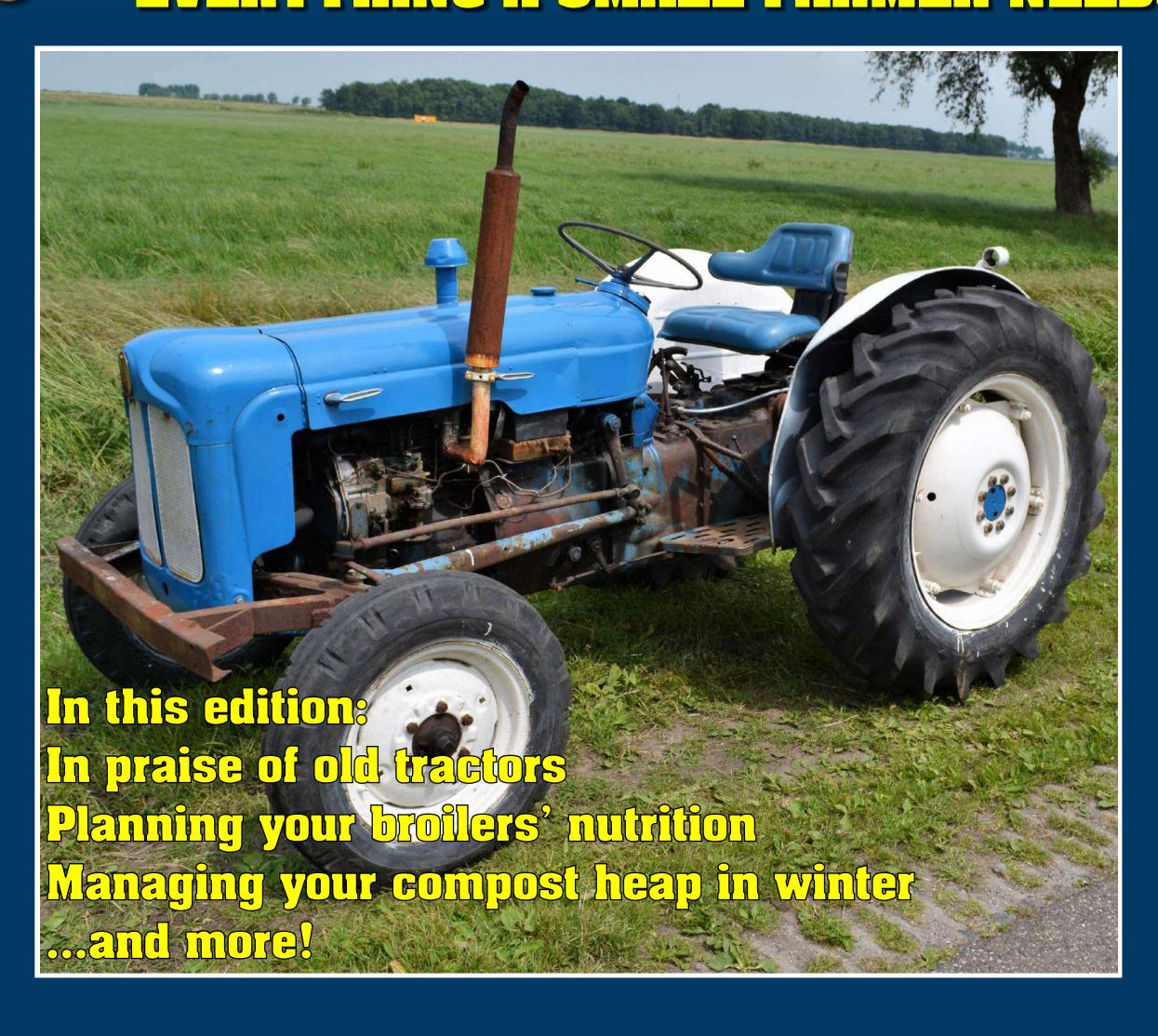
# SOUTH AFRICAN SOUTH AFRICAN JULY 2021 EVERYTHING A SMALL FARMER NEEDS





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## Front Cover

Read about vintage tractors on page 23.

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SA Smallholder on CapeTalk

# The new normal: Get your jabs

ew Covid variant. Fourth Wave (or Fifth, or Sixth). Lockdown Level whatever. Infections and deaths. We predict that to be our reality in South Africa for the foreseeable future. And along with that will come all the other bits and pieces: the inevitable consequences of harsh lockdowns on restaurants, bars, entertainment and hospitality; on interprovincial travel (not to mention international travel and tourism). And on businesses, jobs and poverty. And, of course, hunger.

There is, or rather was, a solution which would have seen all of this become a fading nightmare, just as it has in many countries to the north now reawakening slowly (with varying degrees of success) from what has been an awful 18 months.

And that, of course, is vaccinations. Lots and lots of vaccinations. So many, in fact, that sufficient South Africans achieve "herd immunity".

This blissful state is achieved when the virus passes harmlessly between vaccinated individuals, and only occasionally encounters, and therefore infects, an unvaccinated person.

There is some debate as to when herd immunity is reached. Some say when 60% of adults have had their injections, sufficient numbers will prevent the virus from rampant destruction, particularly if South Africans also continue to practice social distancing, wearing masks and sanitising.

At the other end of the scale, all of those day-to-day inconveniences can be discarded when most of the population, say 80% to 90%, have been vaccinated.

So, unless somebody quickly invents a drug that kills the virus in the body in the same way that antibiotics kill bacteria, vaccination is really the only way out of this pandemic.

Do vaccines work? Of course they do. Polio, yellow fever and smallpox have all but been eradicated from the face of the earth because of extensive worldwide vaccination programmes over decades last century.

The older generation will remember, as children, suffering from bouts of measles, mumps and whooping cough: horrible, debilitating ailments that kept one bedridden, and in quarantine thereafter, for weeks. Now, however, babies receive a host of inoculations not long after birth and the youth of today will thankfully never know how it feels to cough, and whoop, and cough again, or to lie for weeks in a darkened room lest the light affect one's eyes.

So if our only hope of a return to normality is through vaccination, anti-vaxxers, vaccine sceptics and the vaccine conspiracy theorists who believe Bill Gates is using this as an opportunity to take over the minds of the world's population by implanting microchips in the vaccine are doing us no favours.

But neither is the current Third Wave, which is seeing more and more people reluctant to expose themselves to the possibility of infection by visiting a vaccination centre.

And remember, it is only now, at the beginning of July, that the Dept of Health is starting to administer the second necessary injection of the Pfizer vaccine to over 60s.

Given these factors, the glacial rate at which South Africans are being vaccinated will only prolong the turmoil of waves and lockdowns.

But to some extent at least, we smallholders are lucky.

We have our own open spaces on which to exercise and keep busy, and many of us work from our properties and can, and do, grow a lot of our own food.

So our need for interaction with other, possibly infectious, people is more limited than it may be for townfolk.

There is a danger, however, that a prolonged isolation may be detrimental to one's mental state and we should be actively aware of the dangers of loneliness and depression.

Other than that, slowly but surely we will overcome this period of turmoil. The first step, however, is to get in the queue for your vaccination. The jabs cost nothing, and can save your life and, ultimately, the country.



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### **NEWS**

# Readers respond to June SA Smallholder magazine

esponse from readers to our June ezine has been overwhelmingly positive. Here are just a few of the unsolicited messages we received following publication of the first electronic edition in the new format and with national coverage last month.



Thank you. It is easy to download and even easier to read. Now I can stay up to date each month. Well done. ~ *Kenny Pretoroius, Facebook* 

Great! So convenient. ~ Willem Janse Van Rensburg, Facebook

Baie dankie. Dit is nou 'n tydskrif na my hart. ~ Eureka Grobbelaar Combrinck, Facebook

The June issue is lit. I love it. The layout is tops, good job. ~ Fanyane Sibanyoni, Facebook

Keep them coming! ~ Sam Mokhele, WhatsApp

Great news! There was a smallholder-type magazine years ago and I miss it in my farming. Wishing your editorial well. ~ David Battershill, Facebook

Keep on doing what you have been doing best. ~ Lloyd Khumalo, WhatsApp

I like this magazine! I am benefiting as an emerging small-scale farmer. Please continue! ~ Stanley, WhatsApp

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Content: Dripline Roll, 50 Sealing Rubbers, 50 Offtake Connectors, 10 Couplings, 50 End Plugs, Pipe Perforation Tool, Y-Type Disc Filter



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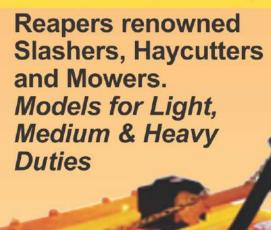








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### **EVENTS**

# KragDag organisers announce 💭 🔽 plans to go ahead with expo



ollowing the last-minute cancellation of the 2020 expo, the organisers of the annual Sakeliga KragDag at Donkerhoek, Pretoria, have announced their intentions to go ahead with this year's show. It is planned for 7 to 9 October.

The 2020 expo was cancelled at the last minute when the organizers and the Tshwane Municipality could not agree over Covid-19 restrictions at the time.

In a statement, KragDag organizers re-emphasized their objective to "Doen jou eie ding" (do your own thing), saying that their expo comes at a time when people are looking increasingly at ways of living independently of government by no longer relying on government provided services.

As a result, the exhibitors at KragDag reflect the growing industry in self-sufficiency and include solar power companies, generators, water purification services, feed and livestock equipment suppliers, security

suppliers, soil scientists, and so on.

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The expo will be held on the Diamond Valley **Kraal panels** Estate south of Rayton, east of Pretoria.

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## **NEWS**

# Commentators weigh in on livestock export issue

n what many commentators view as breathtaking cynicism, the South African government last month sanctioned the consignment to their deaths of some 58 000 head of livestock, comprising 57 231 sheep, 800 cattle and 178 goats.



The animals were loaded aboard the 41-year-old Kuwaiti-flagged livestock carrier *Al Messilah* at East London last month, bound for the Persian Gulf. The shipment takes place against a backdrop of the recent release for comments of draft regulations to control the surface export of all livestock from South Africa. Based on standard regulations adopted by many countries around the world, the South African government's version includes a specific clause which would ban the trade from taking place during the hottest months of the year in the northern hemisphere, namely from May to August.

Although the regulations are only in draft form, and the period for comments closed only recently, this shipment took place in June  $\sim$  right in the middle of the period when the regulations, if law, would have prohibited it. As with previous shipments, opposition from animal rights activists and the NSPCA resulted in only grudging concessions being made which would have alleviated the suffering of some of the animals. Following court hearings, inspection warrants granted to the NSPCA allowed them aboard the ship at specific intervals of only 45 minutes' duration.

A second warrant granted the NSPCA inspectors unrestricted access to the feedlot of the shipper, Al Mawashi, where the sheep, cattle and goats that made up the final shipment were assembled and quarantined. The total of twelve NSPCA inspectors removed a total of 1 400 animals from the loading process. These were either under-weight, lame, had eye conditions or prolapses or were suspected of being pregnant. A total of 23 sheep required emergency slaughter due to the severity of their condition, the NSPCA said, while a further 332 were later sent to an abattoir. And, finally, on the final day of loading a total of six newborn lambs were found aboard the ship, and removed.

These livestock shipments to the Persian Gulf have gathered pace in recent years, specifically since Australia ~ the biggest supplier of live sheep for export ~ banned them from taking place during the hottest equatorial and northern summer months.

Al Mawashi, the Kuwaiti trader responsible for the shipments (and which owns a small fleet of old, converted freighters for the purpose), has tried to justify them taking place as an effort to support the struggling smallholder livestock farming sector in the Eastern Cape. However, investigations by the NSPCA of the origins of the sheep reveal that only a small proportion emanate from small farmers, the vast majority coming from large commercial enterprises. \$\mathscr{O}\$



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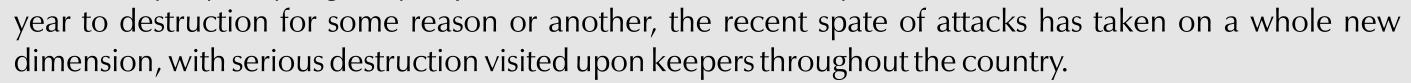
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BEEKEEPING

# Bee industry hit hard by theft, vandalism

he perennial problem of hive destruction faced by beekeepers everywhere has recently become a crisis for some in South Africa. For, while beekeepers with hives in

the country say they regularly expect to lose a few hives every



So seriously has the industry been affected that the SA Bee Industry Organisation, Sabio, held a virtual meeting in mid-June to formulate a plan of action. Among the steps to be taken were to initiate discussions on the subject with the stock theft units of the Dept of Agriculture, Land Reform & Rural Development and the SAPS.

Sabio resolved to report back to members within two weeks on any progress made or resolutions arrived at. Not all hive destruction is caused by malicious or criminal humans. Destruction by animals such as honeybadgers and baboons is a regular feature of South African beekeeping.

Attacks by humans can take a number of forms. In some cases the hive having been opened (destroying it in the process), only the comb and honey is taken, presumably for sale.

Says one commentator: "If you see honeycomb being sold by a back-of-the-bakkie vendor on the side of the road you can be sure it has been stolen."

In others, it is only the brood (young bees) that is taken. This is particularly prevalent in Limpopo where brood is said to be used by local inhabitants to brew a special beer.

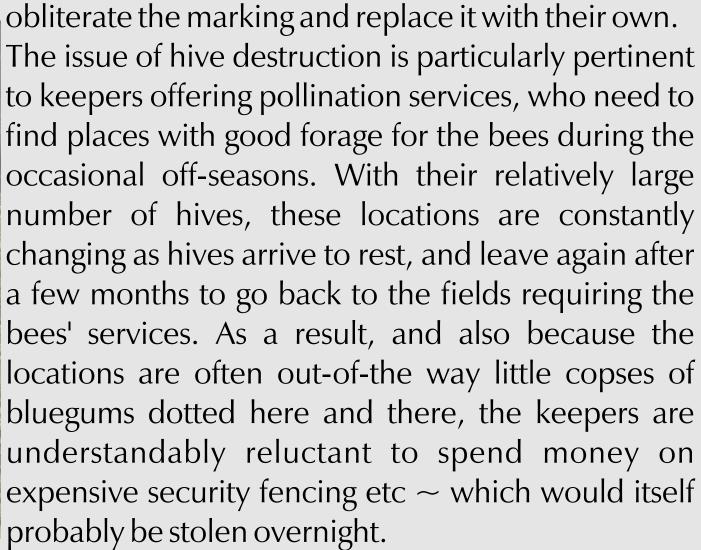
A Limpopo keeper estimates that about R2 000 worth of the beer can be brewed from the brood of a single hive, so this is certainly a lucrative enterprise.

In yet other cases, both the brood and the comb are taken.

And in some cases the entire hive  $\sim$  box, supers and lid  $\sim$  is taken. This was the experience of a Cape Town keeper whose apiary of more than 40 hives neatly mounted on tyres to keep them off the ground, and fenced off with razor wire, was spirited away one night.

Beekeepers with their hives on the move, for example when offering pollination services to farmers, are required to have them prominently marked with their TA numbers. These will enable the owners to be identified. This requirement, however, seems to be no impediment to the thieves who will probably simply

Vandalised hives.





# BEEKEEPING, cont'd

And, once the hives are positioned and located, they are left to their own devices ~ so that the bees can rest unstressed. Thus, it's not as if the beekeeper makes a daily visit to his hives.

And even if he did, most thefts take place at night ~ often at full moon.

Among the worst affected was a 'keeper in KwaZulu-Natal who found a large number of his hives destroyed one day, estimated to be worth more than R300 000, and some 'keepers have lost so many hives that they are contemplating abandoning the industry entirely.

Indeed, the recent spate has been fully countrywide, says the industry, with large-scale losses of hives having been reported from most provinces.

Beekeepers say part of the problem is that the SAPS seems disinterested in curbing the scourge, probably because the law, as it currently stands, is not on the beekeeper's side.

For example, on the rare occasions that such cases have made it to court, the question of "ownership" of the bees themselves is quickly raised by the defence. For,

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although ownership of the hive itself can be established, the bees take up residence, and go about their business, purely of their own volition. Thus, how can it be proven that the 'keeper owns the bees? Case dismissed. 💸



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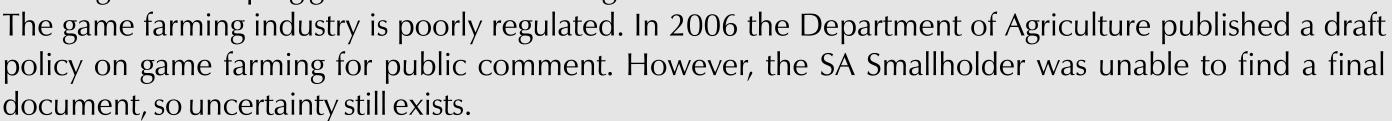
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## **GAME**

# Fair game: Keeping wild animals on your small farm

eople have different reasons for keeping game. They might be looking at game production in the same way as they will keep livestock, for meat and other products. Or, they might offer hunting or ecotourism facilities.

There are, nevertheless, a number of factors to consider when thinking about keeping game on a smallholding or small farm.



The Marketing of Agriculture Products Act was the first to recognise game as a bona fide agricultural product.

One has to obtain a permit to keep game. Twelve game species were reclassified as farm animals in July 2016, in accordance with the Animal Improvement Act.

A further 33 wild species were registered in July 2019, bringing the total registered species to 45.

This model is still in dispute between the Departments of Agriculture (DALRRD) and Environment (DFFE) and the private game industry, though it holds the best practice ecological framework for the long-term survival and genetic integrity of many of southern Africa's game species. This is the view of Dr Deon Furstenburg of Geo Wild Consult.

According to the DFFE, "... any person who carries out a restricted activity, such as the keeping, breeding, selling or transporting of an animal of a listed threatened or protected species, must still comply with the provisions of National Environmental Management: Biodiversity Act (Nemba), and its associated Threatened or Protected Species (Tops) Regulations".

Anyone wanting to keep game must abide by legislation such as Conservation of Agricultural Resources Act, Nemba, Animal Improvement Act, the Game Theft Act and provincial environmental and agricultural ordinances.

Smallholders might find themselves in biomes that support game farming more viably than conventional livestock farming. However, there is limited user-friendly information on recommended game species and stocking rates.

There is also no uniformity among the different provincial departments. According to Furstenburg, "Some provinces allow game camps of 20ha, while in other provinces the minimum allowed is 400ha and even greater for some species."

There are no specific norms and standards for keeping game and even in the same province conditions under which a permit is granted might change.

The national guidelines are interpreted by each office differently, by decision makers who do not always have sufficient scientific knowledge.

Furstenburg goes on to explain. "In general the offices require an owner to commission a scientific scoping report by a registered national scientist like myself. The study report must be submitted before the application will even be considered, and then still the office will make its own decision and not according to the presented professional science. A study costs the owner between R40 000 and R70 000 depending on the situation."



Zebra behind a fence.

## GAME, cont'd

The grazing capacity of the land needs to be very clear ~ the landowner must know how many animals can be kept without deterioration of the vegetation and soil.

But you can't keep wild animals in the same way that you can livestock. Yes, an impala, for example, is the equivalent of 0.16 of a Large Stock Unit. (A Large Stock Unit, or LSU, is defined as a steer weighing 450kg and a weight gain of 500g per day on grass pasture.)

However, the other factors that come into play are exactly what the impala eats and how selective it is, what its habitat requirements are and what its social needs are.

Choice of habitat is influenced by preference for refuge, feeding and social needs.

Each species has different requirements for feeling safe. A kudu takes refuge in dense thicket, yet as a browser it needs bush with visibility at head height.

A buffalo prefers wide open plains.

Wild herbivores are divided into grazers, browsers and mixed feeders. An impala, as an example, is a mixed feeder, eating short, sweet grass, forbs (leafy plants) and leaves, bark and stems from shrubs.

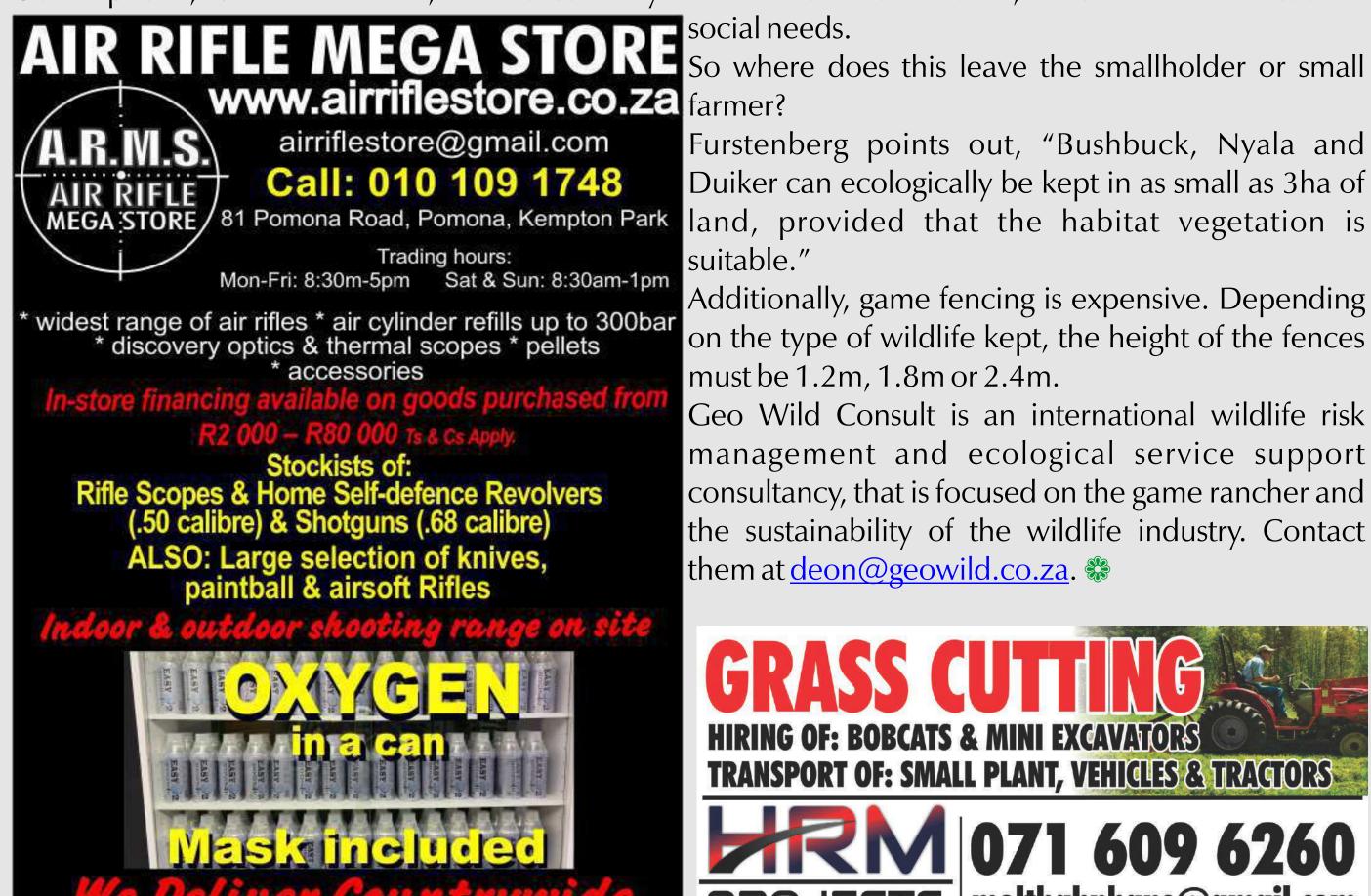
Social needs affect the amount of space different species need.

A steenbok is solitary and territorial, so while it might only need four hectares for grazing, it requires 30 hectares for its social needs.

The semi-gregarious impala is only territorial during the rutting season, but individuals do not stay within the same herd all the time.

Herds need up to 180 ha to accommodate the changing social needs.

Other species, such as the zebra, form strict family bonds which last a lifetime, which will also affect their



Furstenberg points out, "Bushbuck, Nyala and Duiker can ecologically be kept in as small as 3ha of land, provided that the habitat vegetation is suitable."

Additionally, game fencing is expensive. Depending on the type of wildlife kept, the height of the fences must be 1.2m, 1.8m or 2.4m.

Geo Wild Consult is an international wildlife risk management and ecological service support consultancy, that is focused on the game rancher and the sustainability of the wildlife industry. Contact them at deon@geowild.co.za. \*









# **EQUINES**

# Understanding parasites in equines

ike all livestock, horses and donkeys have external and internal parasites that, if not managed, can cause serious or ■ even fatal organ damage.

A parasite is an organism that lives in or on a living organism of

another species (its host). The parasite draws its nutrition from the host and does so at the expense of the host.

The most common internal parasites in livestock generally are larvae and worms of various kinds.

In equines common signs of worm infestation are tail rubbing, pale gums, ill-thrift, colic and poor coats (called staring).

If left untreated worms might cause chronic diarrhoea and irreparable damage to internal organs. In donkeys and horses the most common species are large and small strongyles (redworms), ascarids (roundworms), and pinworms, as well as the larvae of bot flies.

The large strongyle larvae are eaten by the horse and then follow a complex migration, passing through the intestinal wall to the inner lining of small arteries, then moving up to the large arteries supplying the digestive tract.

> The larval migrations last five to seven months and the larvae eventually return to the intestine where they become adults. There they lay eggs which are excreted in the manure of

the host for the cycle to start again. Small strongyles are small redworms usually found in the

large intestine. Unfortunately, they are particularly good at developing

resistance to deworming products.

Roundworms are a common problem in younger equines which should be treated for this parasite from one month

old, so that they hopefully develop immunity by the time they are a year old.

Pinworms are most often a problem of stabled horses. Although pinworms are not a particularly serious parasite, horses that continually rub their tails can develop abrasions which might lead to infections. Tapeworms have a life cycle that takes roughly six months to complete.

Bots are the larvae of the bot fly.

Donkeys and mules are affected by the same parasites

Bot flies lay their eggs on different parts of the horse's body, are easy to see as little yellow spots attached to the hairs of the horse's coat. The eggs are then ingested by the horse as it scratches itself with its teeth.



Horse bot fly.

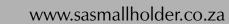
as horses.

The larvae spend approximately nine months attached to the stomach lining of the horse before passing out with the manure and maturing into adult bot flies.

The owner should be on constant lookout for the eggs when grooming the horse, as the eggs are easily scraped off, using a specialist bot scraper.

Or, the old-fashioned way, by "shaving" them away using an old razor blade.

There are many dewormers available for horses and donkeys, some of which are broad-spectrum parasiticides,



# **EQUINES**, cont'd

which bring about control for all major worms of equines.

The two main active ingredients found in equine dewormers are ivermectin and praziqantel, sometimes in combination. It is not recommended to ingest horse dewormer containing ivermectin as a prevention or cure for Covid-19.

In the "old days" it was recommended that a scheduled deworming programme be followed at regular intervals. However the thinking has changed, because resistance of equine worms to chemical dewormers has become much more common.

Nowadays, many equine owners are managing parasites through seasonal application of dewormers and through improved pasture management.

It makes sense to address the worm problem when infestations are likely to be higher, so the practice is to administer medication mainly in September/October, at the end of December and in April. Treatment against bots should be in June and November.

Consult your veterinarian about the administration of probiotics at the same time as chemical anthelmintic drugs, so as to restore the beneficial intestinal bacteria which are natural to the horse's intestines.



Fairlead Farm, Benoni Call Janine 073 311 4456 Open Daily 9am - 5pm fairleadfarm@gmail.com Good pasture management in the fight against worms includes avoiding over-crowing of fields, rotating and resting paddocks and cross grazing pastures with other species such as sheep or goats.

Owners also need an effective plan for the management of manure. Because parasite eggs are passed out in manure, collecting faeces is by far the most effective way of breaking the parasite cycle. Obviously stables should be cleaned every day, but dung should also be collected from the fields, if possible twice a week. 💸

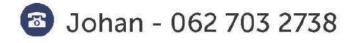


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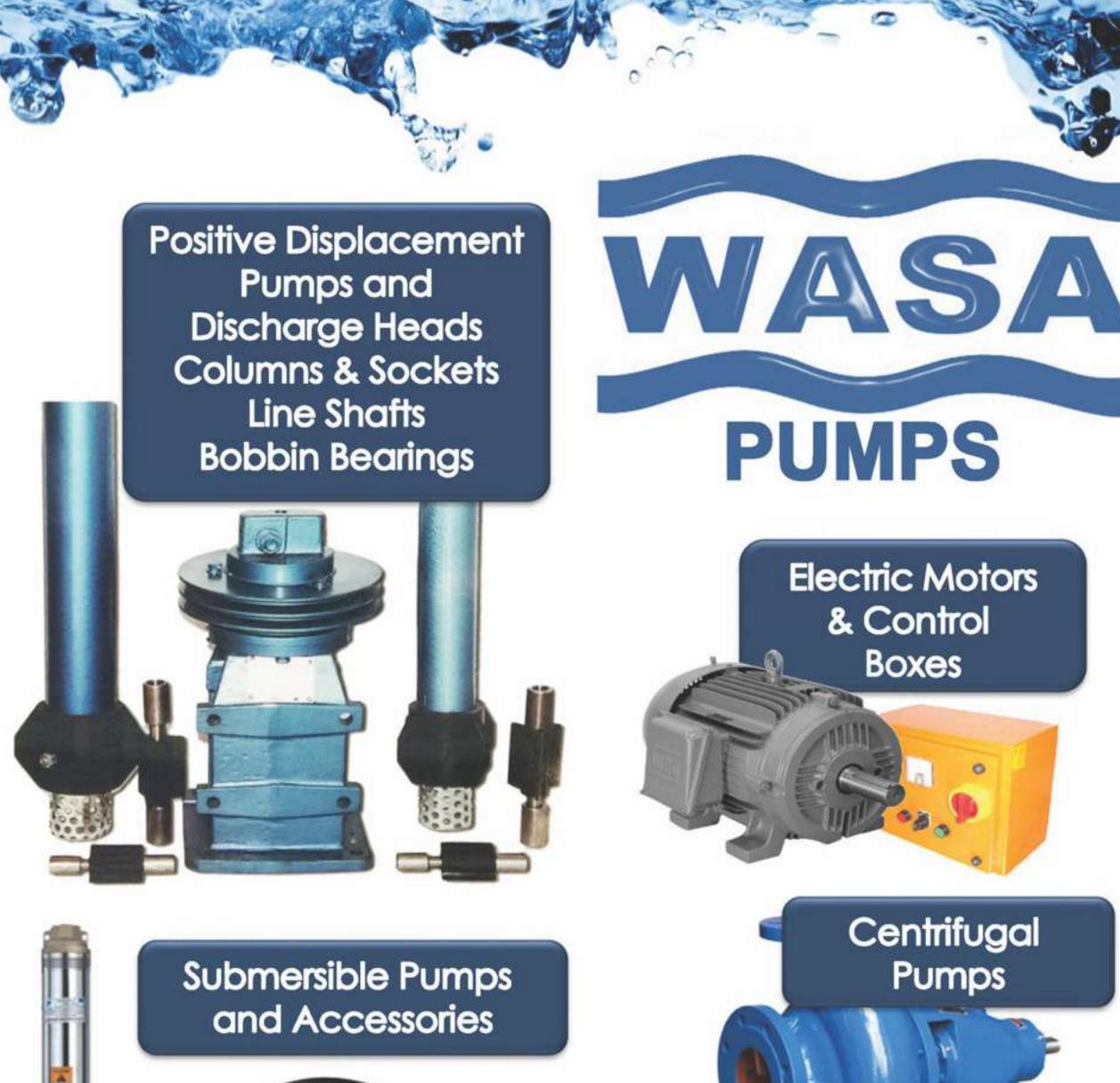


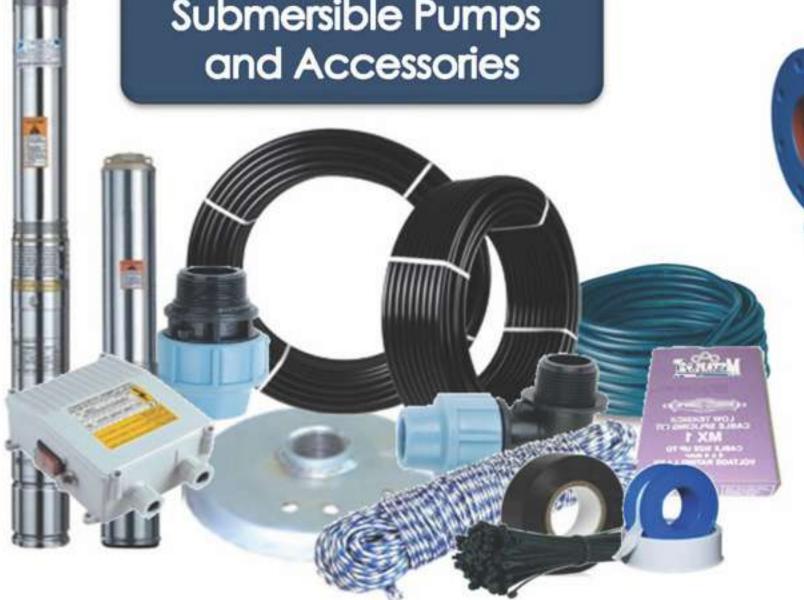
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### **MAINTENANCE**

# Winter is no time to hibernate on a plot

n smallholdings and small farms worldwide, although there are tasks that need to be performed daily or weekly throughout the year, there is no doubt that wherever one's property, winter is a quieter time activity-wise.

So, wherever you are in South Africa, now is a good time to perform those essential maintenance tasks around the plot that you won't have time for in the busier

ploughing, planting and harvesting seasons.

These include essential maintenance and repairs, for example, to fences, gates, stables and sheds, to tanks, dams and reservoirs, and also to pipework, leaky taps and other infrastructure generally.

But it's also a good time to take stock. To look at what you achieved last year or in previous seasons, and to decide on how you want to move forward in the coming year or years, and plan what needs to be done to achieve this.

Why not, for example, look at your fields and, as you decide what needs to be planted where, how and when, also look at whether you can prepare the land in such a way that catching rainwater run-off can be implemented. You can read more about how to do this further on in this edition, here.

On any successful plot or farm, planning is the key to success. It is useful to have a schematic map of your property, showing the location, shape and size of the various camps and fields, as well as the location of buildings, piping and electrical cabling, tanks, pumps, reservoirs etc.

You can make your own schematic easily enough by taking a screen-grab of your property off Google Maps and tracing the relevant elements either by hand or in a graphics drawing program.

Programs and apps also exist, many free of charge, that you can use to measure distances of fences, etc, and areas of fields.

You will probably need a number of copies of the plan, one on which to record physical dimensions etc, another to record soil and vegetation types, including results of any soil analyses you have done, and further copies recording what was grown where, and how successfully it grew.

This historical record will help you to prevent repeating mistakes, and to plan rational crop rotations.

At a smaller level, it is just as useful to draw a plan of your vegetable beds, so that you can draw in soil types, crop rotations, fertilisation schedules and other relevant details.



Field plans.

Print and put all of these plans in a ring-file, so that you can add to them season by season or year by year, and can take them with you to the fields to record any salient information, test results etc instantly as you work.

Moving beyond the armchair planning stage, work to be done includes either touching up rusting poles and gates, or fully derusting and repainting them.

If you have recently moved to your property and your metal infrastructure needs maintaining, it is worth doing the job properly at the outset, ie fully scraping and derusting, painting with a metal undercoat and covering with a topcoat or two of the colour of your choice. Doing so will mean that, in

# MAINTENANCE, cont'd

touch-up here and there as rust starts to peep through the paint. More importantly doing a proper job at the outset will greatly prolong the life of the infrastructure. Depending on your location, a properly painted metal farm gate, if kept touched up annually, should last way beyond 30 years.



Not so with wire fencing, however. Most wire fencing, whether Fence repairs.

barbed wire, diamond mesh or hinged-joint field fencing, is no more than lightly galvanised. In coastal regions the salt air will combine with rain to quickly destroy this and expose the underlying metal to the elements.

And even in the drier inland, today's levels of air pollution will result in a seasonal shower or two of fairly acid rainfall which will have the same effect.

Then, also, even small licks of flame from a veld fire will burn away the galvanising in an instant.

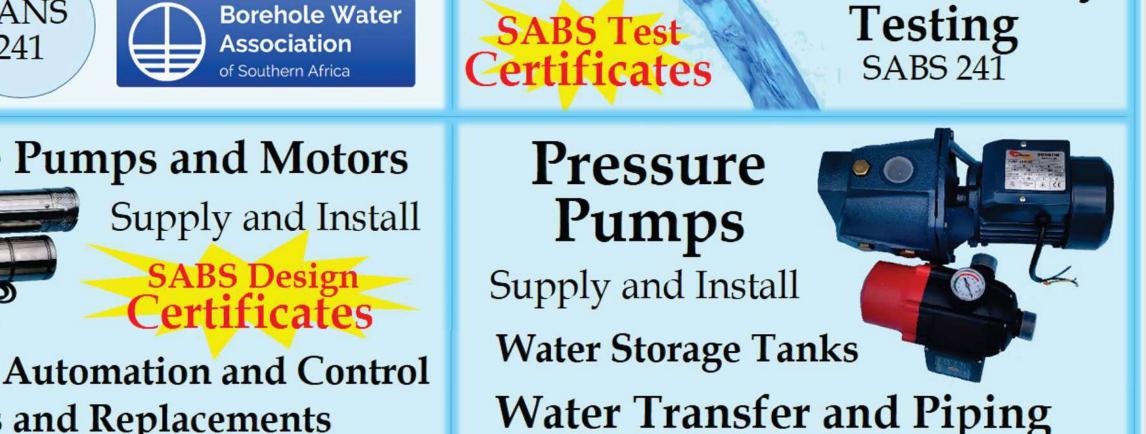
So replacing strands that have corroded to the point where they cannot be bent or twisted without breaking will be part of your life as a smallholder.

It is also worth spending a couple of winter days in your workshop performing basic maintenance on your powered equipment, and servicing your tractor, greasing bearings on your implements and generally tidying up.

Sometimes, these tasks are therapeutic. For example, of you have a chainsaw, a couple of quiet hours are to be had sharpening blunt saw chains.

Whether you have an electric chain sharpener or do it by hand file, it's an opportunity to put your mind into neutral for a few hours while your hands do the work.





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# SA-designed strainer a huge improvement

ne of the inconveniences of a traditional fence-strand strainer (used to ensure the correct tension of fence



wires) is that the end of the wire one is working with inevitably become entangled with the parts of the fence strainer itself. In other words, one does not have a clear working area in which to bend and twist the two ends of the strands together.

Now, however, thanks to the ever-inventive Michris Janse van Rensburg of Bultfontein in the Free State, a robust wire straining device is available which provides the user with a clear working space in which to join the two strands. Using steel bar and a simple ratchet, van Rensburg has fashioned a three-sided steel structure. In the middle of one of the short sides is a short length of chain to which is attached a strand brake, comprising three small pieces of flat steel bolted together in such a way that the two outer pieces will, when pulled together by the chain, swivel inwards to progressively tighten around the strand. In other words, the tighter the chain is pulled the harder the wire is gripped. On the opposite short side is a simple ratchet-controlled rotating twist-up lever attached to a similar chain-operated strand gripper.

To use the strainer the two strands to be joined are placed into the grippers and, using the rotating lever the one gripper and its strand are pulled inward towards the other strand end.

When the desired tension between the two lengths of wire is achieved, the ends are simply twisted together into a conventional join in the free space between the two arms of the strainer, the space being about the size of an A4 sheet of paper. To release the tension and remove the device the ratchet is simply lifted away from its cog to loosen the tension on the two short chains. The device can also be very

successfully used to fasten new strands around end posts. In this case, the one end of the device is hooked around the post, and the wire pulled tight by the ratchet lever as described above.

The user then has a clear working space, unencumbered by the chain ends and other working parts of a traditional strainer, in which to make his recommended two turns of end-wire around the post before twisting off the end tightly around the strand itself. The wire strainer is just the latest invention from van Rensburg, who has designed ~ and manufactures ~ a range of tools and small implements for smallholders and non-

In-store display showing the two applications described in the article.

mechanised farmers under the Backsaver label. For more details visit www.backsaver.co.za 🟶





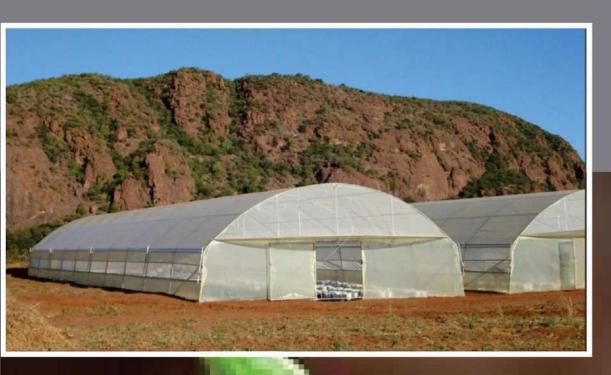
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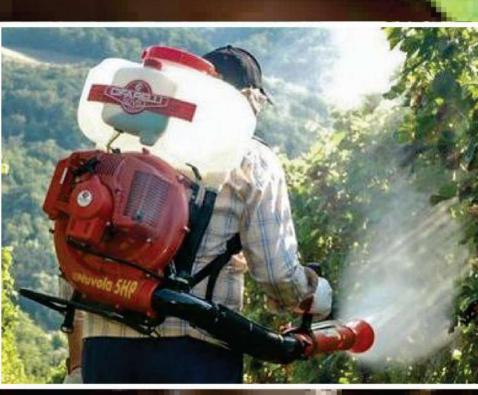


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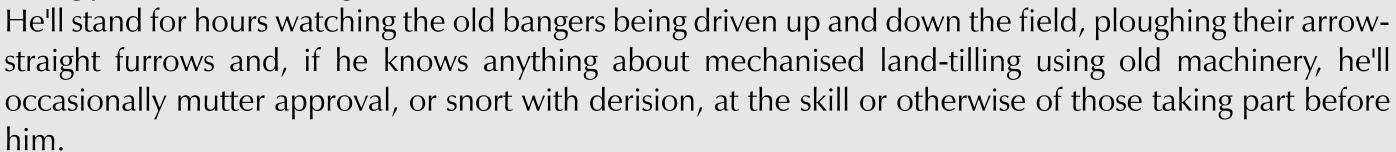
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### **TRACTORS**

# A mechanical history of SA's tractors

ant to turn an old man into a little boy again? Take him to a vintage tractor show or country fair ~ particularly one that has a ploughing competition

taking place in a field alongside.



Good, harmless fun, to be sure. But also a very important part of any country's heritage. And an excellent place for the young to learn the considerable skills required by the old-timers to do the job properly.

For, unlike today, when tractors have grown exponentially in terms of size, power and comfort, and implements likewise, olden-days tractors were small, low-powered, and often slow.

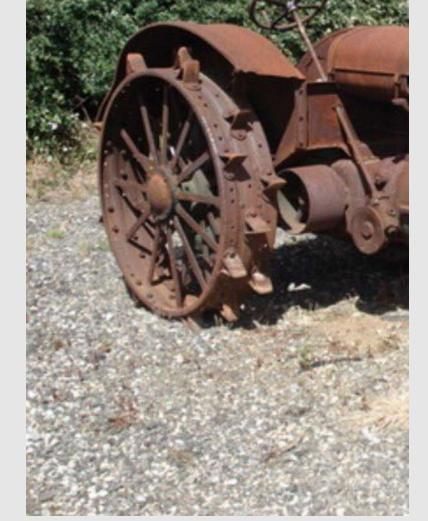
Although it's probably arguable, old-timers will tell one that to plough successfully with a small tractor takes much more skill and understanding than to plough with a bigger, modern job.

The development of the modern tractor can be characterised by a number of stages.

First, there is the development of the engine. The earliest tractors were steam-powered.

Then came the internal combustion engine fuelled by petrol or kerosene, which became to be known as power paraffin. Finally, as more grunt was required the move was made to diesel engines.

☐ Secondly, there was the development of the rubber-clad pneumatic tyre, which was a huge improvement over the cleated steel wheels of the early years.

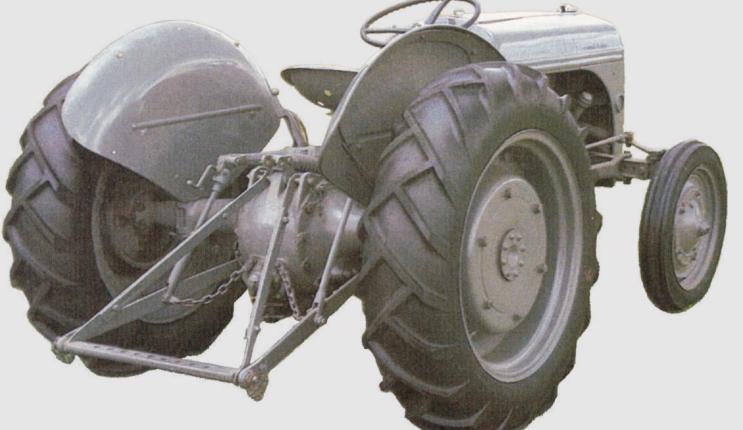


Steel wheel.

☐ Thirdly, Briton Harry Ferguson was responsible for probably the biggest development of them all when he developed a three-point hydraulic handling system for implements.

This greatly speeded up and facilitated the fitting, handling and movement of ground-engaging implements and ushered in a whole new range of implements themselves.

Vaaljapie owners, take a bow, for it was to the humble Ferguson TE-series (commonly called Vaaljapies in



South Africa) that Harry made these innovations, in the process resulting in without a doubt the most successful and prolific make and model of tractor ever built.

For the record, before the development of the so-called Ferguson System of hydraulics, all tractors were what can be referred to as draggers, ie they only had the ability to pull implements.

So to get these to and from the fields the implements were fitted with wheels which, in some cases acted also as depth control wheels

Vaaljapie.

## TRACTORS, cont'd

when the ground-engaging bits were lowered (which took place through a series of hand-operated levers).

It's worth mentioning here that with the development of today's megatractors, implements have become too large and heavy to be lifted by the tractor's hydraulics.

So, instead, they are fitted with wheels for transport and depth control, and the tractor's hydraulic circuit is coupled to the implement to perform the raising and lowering.



PTO: Power take-off at tractor rear

☐ Fourthly, there was the gradual addition of safety, comfort and efficiency features. These began with ROPS – roll-over protection systems, now mandatory in many countries. To these were added canopies, which morphed into cabins, heated for cold climates and air-conditioned for heat, all manner of energysaving measures, such as power steering, electronic monitoring and, latterly, GPS positioning and steering control, etc.

☐ Finally, the development of the telescoping and articulated power take-off shaft or PTO shaft enabled powered implements to be developed, such as slashers, rotavators and fertilizer spreaders.

Although it is worth mentioning the earlier development of power take-offs, namely the belt drives of yore. These did, indeed, extend the usefulness of the tractor beyond a mere towing unit, for by fitting a PTO belt, the power of the engine could be harnessed to drive stationary machines such as threshing or water pumps and circular saws.

And, it required considerable skill to position the tractor correctly in relation to the machine to be driven. The pulley on the machine and the pulley on the tractor had to be perfectly-aligned or the belt would slip off after a few revolutions. And the tension had to be just right: too loose and it would slip; too tight and it would tear. 🗱

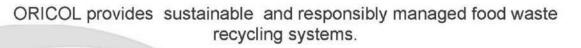


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# IN THE GARDEN

# Keeping a balanced compost

heap in winter

here is no reason why one's composting efforts should come to a stop in winter. However, change in temperature, moisture and possible contents will need to be factored in to keep it functioning. The secret to a successful compost heap is balance.

To create the right circumstances for the composting micro-

organisms to perform well you need the right carbon to nitrogen ratio. A simple rule of thumb is to use one part nitrogenous material to thirty parts carboniferous material.

Nitrogen-rich materials include fruit and vegetable peelings, grass clippings, lawn and garden weeds, flowers, cuttings, chicken manure, coffee grounds and tea leaves or bags.

Keep a bucket with a tight-fitting lid near at hand for your organic kitchen waste and add it to the heap when a larger quantity has accumulated (so that you don't need to visit your compost heap every time you peel some spuds or eat a banana).

Adding chicken or livestock manure will keep up the microbial activity in the heap.

Carbon materials include dry leaves, shrub prunings, straw or hay, pine needles, some newspaper and shredded paper, cardboard, mealie cobs and stalks, sawdust and wood chips.

In winter it helps to keep the materials small  $\sim$  chop up branches and shred the garden waste if possible, so that it doesn't take so long to break down.

Piling all the fallen leaves at the end of autumn onto you heap in one go might be excessive. Rather spread some of them at the base of your trees and elsewhere in the garden as mulch. Also leave a pile near the compost heap to layer over wet kitchen waste.

A healthy compost heap generates its own heat, in which the rotting process takes place. If the winter temperatures in your area are low you might consider covering your heap to keep the heat in. Insulation, such as flattened cardboard, old carpet, feed sacks or thick layers of dry leaves might be helpful.

If nothing is happening and your pile doesn't seem to be heating up at all, this could be because there is not enough nitrogen. Increase the green material or add a compost activator such as comfrey leaves or yarrow. Some activators can be bought in powdered form for mixing with water.

In any season the size of your heap does count. A large compost pile will insulate itself and hold the heat of microbial activity. Its centre will be warmer than its edges. Piles smaller than 1.5m by 1.5m will have trouble holding heat, while piles that are too large don't allow enough air to reach the microbes at the centre.



Compost heap.

If your heap has been around for a while, the quiet time of winter is a good time to take it apart to "harvest" the "finished" compost that's at the bottom. Compost is ready when it stops producing heat and it looks, feels and smells like rich, dark earth, rather than rotting vegetables. In other words, it should be dark brown, crumbly and smell like earth.

Another sign of "finished" compost is that it is free of grubs and worms, who, having eaten all there is to eat, have moved on to more nutritious parts of the heap.

Set the usable material aside for use in spring or spread it over your beds as winter protection, then

# IN THE GARDEN, cont'd

rebuild the heap with the remaining material (taking the opportunity to mix it up well as you work).

The right balance of moisture is equally important in a compost heap. In winter rainfall regions smallholders need to keep an eye on the heap so that it doesn't get too wet. If this does happen, mix up the pile so that it gets some aeration and can breathe.

Add coarse dry materials such as straw, shredded newspaper, hay, sawdust or dry leaves to soak up excess moisture. A heap that stinks like rotten eggs might be too wet.

In the summer rainfall areas, the pile should be kept moist, as a completely dry pile doesn't compost.

The different types of material should be mixed, as a thick layer of one material might prevent the moisture from reaching through the pile. The compost heap should be as wet as a well wrung-out sponge.

During winter smallholders might have more ash if they are lucky enough to have a wood fire. Wood ash makes a great addition to the compost heap, where it will aid fertility (potash and other nutrients needed by plants are contained in it to some degree). However, if you have a lot, don't add it all at once as it is alkaline, and raising the pH too much will affect the bacteria and worms at work. It's better to keep the ash in a nearby container and sprinkle on a layer every so often. But, if you tend to compost a lot of acidic material such as fruit waste, the ash will help to keep the compost at a more balanced pH and reduce the need to lime the vegetable plots at a later date.

Aeration is the other important factor to good composting. The heap can be turned a couple of times during winter, separating compacted materials and allowing oxygen in  $\sim$  oxygen is necessary for the

decomposing process. Do this on a sunny day so as not to lose too much heat. Making a layer of coarse material such as sticks and branches at the bottom allows air in, and also helps with drainage of excess moisture.

Another aeration trick is to stand a roll of chicken wire in the centre of the

Olive, peach, nectarine, plum, almond, apricot, walnut, prune, pomegranate, pecan nut, apple, cherry, pear, fig, quince,

mulberry, lemon and grape vines.

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compost enclosure as you fill it. This acts as a chimney, allowing air deep into the centre of the heap.

Even in winter your compost heap is home to a wonderful variety of creatures, all of whom have roles to play in the process of breaking down organic matter into compost.

If you have a good variety of insects, microbes and bacteria in your heap it means that you have a healthy ecosystem. They're all part of what earth scientists refer to as the soil food web.

It confirms that you have achieved the right balance of heat, moisture and oxygen.





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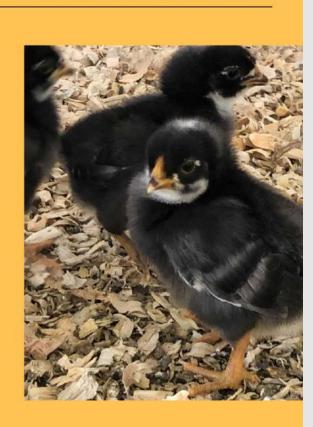
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## **POULTRY**

# Finding gaps in the market as a small-scale broiler producer

able to compete on price with chickens produced by big commercial enterprises. Not only do they have economies of scale when it comes to buying their inputs, but they also have access to the most advanced technology and systems



that monitor, to the hour and ounce, what is being consumed and what is being produced. So, let cost-conscious consumers continue to buy their chickens at the lowest prices they can find, while you concentrate on satisfying the different types of niche markets that will exist around you.

Such as? Here are some ideas.

Among older consumers there is a market for chickens sold with their gizzards (the heart, liver and neck), which were used traditionally to flavour dishes during cooking, to make richer gravy. Simply adding these to the slaughtered bird will partly offset the higher price you will need to charge.

There is also a market for larger chickens than are usually sold by commercial producers. In broiler rearing, larger usually means either the chicken has been fed hormones to make it grow faster or, more naturally, that it has simply had more time to grow and mature before slaughter. But older implies you will have to feed it for longer, which will push up your costs. For those consumers looking for a larger "hardbody" that higher cost is not a problem, particularly if you include the gizzards as part of the deal.

There is also a market for "black" chicken, those birds whose skin is, indeed, black. Such breeds are not commercially-grown for broiler purposes, and so by specialising in one of these (usually dark-feathered) breeds one may find a niche market.

If one lives close to an informal settlement, or an unelectrified suburb there will be a ready market to satisfy in the sale of live broilers, rather than ready-slaughtered and refrigerated or frozen birds. If opting for the live bird market, it makes sense to do a deal with a vendor or hawker who will collect a consignment once or twice a week, and who will deliver these to his customers.

Finally, there are the organic meat-lovers. This is probably the most difficult market to cater for as everything about your operation must be identifiable as organic, including all the inputs into your feed. If you mix your own feed, for example, you will need to be able to prove that the maize, sorghum, bran, salt, lucerne etc that goes into your formulation are all, individually, organically grown. Similarly, all remedies you use must be organic rather than chemical. An alternative would be to market a "free-range" chicken, ie one that has grown in as "natural" conditions as possible, allowed to browse and scratch outdoors in the daytime sunlight, and which is securely housed at night. \$\mathscr{o}\end{a}





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# Planning the ultimate broiler growing schedule

s a small-scale broiler farmer, whatever market you choose to supply, growing chickens intensively requires strict hygiene and health protocols to be observed.

Any laxity in this area spells disaster, as any infection or ailment

will surely spread quickly through your entire flock, with devastating results.

This includes following a strict vaccination and inoculation schedule for notifiable diseases such as Newcastle Disease, as well as gumboro and the other common poultry ailments, and observing strict hygiene among workers in the poultry house.

A common mistake among small producers is to neglect the cleanliness of drinkers and feeders during the growing cycle.

At the end of each growing cycle, too, once all the birds have been removed, the entire growing space must be scrupulously cleaned, washed down with an antiseptic solution and allowed to dry completely before clean bedding is laid and the next batch of chicks is introduced.

For a small producer it is probably not cost-effective to mix your own feed, given the complexity of the different formulations for maximum growth, vigour and weight gain. If, therefore, you buy commercial poultry feed you should follow the recommendations of the manufacturer as to when to feed what.

The three feeding stages of broiler production are a starter mash or crumble, usually fed to chicks for 15



of the broiler's life.

Some manufacturers have a post-finisher feed, which is a lower-cost option, fed from the 36th day to slaughter.

In total, a broiler chicken being fed on this system will consume between 3.5kg to 4.5kg of feed over its production cycle, depending on the type of feed, and the length of time before slaughter.







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## **WATER CONSERVATION**

# Alternative methods of harvest and

# use to conserve water

Ithough it varies considerably ~ obviously ~ from region to region, the average annual rainfall for South Africa is about 464mm ~ quite a bit lower than the global average of 786 mm.

And, already a relatively water scarce country, South Africa's usual

sources such as rainfall, runoff, rivers and easily accessible groundwater are further being affected by climate change. And pollution.

So canny smallholders, particularly those in drier areas, need to be aware of how to use water sparingly, but also on the lookout for other forms of harnessing and storing water that occurs around them.

In recent years the term rainwater harvesting has become common, the most common form being when rainwater is collected from a roof surface and redirected to a tank.

The water may be used in the home or garden, or for livestock.

The time of year when rainwater harvesting can most fruitfully take place will vary according to the wet season for any particular area. Western Cape smallholders, for example, should be taking advantage of whatever rain is falling during winter, to be stored for use in summer.

The converse pattern would hold true in summer rainfall areas.

Roof water harvesting is one thing. Another issue is that rain that falls on land is often lost in the form of runoff, which also carries away precious topsoil.

Thus, South African soil and water scientists have developed the concept of in-field rainwater harvesting (IRWH) that may be the answer to this problem. IRWH techniques aim to reduce runoff from the field to zero, while considerably reducing evaporation from the surface.

The basic structure of an IRWH system comprises a 2m runoff strip along the slope of the field (catchment area) and 1m basin (storage) area across the slope of field and at the end of the runoff strip.

To create the basin, first create 20cm high contour ridges and then use a basin plough (aka damskrop), to create a 10cm deep and metre wide basin every 1,5m. In this way, runoff is directed and stored in the basin area. Planting (0,9m row width) is done in the basin area where rainwater is collected.

Smallholders in summer rainfall areas can use the dry months to research and implement this form of water saving.

Fog water collection (FWC) is another concept that is not widely used locally, but which could hold considerable potential as an alternative water source in the mountainous regions and along the West Coast

of South Africa.

In other developing countries different types of screen materials have been used in fog collectors, such as aluminium, plastic, plexiglass and alloy. However it is quite easy to erect a 70m<sup>2</sup> collecting screen made from shade cloth that has been attached to 6m high vertical poles with gutters suspended to their lower ends.

If the geographical conditions are right, this is a low maintenance, green technology.

Despite the relatively low average daily yields, the total water volume collected on a particular day may be considerable ~ most welcome in the most arid regions.



Microcatchment.

### IRRIGATION, cont'd

Smallholders may not be able to implement cloud seeding, seawater desalination or iceberg harvesting, but we can all make the best of whatever moisture we have by mulching.

This is not harvesting water, but it is preventing evaporation.

Mulching means spreading material such as decaying leaves, straw, bark, wood chips or compost around the plants, to form a protective cover over the soil surface and to retain the moisture in the soil.

Soils consist of particles and pores. Those pores can be filled



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Tel: 012 809 1525/1427 solarman@mwebbiz.co.za with air but also with water. The number of pores in a soil varies according to the type of soil. The pores in a clay soil account for 40% to 60% of the volume. In fine sand this can be 20% to 45%.

When it rains, if the water does not run off but sinks into your soil, some of it may move all the way down to the water table or the bedrock, but a large amount of it is held by capillary forces that cause water to coat each soil particle and partially fill the spaces between particles.

The more water you keep stored in your soil, the less you will need to provide supplemental irrigation. 🟶



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## IN THE GARDEN

# Rhubarb: A rewarding perennial plant

hubarb ~ is it a vegetable, a fruit or a herb? We grow it like a vegetable, and we eat the stalks and not the fruit, yet it is sweet so we cook it and eat it like a fruit. At the same time, it is said to have medicinal qualities, so that might make it a herb.



Rhubarb is an old fashioned edible, which might bring warm childhood memories to some people. It is easy to grow, particularly in cooler areas.

The seed is available from various online suppliers and some garden centres and the time to plant rhubarb is August to October.

It is a perennial plant, so be sure that you choose an open area to plant and allow it to spread. It likes full sunlight.

It is advisable to plant the seeds in situ, as seedlings don't like to be disturbed. Soil preparation is important. Rhubarb does not do well in clay, as it is vulnerable to a fungal disease called crown rot. An alternative is to plant the seeds in mounded soil, to ensure that the roots are aerated.

It will thrive in well-drained soil that is rich with organic matter such as manure and compost, and it is quite a heavy feeder. Be sure to weed the area well before planting.

Follow the instructions on the seed packet, as some seeds might need soaking before planting.

Space plants 1m apart, so that the air is free to circulate. Plant seeds 2.5cm deep. Keep the soil damp, but not soggy.

As the weather begins to warm up in spring, apply a good layer of mulch, as rhubarb prefers cooler soil.

Do not eat the leaves or flowers, as they are poisonous to humans, poultry and livestock. Flowering stems must be removed, otherwise they take too much of the plant's energy.

You should be able to start harvesting after about a year, although one should only take small numbers of stalks to start with.

Do not take more than three stalks from each plant, even when they are well established. Harvest from the outside in, choosing the reddest stalks and



Stalks cut for stewing or jam-making.

Do not eat the leaves of the rhubarb plant.

breaking them off with a downward movement.

If you cut the stalks, do so at ground level and keep checking that no fungus has set in where you have cut.

If you are not able to use the stalks straight after picking them, they may be stored for a few days in the fridge.

Revive them by soaking them in water for an hour or two before using them.

To use, cut out any spoiled bits and discard most, but not all, of the absolutely green parts, which are very tart and sour when cooked. Chop the pinkish and red parts into pieces of three to four centimetres.

Rhubarb can be boiled, roasted or cooked in the microwave. It can be eaten with cream, custard or ice

# IN THE GARDEN, cont'd

cream or baked with ginger in pies or crumbles. Before cooking add a sweetener of some sort, eg sugar, syrup, honey or xylitol etc, to taste, otherwise the taste is overwhelmingly tart.

You can also make rhubarb jam.

Because the leaves contain oxalic acid, they can be used to make a DIY insecticide. Boil a cup of chopped leaves in three cups of water for about half an hour and allow to cool. Strain into a spray bottle and add a teaspoon of dishwashing liquid or wetting agent and your muti is ready.

Rhubarb is an excellent source of Vitamin K, which is necessary for strong bones and blood clotting. We are told that it is high in antioxidants, along with other vitamins and minerals that provide a variety of health benefits. It is also a good source of fibre and an aid to

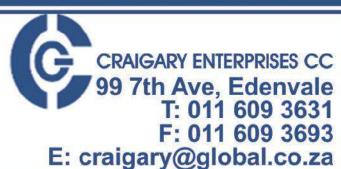


Rhubarb tart.

healthy digestion. It is used as a medicine for various ailments in its powdered form. 🏶







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### IN THE KITCHEN

# Milk gone sour? Clabber it

labbered cheese is probably the easiest thing you can do with milk apart from pouring it into your coffee.

Clabbered milk is a naturally fermented milk product that

can be eaten raw or used in recipes. The purists maintain that one has to use unpasteurised milk, but the process works just as well with pasteurised milk.

To clabber, pour milk into a sterile (ie, very clean) wide-mouthed jar and screw the lid on loosely. Leave it at room temperature to turn sour, whereafter the solids, ie curds, will separate out and float to the top, leaving a layer of whey beneath to thicken. In winter putting it out in the sun will hasten the process.

The process can take from one to five days, depending on the freshness of the milk and the temperatures.

Place a piece of muslin in a sieve  $\sim$  not for nothing is muslin also known as cheesecloth  $\sim$  and pour the



Sieve with muslin.

contents of the jar into it to strain out the curds. Some people use the whey for cooking and baking. Leave it in the fridge for a while to allow the curds to drain completely. Scrape the curds into a bowl and add salt to taste and whatever flavouring you would like. You can use coarsely ground black pepper, caraway seeds, chopped chives or other herbs, or leave it plain. Or, for a sweet variety add a handful of finely chopped seedless raisins or cranberries. Store in small bowls with lids. Use it as a spread like cottage cheese.



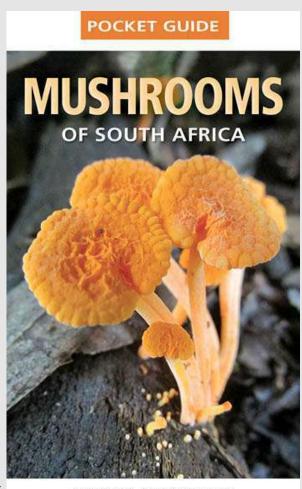
### **BOOKSHELF**

# New pocket guide to help mushroom lovers

ere's something for those who like to source their own food from what grows around them but who, in the case of mushrooms, are scared of possible fatal poisoning.

Struik Nature produces a pocket guide series on a wide variety of aspects of the natural world.

Each is a compact, pocket-size travelling companion, covering the most commonly encountered species. The latest is a new edition of *Mushrooms of South Africa*, by Marieka Gryzenhout.



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Mushrooms are mysterious, beautiful organisms that appear in a variety of colours, shapes and sizes  $\sim$  from microscopic to more than a metre wide. They are abundant worldwide, and South Africa alone has an estimated minimum of 171 500 species. This new edition features a selection of the species more commonly found in the region, and will enable enthusiasts to identify these mushrooms in the field.

Each entry includes:

- ☐ Full-colour photographs;
- ☐ Informative accounts with distinguishing characteristics highlighted;
- And for the gastronome, edibility at a glance.

Easy to use and compact, this guide will prove invaluable to foragers and nature lovers. Recommended selling price is R200 and the guide can be ordered directly from Struik's new online store. 🗱





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# THE BACK PAGE, BY BLOMMETJIE

# Waste not, want not

have of late, (and wherefore I know well...) become obsessed with recycling, and using stuff as sparingly as possible. Much of this, I know, comes from my childhood where a regularly repeated motto in our family was "waste not, want not". As a kid I never worked out what it meant, but I well remember the preachy tone of voice in which my mother delivered it and I got the gist that willful consumption for its own end is not good.

More latterly, of course, one can look around at the litter and mess and pollution, and see for oneself just how horrible much of our world looks.



A lot of this is as a result of the explosion of single-use packaging, particularly stuff made from various types of plastic ~ much of which is not only non-returnable, but unrecyclable, too. And there's no doubt that in this country our woeful education system hasn't inculcated into many young minds the ethos of not littering, cleaning up, environmental damage etc, so the idea of tossing one's rubbish out of a moving car window, or simply putting it into the street outside one's house, seems neither destructive nor antisocial to large numbers of South Africans. And then there are the vast majority of municipalities throughout the country which have simply collapsed, and for whom looting the available funds holds a higher priority than emptying rubbish bins or cleaning up litter. And, I also find that the drive to reduce, re-use and recycle isn't helped by the visual messsaging on packaging, which doesn't seem to me to be either uniform or logical.

Older folk will remember the "Zappit in 'n Zibi-blik" campaign which, considering I can remember it when it is now probably 50 years old, says something for the catchiness of the slogan.

More recently came the logo attached to much packaging of a rubbish bin with a stylised stick-man next to it pictured throwing something away. And now, in an attempt to make the whole thing more efficient, some ponytailed designer has come up with the international system for recycling of three bold arrows chasing each other in a sort of triangle with, inside, a number, from one to seven, each number denoting a different type of plastic, some of which can be recycled, and some of which can't. You can see the different ones here.

The problem is that they're all mixed up. So Categories 1 and 2 can be recycled, but 3 can't. And so on.

It would have been more sensible if all the recyclable categories had been grouped first, and all the non-recyclables last. But, frankly, the whole thing is farcical. There's a thriving recycling industry in South Africa, run largely as informal businesses, by the waste pickers who one sees, now, throughout the country on dustbin day. They know exactly what to select from your rubbish for recycling and what to leave, because their livelihoods (meagre as they are) depend on it. And if you start to analyse the packaging of the stuff you buy you will be astounded, as I have been, just how much is NOT recyclable. The problem is, of course, that it's too late once you've bought it. You've simply added to the waste problem, however keen a recycling fanatic you may be.

What needs to change (and I need to change too) is our mindset. We should be consciously examining the packaging of a product before we put it in our supermarket trolleys. If it's non-recyclable, put it back on the shelf and look for an alternative brand in other packaging. For there are alternatives, and if they're not available in your store, look for them elsewhere. Manufacturers and retailers will soon get the message, when they see their sales drop off, and work out that consumer power has, once again, got them on the ropes. Which one hopes are recyclable, of course. \$\mathbb{3}\$



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