife SA se standaardpraktyk van drie maal spoel is alreeds uiters goed gevestig en is bewys as die metode om enige plaagdoderverpakking 99,997% skoon te maak. Die SABS se nasionale standaard SANS 10402 bevestig dat sulke gereinigde verpakkings nominaal skoon is en nie as gevaarhoudende stowwe geklassifiseer word nie. Dit is dus moontlik vir insamelaars en verwerkers van plastiek om drie maal gespoelde verpakkings te vervoer en te verwerk sonder om aan die vereistes van die Nasionale Padverkeerswet, 1996 (Wet Nr. 93 van 1996) te voldoen. Verwerkers moet egter by hul provinsiale owerhede vir afvalbestuurlisensiering aanklop en sodoende aan die afvalbestuurswetgewing voldoen.

Die gevare van leë plaagdoderverpakking wat nie drie maal gespoel is nie, is legio. Dit hou 'n ernstige risiko in vir mense wat sulke houers as bergingshouers vir drinkwater of eetgoed gebruik. Daar is al verskeie gevalle aangeteken waar hele families gesterf het nadat hul kookolie of drinkwater met plaagdoders in sulke ongespoelde houers besoedel is. Ongespoelde leë houers kan ook die fisiese omgewing soos grond en water met plaagdoderkonentraat besoedel.

Een van die grootste euwels is wanneer sulke houers op plase verbrand word, want dit stel giftige gasse en soms selfs dioksiene vry, wat kankerwekkende stowwe is. 'n Drie maal gespoelde houer se risiko vir die mens en omgewing is dus uiters skraal, terwyl dié van 'n ongespoelde houer baie hoog is. Die hoëdigtheidpoliëteleen (HDPE) waarvan die meeste plaagdoderhouers gemaak word, is goud werd vir verwerkers en behoort dus in die siklus van plastiekverwerking teruggeplaas te word.

Leë saadsakke van behandelde saad is ook riskant vir mens en dier omdat dit soms plaagdoderresidue bevat, maar merendeels omdat die polipropileenplastiek maklik verkrummel en mikroplastiek word. Saadsakke kan gewoon omgedop word en vir dertig sekondes met water skoongespuut word. Sulke sakke is nominaal skoon (ek het self die proewe gedoen!) en is gesog by herwinners en verwerkers.

Dienste wat CropLife SA-gesertifiseerde verwerkers verskaf

Daar is alreeds 120 CropLife SA-gesertifiseerde verwerkers wat by die netwerk ingeskakel is en aan die insameling en verwerking van plastiekhouders en saadsakke deelneem. Sommige het hul eie persele waar produsente drie maal gespoelde verpakings kan gaan aflaai, terwyl ander die verpakings op plase gaan afhaal. Elke keer wanneer 'n produsent die skoon verpakking aan 'n CropLife SA-gesertifiseerde verwerker oorhandig, moet die verwerker die CoDi Intel-verklaring voltooi en aan die produsent uitreik. Verskeie van die verwerkers sal ook ander plastiekmateriaal in ontvangs neem, soos byvoorbeeld besproeiingspype.

Haakplekke met herwinning van plaagdoderverpakking

Alhoewel daar reeds 120 CropLife SA-gesertifiseerde verwerkers in Suid-Afrika is, is daar steeds areas waar produsente sukkel om van leë verpakings ontslae te raak.

CropLife SA streef daarna om sulke areas ook met versamelpunte te bedien en behoort teen die einde van die jaar nog tien ekstra versamelpunte gereed te hê. Daar is egter 'n verantwoordelikheid by produsente om die verpakings te reinig en aan versamelaars en verwerkers beskikbaar te stel.



Soms kry ons pynigende beeldmateriaal waar berge plastiekhouders verbrand word; al wat dit beteken is dat so 'n produsent iemand anders die geleentheid om besigheid te doen, ontsê. Gelukkig is daar ligpunte, soos die nuwe regulasies vir die herwinning van plaagdoderverpakking wat teen Maart 2022 in werking tree. Die mandaat wat CropLife SA dan volgens wetgewing sal hê, sal genoegsaam wees om sulke wandade te verhoed. Dit behoort elke produsent se missie te wees om sy plaas vry van plaagdoderverpakking te hou.

Saadsakke is nog 'n knelpunt, want die persentasie herwinning is bitter min. Ons wil produsente aanmoedig om te begin met die proses om saadsakke skoon te spoel, te baal en dan aan versamelaars en verwerkers te oorhandig. Dit reinig nie alleen die plaas nie, maar verskaf inkomste aan iemand en sorg vir 'n veiliger omgewing vir die wilde diere en voëls van die veld.

Sukses met 'n toekomsvisie

In die moeilike jaar van 2020 is meer as 76% van alle HDPE plaagdoderhouders ingesamel. Sommige mense reken dit is 'n besonder goeie poging, maar CropLife SA wil graag teen die einde van 2022 die 90%-kerf bereik. Daarmee saam wil ons saadsakke ernstig takel en insamel, terwyl sekondêre verpakings soos kartondose ook alles ingesamel moet word. Die sukses van 2020 is te danke aan die voorbeeldige werk van al 120 CropLife SA-gesertifiseerde verwerkers asook produsente. As ons egter die doel van 90%-herwinning oor net meer as 'n jaar wil bereik, sal ons almal moet hande vat en die herwinning van plaagdoderverpakking as 'n saak van erns bejeën.

Sodra die nuwe regulasies in 2022 in werking tree, sal CropLife SA met 'n verbeterde poging die herwinning van alle verpakking takel sodat Suid-Afrika kan meeding met Brasilië en Australië wat ons nog effens voor is. Die Departement van Omgewingsake, Bosbou en Visserie het CropLife SA die mandaat gegee om 'n deel van die regulasies te skryf en ons wil graag die teikens wat ons daarin gestel het, so vinnig as moontlik bereik. Dit is slegs moontlik as alle produsente saamwerk.

Ons doen 'n beroep op alle produsente om te help om die land se plase skoon te maak – dit is die regte ding om te doen! Lees meer oor die riglyne en die lys van 120 CropLife SA-gesertifiseerde verwerkers by <https://croplife.co.za/container-management/>. Enige navrae kan gestuur word na gerhard@croplife.co.za of 082 446 8946.

Wie gaan die werk doen?

Uit die perspektief van die produsent behoort die spuitoperator op die plaas een van die mees gesogte werknemers te wees, juis omdat hy die gewas met sy werk beskerm. Dit is vir CropLife SA uiters bemoedigend om te sien met welke entoesiasme plaaswerkers, insluitend spuitoperators, die opleiding oor die verantwoordelike aanwending van plaagdoders hanteer.

Lei die spuitoperators vinnig op om die leë verpakings drie maal te spoel en veilig te berg sodat dit in die verwerkingsnetwerk opgeneem kan word. Ons ervaring is dat sulke spuitoperators hulle taak met sorg verrig en baie trots daarop is. Daarsonder sit produsente met die hande in die hare en gevaarlike afval wat die omgewing besoedel. Met goed ingeligte en opgeleide spuitoperators kan die produsent se gemoed kalmer wees en die plaas skoon. Die verwerkers sal met graagte sulke houers oorneem, dus is die proses nie meer 'n las vir die produsent nie.

Daar is ook duisende nuwe opkomende boere wat leë houers het en CropLife SA is besig met planne om ook vir hulle versamelpunte vir hul houers te skep. Sulke versamelpunte sal heel waarskynlik deur jong entrepreneurs in hul areas geskep en bedryf word, tot voordeel van die boere wat die land van voedsel help voorsien.

Opwindende ontwikkelings

Die moontlikheid is groot dat vervaardigers van plaagdoderhouers van die verwerkte plastiek sal gebruik om nuwe houers plaaslik te vervaardig. Die eerste proewe is reeds gedoen en dit lyk werklik belowend. Teen die middel van 2022 sal ons sekerlik al 'n hele paar duisend sulke nuwe houers met verwerkte plastiek in die mark sien. Wees op die uitkyk, want hier kom 'n ding!

The threat of unregistered biological plant protection products

Humankind is slowly moving towards greener living which should

Dr Gerhard Verdoorn
AgriAbout - November

be more compatible with the natural environment. Fossil fuels are being frowned upon, agricultural production by conventional methods is no longer the flavour of the month and pressure is mounting against “chemicals”, while very few people realise that the Universe is one enormous chemical factory.

There is nothing that is not chemistry. Protagonists of a “greener world” want all “chemical pesticides” to be replaced by natural and biological pesticides. It sounds great, but those very individuals express their ignorance by preaching that natural and biological is safer than chemical and man-made.

Fact is that many of the current chemical pesticides that are widely used are synthesised by none other than Mother Nature. Humankind developed technology to benefit such substances from plants, yeasts, bacteria and fungi for plant protection. The question is, where do they fit into plant protection? How effective are they? And do they need some form of regulation?

Efficacy, safety and regulatory requirements

There is a very bold tendency in the biological and natural pesticide arena to claim super efficacy against a wide range of target organisms.

The truth is that biological pesticides are effective when applied within a particular set of climatic conditions. When these conditions are not optimal, they reduce the efficacy of the substances, often to disappointing levels which leads to a distrust in biological and natural plant protection products.

A factor that plays a very important role in the performance of biological and natural plant protection products is the quality of the products. The quality is determined by the strain of the live organism, its purity and the matrix or formulation in which it is offered. It is very easy to make a claim about an organism's efficacy, but a totally different story to prove its quality. The same goes for natural chemicals that are marketed as plant protection products. There are various factors, summarised below, to consider when working with natural and biological plant protection products.

The species, sub-species and strain of the organism

Many of the biological products that are currently registered as plant protection products are selected from a range of sub-species and most often a particular variety or strain of that sub-species. This is a critically important aspect because biological organisms produce their own endotoxins that kill the target organisms.

The purity of plant extracts that contain natural chemicals used as plant protection products

Many plants such as the neem tree and chrysanthemums produce very useful secondary metabolites that are proven natural insecticides. The extraction of these active ingredients from the plant oils requires great skill to ensure the final product is of high purity and does not contain harmful substances. It is known that neem oil that is not properly purified may contain aflatoxins, some of which are highly carcinogenic.

The quantity of the units in the matrix or formulation

Some biological organisms are measured in international units per milligram and not in mg/kg or mg/ℓ as for the classic chemical pesticides. Poorly cultured yeasts, bacteria and fungi may not have the optimised number of international units and will therefore not produce the expected results.

The stability and shelf life of the matrix or formulation

Formulating and packaging a biological plant protection product is more onerous than a chemical plant protection product. Since they are live organisms, they must generally be formulated in highly sterile conditions and packed in special hermetically sealed packaging to prevent oxygen and moisture from destroying them, while packaging must block out light to prevent solar decomposition.

Regulatory requirements

The Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947) does not differentiate between synthetic chemicals, natural chemicals or biological organisms when it demands that all such substances and organisms are registered.

The definitions of an agricultural remedy (pesticide or plant protection product) in section 1 in fact specifies: *any chemical substance or biological remedy or any mixture or any combination of a substance or remedy intended or offered for....* It is evident from this definition that the Act is overarching over all substances or organisms that are perceived to be plant protection products. Section 7 prohibits the sale of any agricultural remedy unless it is registered under the Act.

Unregistered biological and natural pesticides

Many manufacturers of biological plant protection products market their products without valid registration. This means that their products have not undergone the rigorous testing required by the articles and regulations of Act No. 36 of 1947 for, amongst others, efficacy, crop safety, human safety, environmental safety and stability. A person who buys and applies such unregistered biological products has no idea whether the product is what the manufacturer claims it to be, has no guarantee that the product will perform as expected, no idea whether the product contains harmful contaminants or impurities such as aflatoxins, has no idea what the shelf life of the product is and basically puts his crop, and the consumer who buys and eats the produce, at tremendous risk.

The purpose of registration is for the regulatory authorities at the Department of Agriculture and Department of Health to ascertain whether the biological product is effective, but most of all whether it holds any risk for human health and the environment.



Unregistered biological organisms are sometimes smuggled into the country from abroad, while the Directorate of Plant Health requires that all such foreign organisms be put through a risk analysis programme. The world has seen what a virus like the latest SARS CoV-2 that caused the Covid-19 pandemic can do. To think that biological is always safe may be a fatal thought if the organism that you work with has been identified incorrectly. All facilities that work with microbes must be registered under the Non-proliferation of Weapons of Mass Destruction Act, 1993 (Act No. 87 of 1993) as a measure to govern the cultivation and use of microbes. It sounds like an overkill, but biologicals of unknown identity can have a devastating effect on people and the environment.

The wonders of properly manufactured and registered biological plant protection products

Many South African and international companies offer registered biological plant protection products for agriculture and even for home garden use.

These products have undergone rigorous testing and are formulated to give excellent control of plant pests. It helps food producers to move away from total chemical pest control to integrated pest management and offers consumers an assurance that food safety is as important to producers as it is to consumers.

It does, however, demand a mind shift to adapt to the requirements for using biological plant protection products effectively, but the rewards are vast. One of the main hurdles in the agricultural mindset is the demand for immediate results; biologicals do not act as fast as hardcore synthetic chemicals, yet upon being in contact with the target organism, they mostly terminate feeding which means the crop is saved immediately, although the target only dies a few hours or days later.

Signs and symptoms of unregistered biological plant protection products

Any plant protection product that is offered for sale in South Africa must have a registration number starting with a capital L followed by four or five numbers, e.g. L1234 or L12345, and have the exact scientific name of the organism, plus its concentration depicted as IU per mg. If this information is lacking, the red flags are already flapping in the storm. If a biological remedy's manufacturer makes vast claims about efficacy against virtually all plant pests, it is a blatant false claim because biological plant protection products, like their chemical counterparts, can never be effective against all plant pests.

The manufacturers of unregistered biological products often claim their products are non-toxic and safe for human health and the environment. Be wary of such claims. If it is of this nature, then why is it not registered to substantiate that claim? Another false claim is that the unregistered biological product can replace all chemicals. So, if the biological replaces all chemicals, what about the endotoxins that are produced by the unregistered biological product? Are those not chemicals? Producers should be vigilant when it comes to using crop protection products of any nature. If an unregistered biological product is used, be sure to know that your produce is likely to be rejected by the markets and consumers.

*Wishing you and your loved
ones a joyous festive season
and prosperous New Year*

Please note that our phone lines are
still out of order, but you can reach us
on info@croplife.co.za

Stay safe

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SOUTH AFRICA SUID-AFRIKA

