

SOUTH AFRICAN SMALLHOLDER

**DEC 2022/JAN 2023
EVERYTHING A SMALL FARMER NEEDS**

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Next edition:
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Eco-friendly rat control
Combating powdery mildew
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Welcome to the future



Greta Thunberg was right, at least partially. She chose not to attend this year's international Cop27 climate change talkfest held in Egypt's Sharm El-Sheikh resort on the Red Sea. Her reason? She thought it would be a waste of time. (Well, maybe, although seeing that she refuses to fly anywhere the logistics of her getting there would probably, perhaps dauntingly, have involved camels and feluccas as Egypt's resorts are largely and mainly connected by air services).

Was Cop27 a waste of time? Yes. And no.

The glass-half-full take on the outcomes of Cop27 is that, in a marathon end-debate that ran over the scheduled end of the event by hours, delegates at last agreed that rich, mainly northern hemisphere nations, (who have caused the most damage through their higher greenhouse gas emissions) should compensate developing, mainly southern hemisphere, nations for the damage that rising temperatures have caused.

This means that in theory South Africa, for example, should receive recompense to help pay for the repairs necessary following the KwaZulu-Natal floods.

Great idea, and probably very necessary to help poorer nations to recover from natural disasters, flooding, landslides and the like, and to adapt to the changing realities of sea level and temperature rise. Now here's the problem: Using KZN as an example, how does one quantify to what extent the flood damage was caused by extreme weather generated by climate change? We know, for example, that many of the houses destroyed in the floods were built on inherently unstable ground, within known flood contours and often without planning permission or proper plans. We know also that much of the flooding was exacerbated by poorly-maintained storm-water drainage, poorly maintained roadways, embankments and other infrastructure. How does one quantify the effect and value of that self-made

cause in relation to the overall cost of the repairs necessary to return life to normal?

The glass-half-empty view of this one solitary decision is to decry the fact that this was the most momentous decision arrived at during Cop27.

Compensation for damage already done. That's it.

For it is assumed that we should still be striving to cap global temperature rise to 1,5°C, and while this was loudly trumpeted at Cop27 no great concrete progress was made on the nuts and bolts of how.

Because even a modest 1,5°C global cap will require such a fundamental change in the lifestyles of the world's now-eight billion inhabitants that it will destroy industries, and thus jobs, economies, livelihoods, and lives. It will require the almost total cessation of the use as we know it of fossil fuels, ie coal, gas and oil, and thus of surface and air transport, and mechanised agriculture, etc.

Or, take the simple fact that the world's population has now exceeded eight billion. No amount of sustainable energy, or sustainable agriculture, is going to make up for the fact that, at eight billion and still growing, the world's population itself is probably unsustainable. As Marilyn Monroe once said "something's gotta give."

But it's not all gloom and doom. It might be too little, and too late, but annual talkfests such as the Cop meetups, and publicity thereof, has largely started, and continues to invigorate, a general groundswell of sentiment and enthusiasm towards change.

Thus, it's almost as if the grand matters debated and agreed at Cop are in fact secondary to the efforts being made by private individuals and companies to develop, install and adopt renewable energy setups. That, at least, is some good news.

~ Pete Bower, Editor

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FRONT COVER

Donkeys are gregarious. Happy holidays!

Useless millennials: A millennial strikes back

Sir ~ The author of your November letter "Consumerism is driving climate change" went to great pains to list his issues with the "Millennial" generation ~ including that we're constantly on our Playstations and in "tattoo parlours". Given the state of our Postal Service I think it is safe to assume the author did not post you a handwritten letter and rather emailed or sent it to you via text message. Technology which, although invented decades earlier, has been fine-tuned and popularised by the millennial generation he is so disdainful towards. The antiquated notion that Millennials (or even the younger Gen Z) are pre-occupied with our screened devices reduces technology to nothing more than a plaything. When in reality, it is that same technology that has given us pretty much everything modern society exists by ~ key advances in banking, medicine, engineering and agriculture. The sentiment that young people are doing nothing to stop or combat climate change is incredibly damaging to the many efforts being undertaken around the world by people 40 and younger in a bid to reverse some of the damage already done.

In two separate studies undertaken in 2021 by Deloitte and MasterCard, it was found that the environment plays a key role in South African Millennial and Gen Z life, with more than 89% saying they considered climate change when making purchasing decisions. In fact, when asked what they consider to be the greatest threat facing society today, 50% of Gen Z respondents said the environment ~ 13% more than the global average.

I can't claim to speak for all Millennials, because even though the author tried to write us off as a collective we are, in fact, not one homogenous group. But I can guarantee that the people I know, colleagues I work with and people I interact with online are not frequenting tattoo parlours and playing Playstation instead of being active members of society. (Believe it or not, one can have tattoos and also a job.) We are participating in democracy, driving the economy, encouraging social change and will be the key to solving the climate crisis ~ if Baby Boomers haven't already ruined the planet for us.

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Vaccines: OBP turns to weather service for help

South Africa's only licensed animal vaccine manufacturer, Onderstepoort Biological Products (OBP), has announced it is working with the SA Weather Service (Saws) to ensure weather-related vaccines are available in time for potential disease outbreaks.

In a recent statement OBP said: "With the assistance of the Saws, we are aware and have observed the weather events leading to persistent rains in certain parts of the country, likely to lead to disease outbreaks."

As one observer commented: "Considering Onderstepoort north of Pretoria has been the site of a veterinary research institute since 1908, and considering the dedicated vaccine research and manufacturing unit was established in 1968 ~ more than half a century ago ~ one would have hoped that OBP has had plenty of time to observe South Africa's seasonal weather patterns, and to plan the production of vaccines accordingly."

On 1 December, the organisation announced the following dates for vaccine delivery:

☐ African Horse Sickness vaccine: This vaccine is undergoing standard quality control testing and will be available within days after QC test that take seven days.

☐ Bluetongue vaccine: Will be available before 20th December.

☐ Lumpy Skin Disease vaccine: This vaccine is available in stock.

☐ African redwater, Asian redwater, tick-borne gall sickness and heartwater vaccines: These vaccines will be available from the week ending 2nd December.

☐ Rift Valley Fever vaccine (live) is available, and OBP is currently producing other batches which will be available end of January 2023.

At the time of going to press (early December) it was unclear whether OBP had met these goals.

Unfortunately, as responsible horse owners will know, at least the first dose of the African Horse Sickness vaccine should have been given to equines in affected 'red zones', as early as October.

In both September and October the *Smallholder* reported wide-spread shortage of the vaccine.

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Rabies case diagnosed in Ekurhuleni

Pet owners in Ekurhuleni should be on high alert following the confirmation of a case of rabies in Kempton Park West.

This comes after a stray dog that was picked up in the area, close to China Mall, later presented with rabies symptoms. After confirmation of the diagnosis by Gauteng's State Veterinarian, the dog was euthanased.

All pet owners, according to the Animals Diseases Act, are required by law to vaccinate their pets against rabies. The virus affects both domestic and wild animals, and people are encouraged not to approach suspected rabid animals ~ particularly stray dogs or cats. On smallholdings, wild animals such as the mongoose can also carry the virus and should be avoided.

Suspected and known rabies cases must be reported to a state or private veterinarian, Animal Health Technician or the police.

Symptoms & Management

Animals that have rabies secrete large amounts of the virus in their saliva, so the disease is primarily passed through a bite from an infected animal. It can also be transmitted through a scratch or when infected saliva makes contact with mucous membranes or an open, fresh wound. The risk runs highest if a pet is exposed

to wild animals.

Initially, a dog that has become infected may show behavioral changes such as restlessness or nervousness, both of which may present as aggression.

Friendly dogs may become irritable, while normally excitable animals may become more docile.

A dog may bite or snap at other animals, humans and even inanimate objects. They may constantly lick, bite and chew at the site where they were bitten. A fever may also be present.

As the virus progresses, an infected dog may become hypersensitive to touch, light and sound. They may eat unusual things and hide in dark places. Paralysis of the throat and jaw muscles may follow, resulting in the well-known symptom of foaming at the mouth. Disorientation, lack of co-ordination and staggering may occur, caused by paralysis of the hind legs.

Other classic signs of rabies include loss of appetite, weakness, seizures and sudden death.

Once symptoms appear, there is no treatment or cure and the disease is fatal.

Humans that have had contact with rabies-infected animals must wash the wound well with soap under running water and immediately contact their doctor to receive preventative treatment.

This treatment must be administered immediately, or the virus will become fatal in the human, too. 🌿

VACCINES

From page 4

Time will tell what effect this has had on the spread of this virus.

The problem, as previously reported, is that OBP's facility at Onderstepoort has been allowed to fall into catastrophic disrepair, not only of its manufacturing equipment, but also of its financial and governance systems. The organisation, however, has released the following reassurance: "As a business, we continue

working on our equipment maintenance and repairs programme, whilst putting in place sustainable business continuity strategies.

OBP's facility and equipment strategy comprising of short, medium, and long-term repairs, replacements, and augmentations, are being implemented. This strategy was necessary to avert future production disruptions." 🌿

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Rabbit disease found in SA for the first time

Rabbit owners in the Western and Northern Cape provinces are warned to be on the lookout for signs of Rabbit Haemorrhagic Disease (RHD). This comes after the Dept of Agriculture, Land Reform & Rural Development (Dalrrd) announced an outbreak of the disease among wild rabbits and hares in the Karoo area.

State veterinary services, private veterinarians and the Dept of Forestry, Fisheries & Environment were involved in field investigations. Postmortems were performed and samples collected to confirm the cause of the deaths. Diagnostic tests confirmed the cause of death as RHD

RHD is a disease caused by a virus (Calicivirus) and this is the first detection of the disease in South Africa. The disease results in a high number of deaths in rabbits and hares.

Animals die suddenly with bleeding in the organs such as the liver, kidney and spleen.

At this stage it is still unclear how the disease could have entered the country, since the importation of rabbits and hares is not allowed.

Control of RHD in rabbitries relies mainly on vaccination, but the vaccine is not available in South Africa. As a result, rabbit owners are being encouraged to

implement strict biosecurity measures in rabbitries and anywhere where rabbits or hares are kept. Rabbit owners are advised to ensure that their rabbits are secured and must prevent any contact with other rabbits or hares, either directly or indirectly through people or equipment.

According to Dalrrd: "Biosecurity measures are difficult to implement in wild populations. The occurrence of RHD in the Karoo is therefore of great concern, as our indigenous Red Rock rabbit, endangered Riverine rabbit and hare species are highly susceptible to this disease." 🌿



Red rock rabbit.

EVENTS

KragDag heads to the Cape

Popular Gauteng self-sufficiency expo Sakeliga KragDag will host a standalone show in the Western Cape in 2023 for the first time.

The show will take place on 17 and 18 February at the Môreson farm in Malmesbury and will follow a similar structure to its Gauteng-counterpart.

Visitors can expect exhibitors in the sectors of energy, construction, water, food security, safety and security, DIY, education, art and handmade goods.

There will also be an agricultural section to the show showcasing sustainable developments, technological innovation and smart farming practices.

There will be plenty of food stalls and entertainment on the go as well.

Meanwhile, the hugely successful Gauteng show has been set for 9-12 August 2023, taking place at Diamantvallei, Rayton as usual.

Exhibitors and visitors are encouraged to check www.kragdag.co.za for more information. 🌿



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IN THE GARDEN

Kale: It's not like cabbage at all

When people grow crops to feed their families they seldom mind if the plant is indigenous or introduced. When an introduced crop has been planted for generations of human time, and becomes distinct enough to be considered an heirloom crop, it can safely be said to belong to the people who grow it and the place where it is grown. In Africa there are truly indigenous (from the continent) Brassica crops, and long past introduced Brassica that together can be considered the "African kales and mustards". The vastness of Africa plays host to a myriad peoples and habitats.

There are two indigenous kale type plants that were domesticated in Northern Africa thousands of years ago, and spread by trade throughout the continent. Trade and settlement from outside Africa have introduced at least two, perhaps three, further species that have become distinct cultivars that are recognisable African leafy vegetables.

These vary from easily obtainable to rare, but all

Another in our series of articles on "orphan" and unusual crop species, courtesy of the University of Pretoria's horticulturalist Jason Sampson.

deserve a place in a food garden, with at least two having huge potential as commercial crops.

The first of these is an heirloom cultivar of *Brassica juncea* or *B rapa* (there is some confusion in the literature but the author feels the former is more likely) grown for generations by the VhaVenda and VaTsonga people and commonly known under the name of Mutshaina, or M'shai for short, or Tsunga in Zimbabwe.

This is a large leafed mustard with a delicious, almost meaty texture and a mild mustard taste without much of the bitterness of most cultivated mustard greens. This plant is eagerly consumed by South Africans in the know, and deserves to be grown much, much more widely as an heirloom crop. The author grows this plant for consumption by his own family in both summer and winter (winter crops produce larger plants), and has had little success in substituting it for other mustard cultivars such as Florida broadleaf, as the imposter is quickly discovered by the people eating it!



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The second featured plant is a very unusual perennial kale called Kovu or Covu by most of the people growing it. This plant is widely distributed in southern Africa and is a tall (to 2m on a long, spindly stem) cultivar of *Brassica oleracea* var *acephala*.

The plants seldom flower or set seed, although an almost identical cultivar in the same group called Chomolia grown in Zimbabwe does apparently set seed, but both are normally propagated from cuttings of the small branches the plants put out on the main stems, and suckers off the root system.

The plant's leaves are harvested from below the crown, and form a useful supply of fresh greens year-round, although it can be a bit of an aphid magnet in summer.

The source that these plants are derived from is probably introduction by the Portuguese through settlement and trade as it is similar to some heirloom European cultivars of kale, but it is distinct enough to be recognised as its own, African landrace or cultivar group.

A newly available (in South Africa) plant which seems to belong to the Northern African indigenous *Brassica nigra* (or black mustard) has been on sale for the last couple of years as seed under the name of "Malawi

wild mustard/-Kamuganje". The author has tried this, and can report that it is a good grower in both early summer and winter, with a reasonably deep root system and thick textured, mildly mustard flavoured leaves. The last member of this quintet is still very difficult to find in South



Brassica carinata mature leaf.

All photos: Arne Verhoef

Africa although it is grown in Zimbabwe under the name of "Chembele Dzagumana", although it is better known as Ethiopian (or Garlic) Kale overseas, and *Brassica carinata* in Latin. This ancient crop from Ethiopia which was first domesticated more than 6 000 years ago is widely grown throughout Africa. It has a deep taproot and is probably one of the most

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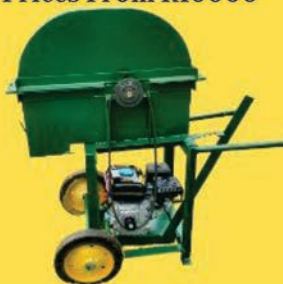
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How to combat mildew on your vegetables

Mildew is a common fungus that affects a wide range of plants. There are two main types of mildew, namely powdery and downy. They are easily identified and typically appear as light grey or white powdery spots usually found on infected leaves. During the summer months, powdery mildew is most prevalent and gardeners should be on the lookout for signs of the fungus in humid conditions.

Fungal diseases such as powdery mildew and downy mildew affect cucurbits such as cucumbers, pumpkins, squashes and melons, as well as peas, onions, radishes and brassicas such as cabbage, cauliflower,

kale, Brussels sprouts, broccoli. Nightshades, including tomato, eggplant and peppers, can also be affected. And, powdery mildew can affect flowers including chrysanthemum, begonia, dahlia, phlox, sunflower and zinnia.

Although rarely fatal, if left unchecked it can eventually cause serious harm to plants by robbing them of water and nutrients. Most infections cause minor damage such as leaves turning yellow or becoming withered or distorted, but plants can also become weak, bloom less, and grow slower.

Both powdery and downy mildew produce light-coloured masses of spores on foliage.

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IN THE GARDEN

From page 9

drought tolerant kales the author has ever grown. It is pest resistant, can be grown in summer or winter, has thick textured, almost succulent leaves with a faint garlic flavour when raw. It deserves to be grown much more widely, in the hope that it becomes more popular in future.

This plant is also an industrial oilseed crop overseas, with the oil being considered ideal for processing into jet fuel, of all things.

Fresh kale and mustard greens always have a good market potential. Mutshaina and Ethiopian Kale probably have the potentially highest interest in South African markets, and the latter has a huge potential as a fresh salad ingredient.

For more information on this, or other orphan crops, please contact Jason Sampson at jason.sampson@up.ac.za. 🌱



M'shai leaf grown and displayed by the supplier of the photograph, Arne Verhoef.

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From page 11

Downy mildew develops spores only on the undersides of leaves, whereas powdery mildew will appear on both sides of leaves as well as shoots, buds and sometimes flowers. Downy mildew is a disease that appears in cool, wet conditions and is generally stopped by warm, dry, windy weather. Powdery mildew thrives when foliage is dry and the weather is warm; wind spreads the spores to other plants. There are some ways to prevent powdery mildew from damaging crops in summer.

- ☐ Thin out existing susceptible plants to improve airflow within the plant.
- ☐ Maintain adequate spacing between plants and keep them far enough away from walls and fences to ensure good air circulation and help reduce relative humidity.
- ☐ Remove dead or diseased foliage.
- ☐ Disinfect pruning shears between uses, with a solution of diluted household bleach.
- ☐ Powdery mildew spores can't germinate or grow when foliage is wet, so overhead watering is sometimes recommended as a preventative on highly susceptible crops.

If preventative measures have failed and you have noticed signs of powdery mildew on your crops, there are a number of methods you can try to eradicate the issue:

- ☐ Baking soda solution: Mix one tablespoon baking soda and ½ teaspoon dishwashing liquid in three

litres of water. Spray liberally, getting to both the top and bottom leaf surfaces and any affected areas. This will also work with sodium bicarbonate (bicarb).

- ☐ Milk: This method originated in Brazil in the late 1990s. Mix one part milk to two to three parts water and spray liberally. While the science behind this solution isn't fully understood, it seems to work rather well, especially on marrow, melons and cucumbers. It is believed that naturally-occurring compounds in the milk not only combat the disease, but also boost the plant's immune system.
- ☐ Garlic: Blend two bulbs (a whole head, not two cloves) of fresh garlic in a litre of water with a few drops of liquid dishwashing soap. The liquid should be strained through cheesecloth to remove solids and then refrigerated. Then, dilute the concentrate 1:10 with water before spraying. The active compound alliin, will help prevent germination of powdery mildew spores. Once the spores are active, though, a higher concentration is needed to cure powdery mildew.
- ☐ Neem and other oils: Most commonly used to treat houseplant pests, neem oil can be added to your baking powder or bicarb mixture. You can also use canola oil at a rate of two to three teaspoons per one litre. Spray or wipe down infected areas.
- ☐ Pruning: Trim or prune all affected leaves, buds, branches and flowers and dispose of adequately. Do not compost any damaged foliage as the spores can spread and persist in your composted material.
- ☐ Vinegar: Some organic experts recommend frugal use of apple cider vinegar for mildew, among other things. Mix three tablespoons of cider vinegar (5% acidity) with three litres water and spray in the morning on infested plants.
- ☐ Pesticides: If you are using store-bought fungicides, whether chemical or organic, make sure to check the ingredients for sulphur as this is the compound that will directly treat mildew. 🌿



Powdery mildew on vegetable leaves.



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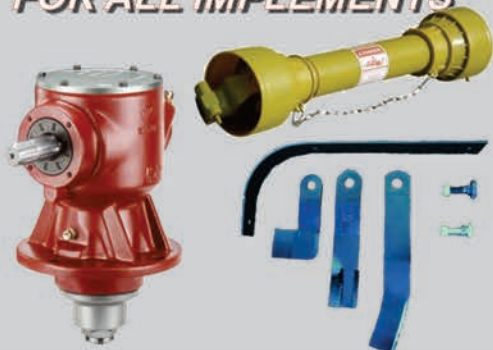


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Managing rodents on your smallholding

With their stores of animal feed and fodder, and nice, warm stables, smallholdings are always going to be targeted by mice and rats and there are a number of ways to deal with this problem.

Using poisons creates a threat to domestic pets, owls and other natural predators, so smallholders consider other solutions. We can look at ways of killing the pests or we can look at repellents which will keep them away from our homes, stables and storage rooms.



Common rat.

Chemical poisons often contain anticoagulants, which cause thinning of the blood, leading to the animal dying of internal bleeding. But, because nobody wants a roof space littered with the rotted

corpses of dead mice and rats (and the attendant smell while they rot) such compounds often include an ingredient that induces extreme thirst. This forces the rodent to urgently seek water to drink, often resulting in it leaving the relative sanctuary of the roof and descending to ground level to find a source of water.

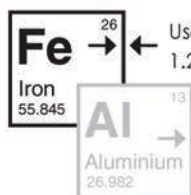
Once its thirst is quenched it starts to die, hopefully without re-entering the roof. This is a slow and painful death in the open. If a dog, cat or bird eats a poisoned rodent, it will suffer what is called secondary poisoning and it will probably suffer negative effects as well.

These may be indirect, where the liver functioning is affected or the immune system compromised or the effect may be fatal. Avian experts estimate that 85% of birds that eat poisoned rodents will die. This applies to owls, kites, kestrels, hawks and eagles. Eating poisoned rats and mice can also be fatal to mongooses, genets, servals and snakes.

So to prevent the creation of a toxic food web, we need to choose measures which will not have secondary repercussions.

Continued on page 16

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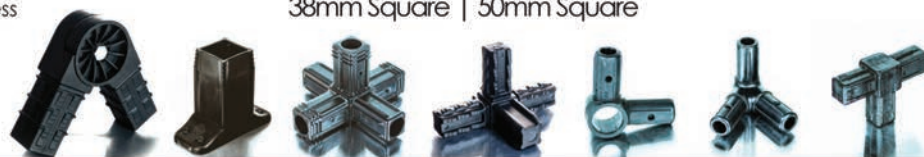


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ON THE PLOT

From page 15

There are rodenticides which are based on natural ingredients. A common ingredient is cholecalciferol, which is a form of vitamin D3. This compound causes loss of appetite and it also deposits high calcium loads in intestines and blood vessels. The two effects result in death within four to seven days. The manufacturers maintain that the rodent feels discomfort but no pain.

The compound is regarded as being of very low risk to birds. Dogs and cats would have to eat a large number of rats or mice poisoned with cholecalciferol to be affected. It is still very important that the label instructions are followed carefully. It is best to put out the bait in bait boxes or where it is secured and out of reach of pets and children.

Look out for products that are endorsed by the Griffon Poison Information Centre as being of low secondary poisoning risk.

It is however far safer, from a secondary poisoning point of view anyway, to focus on deterrents. Scent, light and sound can be used to stop rodents from coming into your buildings.

Rodents cannot stand the aroma of mint. Using pure peppermint and spearmint essential oils has been known to eliminate rodent problems safely and effectively. Be sure to use real, natural essential oils. Synthetic fragrances are not going to work.

If you intend to spray outside buildings such as feed storage rooms or poultry houses, pour about 15 drops of oil into a spray bottle and add a few drops of milk. Shake until the oil is emulsified, then add three or four cups of water. If you have a problem in your home, put a few drops of peppermint (or spearmint) essential oil onto cotton wool balls, and leave in cupboards. Use cotton towels, soaked in a solution of mint oil and water. Use ten to 15 drops of the oil for four cups of water. Wring excess water from the cloth, and then place anywhere that rodents may be entering the home, or spending time. As mice and rats generally come out at night while the household is asleep, run an essential oil diffuser for 20 minutes before going to bed. This will spread the aroma molecules throughout the house.

You will need to keep replacing the cotton wool balls



Field mice.

or towels regularly as the scent will wear off. If possible, plant mint outside the home and near stables, feed rooms, livestock pens and chicken houses. Mint grows quickly, and profusely, as long as it is watered enough. Also, you will have an almost endless supply of fresh mint to use indoors as a deterrent. Fresh leaves can be left in problem areas as well.

Light is off-putting to these pests. There are strobe light products which disturb and disorientate the intruders, forcing them to leave. These would be good to use in a feed room, where they would not affect your livestock or family. There are devices which combine sound and light. They have an ultrasonic wave repellent as well as an LED strobe light, working on a motion sensor, so that they only work when the rodents set them off. Some of them are solar powered. There is also a plug-in device which combines ultra-sound waves and electromagnetic action to pulse through household wiring. The idea is that this reaches rodent nest sites within walls, ceilings and wall cavities and forces them to leave the building.

The *Smallholder* has not tested any of these devices. Check your buildings for holes or spaces where the vermin may enter and cover them up. If you have trees close to a building cut away branches that the rodents could use as a way of gaining access, especially into your roof. Creepers against your walls also offer places for rats and mice to hide and clamber. 🌿



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Can hadeda poo make your pooch sick?

A recent article on the *SA Smallholder* website about hadedas on plots led to a discussion on our Facebook page about the effect of a dog eating hadeda droppings.

Many people believe that if a dog eats hadeda faeces it will be infected with *Spirocerca lupi*.

S lupi is a large red worm, of about 5cm in length, which lives inside the oesophagus of an infected dog.

The life cycle of this worm begins when a dung

beetle eats dog excrement

which carries *S lupi* eggs.

The eggs hatch to larvae

in the beetle and move to

the muscles. If the beetle

is eaten by a bird, mouse,

lizard or frog, the larvae

then move to the muscles

within what is now a

"transport host". If a dog

eats a dung beetle or a

transport host, the larvae

hatch inside the stomach

of the dog. They then

migrate along the abdominal

blood vessels to the

aorta. Here the larvae

develop into young adults.

Once they have matured,

they move from the aorta,

via the tissues in the chest,

to the oesophagus.

They burrow into the wall

of the oesophagus and

create nodules in which

they live and which vary

in size. The nodule can

also become cancerous

and this cancer can then

spread throughout the

body.

The female worms pass

eggs out through a small

opening. The eggs travel

down the intestinal tract

and are excreted in the

dog's faeces. Dung beetles

eating this stool become

infected and so the cycle

begins all over again.

So where does this leave

the theory that the dogs become infected by eating hadeda droppings?

The veterinary community seems to be divided on the matter.

Dr Perushan Yenketsamy of the Bryanston Avian, Exotic & Small Animal Clinic told the *Smallholder* that he had treated a dog who was yard bound and unable to leave the premises, but who ate hadeda faeces. Sadly it developed *S lupi* and died.

Continued on page 19



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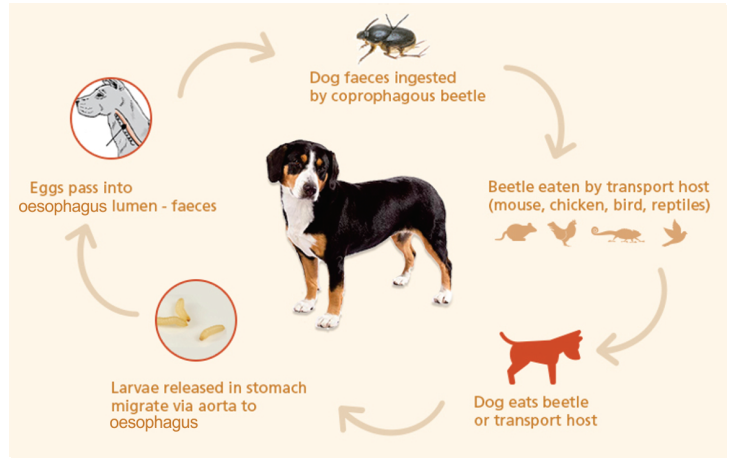
From page 17

In another case he referred to "three German Short Hair pointers that live on a large property and are riddled with parasites because they not only eat hadeda poop but on occasion an actual hadeda." It could be argued that the hadeda that had been eaten was a transport host.

Dr Liesel van der Merwe lectures in the Companion Animal Clinical Studies Department, University of Pretoria Faculty of Veterinary Science. She is adamant that eating hadeda faeces will not result in the dog becoming infected with *S. lupi*.

When asked about this, her emailed response stated: "It is ONLY when a dog eats the transport host (or the beetle) that the worms' life cycle will proceed to maturity and eggs will be passed. Hadedas poo will not have any spirocerca eggs."

The process of infection within the dog can take six months, from the initial infection to the eggs being excreted. Symptoms of the infection



Life cycle of *Spirocerca Lupi*.

can be subtle and when they are observed it is often too late. Infected dogs struggle to swallow, they might salivate, vomit their food and eat it again, they are lethargic or lose weight quickly.

If caught in time, treatment will consist of a series of injections.

Routine de-worming is not effective against *Spirocerca lupi*. There are two products that have been developed specifically for these parasites: Milbemax and Advocate. It is recommended that both these products should be used monthly as a preventative measure. 🌿



Hadedas are common across South Africa.

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ANIMAL HEALTH

Take care of your horses' hooves in wet weather

Wet weather, and more specifically the mud that results, is the bane of a horseman's life. That's because there is nothing like thick, glutinous mud to loosen and suck off a horse's shoes, particularly those of a thin-hooved thoroughbred.

Mud acts in a number of ways on a shod horse's hoof. Firstly, the moisture in the mud will inevitably soften the walls of the hoof, making it easier for the cinch of the nails (the part that emerges from the wall

of the hoof and is bent over the wall to hold the shoe in place) to work loose. Secondly, aided by water, fine particles of soil work their way into any space that may exist between the shoe and the hoof, gradually building up to exert greater pressure on the cinch. And thirdly, with the shoe and the hoof firmly planted in, and fully sealed by, mud, there is an inevitable suction when the horse lifts its hoof. If this cycle is repeated often enough a missing shoe is the inevitable result.

Fortunately, there are some things a horse owner can do to ensure that this unnecessary, and expensive, little inconvenience doesn't occur.

The first is to prevent, as much as possible, prolonged exposure to mud. Attention to normal hoof care is therefore important, with the hoof being kept as dry and clean as possible. This means regular picking out with a hoof pick to remove mud from the frog. In former times, too, horsemen would paint their horses' hooves with a mixture of Stockholm Tar and neatsfoot oil in an attempt at hoof hygiene and protection.

Continued on page 21



Check your horses', shod or unshod, hooves frequently.



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Tilapia farming takes off in SA

If you go shopping for your household, and if your household diet includes fish, you surely will have noticed how much more readily tilapia is available, either as whole fish, or in fillets, sometimes deep frozen and sometimes fresh on ice, some of which is locally-farmed, some imported from Africa, and some from overseas.

There is no doubt that this is an accelerating trend, brought about by two developments.

Firstly, "traditional" marine white fish such as hake and kingklip is becoming more expensive as catch costs increase in obvious areas such as fuel costs and crew wages, but also by the fact that these species are becoming harder to catch due to overfishing.

Secondly, what was a rarity, consumed only by African immigrants from Malawi, Mozambique and further north who are familiar with wild-caught tilapia, has now become more commonplace as a growing, lucrative aquaculture industry develops in

South Africa.

Indeed, tilapia has become the third largest species of farmed fish worldwide.

Tilapia is a member of the "kurper" family, which is an African species. *Oreochromis niloticus* is the largest commercial species, with *O. mossambicus* (blue kurper) and *Tilapia coptodon* (rooibors kurper) being two indigenous species which are farmed, and which will be familiar to anglers throughout South Africa.

The flesh of tilapia is white and soft, and delicately-flavoured, with none of the muddy flavour so often found in South Africa's common fresh water species. Grown optimally in a farm it reaches harvestable size within six months, giving the consumer an excellent source of protein at relatively low cost (certainly when compared to marine white fish).

And here's the good news: If you enjoy white fish in your diet you can even grow your own (and have a

Continued on page 22

From page 20

Secondly, regular checks of the hoof and shoe should be carried out to ensure that no loosening has occurred, and enabling instant remedial action to be taken to refasten the shoe.

How can one ascertain if a shoe is coming loose?

Simply lead the horse over a paved or bricked surface and listen to the sound of the footfalls. If you notice a clanking sound from one or other footfall note from which foot it is coming and tighten the shoe appropriately.

Tightening a shoe back in place is not difficult and, at best requires only one specialist tool which can anyway be substituted, Heath-Robinson-style, by a large pair of pliers or a blunt chisel and a hammer. The correct tool for the job is a pair of crocodile pliers.

ANIMAL HEALTH

This is a pair of long, thin-nosed tongs not unlike those used by a blacksmith to handle hot metal items in the forge, except that one of the jaws of the tongs is bent upwards in a curve, in much the same way that an upper lip curls in a sneer.

To use a pair of crocodile pliers the (cleaned) hoof is raised and the flat jaw of the tongs is positioned under the shoe, while the curled jaw engages the cinch of the nail above the wall of the hoof.

Gently closing the pliers results in the shoe being pushed back into position while the cinch is pulled down on to the hoof wall.

This needs to be done gently, however, as too much pressure on the jaws will result in the cinch tearing a large hole in the wall of the hoof, even to the point of tearing away a chunk of wall entirely. 🌸

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AQUACULTURE

From page 21

bit available for sale) in a fish growing tank that is even suitable for installation in a suburban hobby greenhouse.

A number of such units are available on the market, either as straightforward aquaculture (fish farming) systems, or as more complicated aquaponics setups, where the waste products from the fish are used as nutrients for plants being grown hydroponically.

Among the pure aquaculture systems is one developed and perfected over many years by a lifelong specialist in African fish farming, David Fincham of Johannesburg.

His company, David Fincham Aquaculture, offers introductory talks and advanced training courses to aspirant fish farmers, as well as on-site consultancy services. And the company's Aquaculture Production



Tilapia: *Oreochromis nilotica*.

Unit (APU) has been carefully refined to be a modular system that can be as small as one tank, or as many as 16 in a 40m by 10m polytunnel.

Each unit is supplied

in kit form with all the components, eg the water pump, filter etc pre-plumbed for quick assembly. The heart of the system is the round 10 000 litre growing tank constructed out of a sturdy flexible PVC liner contained in a PVC pipe frame. The tank is connected to a custom-designed two-stage filter which removes solid waste such as fish faeces, algae and unused food from the water, while also incorporating an aerobic biological section where ammonia, nitrates and nitrites are broken down so that they don't become toxic to the fish.

A simple daily flush cycle removes 40 to 60 litres of the concentrated waste from the filter, which can be very fruitfully used to water and nourish a garden (this is the material which provides the nutrients for plants in an aquaponics set up).

There is also an air pump, to aerate the water in the growing tank, and the biological filter, and a water pump for circulating the water through the filters. Depending on where and how the tank is housed some form of heating may be necessary in colder climates, but without this the unit consumes no more than 300W of electricity, but this must be a constant round-the-clock supply, so some method of back-up in the form of an inverter or UPS may be necessary given the country's ongoing Eskom load-shedding

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problems.

Once the unit is constructed and set up, a process that takes no more than a couple of hours using no more than a spanner and a screwdriver, up to 250 fingerlings are introduced, and 250 fingerlings are added each month thereafter for a further five months.

The Fincham-designed APU is stocked with *Oreochromis niloticus* fry genetically selected by a Dutch aquaculture company named Til-Aqua International. The Til-Aqua tilapia used have YY-chromosome male genetics, allowing farmers to work with only male stock and resulting in superior growing rates. The fish are also selected for their red genes, making for an attractive red-tinged fish.

The adult fish are harvested when they reach marketable size, with the younger age cohorts simply left behind to grow further.

Thus, from each unit after the initial post-installation period there is an almost constant harvest of marketable fish. And even in a single-unit context enough fish could be removed each week to ensure a constant source of fresh fish in a household's diet. Logic tells us that from a monthly cohort of 250 fingerlings one can expect 200 or more plate-sized fish each month after the initial six months, given some mortality losses along the way. That's plenty for one or two

tilapia meals a week for a family of four or more, with a small additional stock available for sale.



Fincham has perfected the system to be flexible in that a wide variety of fish species can be grown successfully, including catfish, koi and others.

While setup costs will vary depending on such factors as the ground levelling and surface preparation necessary, the installation of suitable electrical connections and cabling for the pumps, and the heating arrangement necessary in colder climates the base price of a single unit as supplied in kit form is around R40 000 VAT excluded.

For more information: David Fincham Aquaculture, tel 011 678 1906 or 082 048 3382 or go to <https://www.tilapiafarming.co.za/> for full details of the system and the economics of small, medium and full-scale tilapia production.

10 000 litre production unit from David Fincham Aquaculture.

Tilapia in the kitchen ~ some tasty ideas

So, with an aquaculture tank set up and running and fresh fish regularly available to the household chef, what can one expect to find on one's dinner plate?

Like all flat fish it can be descaled and gutted, and the skin scored in a cross-hatch pattern with a sharp knife, and cooked over open coals so that the skin is lightly charred and the flesh imbued with the smokiness of the fire.

Or it can be treated in the same way that one treats a delicate, soft white fish such as sole: poached, fried

or grilled and served with traditional French sauces as are found on sole Colbert, meuniere or bonne femme.

It can be minced and made into a delicate white-fish paté or fish cakes.

Or, skinned fillets can be lightly coated in seasoned flour, quick fried in a light oil and served with lemon wedges and French-style *pommes frites* and a dressed green salad, in an African take on the traditional lakeside perch dish enjoyed along the shore of Lake Geneva named filet d'perche. 🌿

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MACHINERY

How to choose a brushcutter to suit your needs

Even if you have only a modest patch of garden lawn on your smallholding, there will be grass growing along fencelines, driveways and sidewalks, as well as around important infrastructure such as water tanks and pumps, that will need periodic cutting.

Therefore, one of the most useful and versatile pieces of machinery you can acquire will be a brushcutter, which is sometimes conflated with its smaller cousin the string trimmer, known in Australia as a strimmer, and sometimes also called a weedeater (which is a brand).

If the plethora of names given to these devices is a hint of anything, it is to show the vast variety of models available, and the uses to which they can be best put.

And while it is common for newby smallholders to make the mistake of buying a machine that is too small for their purposes (we have all done it) because it is all they can afford at the time, manufacturers design their machines for specific work cycles. So, just as the “goedkoop is duurkoop” option would be to buy a machine designed for an urban townhouse garden and then wonder why its motor burns out in one season when confronted by one's smallholding, so it will be overkill to buy a top-of-the-range machine designed for municipal use with an operating cycle of eight hours a day for six days a week.

Here, therefore, is a guide to what is available across the spectrum of the trimmer and brushcutter market. At the smaller end of the market are the bent-shaft models, often powered by mains electricity (a long extension cord is thus necessary with all the inconvenience this entails).

Small models exist with the motors positioned at the bottom of the shaft right above the cutting head, and at the top.

When the motor is at the top the curved tube of the shaft contains a flexible drive contained in a series of bearings along its length and connecting the motor to the cutting head.

Bent-shaft trimmers are going out of favour with manufacturers.

On these small models the



Husqvarna 143R-II, a mid-range machine ideally-suited to most smallholdings

cutting is done by nylon line, usually two lengths emerging from a storage container through two steel ferrules positioned opposite each other. The storage cylinder contains a spring-operated mechanism whereby tapping or bumping the string head on the ground while it is spinning causes another short length of line to emerge. Such heads are referred to as “bump feeds”.

Newer battery-powered electric models are now available that obviate the need for a mains cable.

The advantage of electric models, whether mains- or battery-powered, is that they are much quieter than their bigger petrol cousins with, also, no emissions.

The nylon line heads of both the smallest models and their bigger brothers are useful for trimming soft plants such as grass growing up against fences and brickwork, and weeds growing in paving. A certain amount of practice is required to ensure an efficient cut without wasting line as it tangles with fencing or wears down when encountering bricks or paving. Another use is to turn the cutter on its side, so that the strings are spinning vertically. In this position one can quickly and accurately trim away grass that is encroaching one's flower beds, ie, as a makeshift edging tool.

In addition to the newer electric and battery models small petrol powered bent shaft trimmers are also



Electric bent-shaft trimmer from Stihl



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Users will find these small trimmers ideal for work in their gardens, but too small for use on the larger expanse of a smallholding. For this a two-stroke straight shaft brushcutter is more suitable.

Apart from having straight shafts, (with the angle of attack of the cutting head being levelled with the earth through a small gearbox at the bottom of the shaft) brushcutters give users much greater flexibility, as they can be fitted either with a nylon line cutting head or a blade.

While the nylon line head performs in the same way as it does on the small machines, trimming lawn grass up against brickwork and paving, the blade enables the machine to efficiently cut thicker swathes of veld grass and weeds.

At the top of the range there are also professional models that can be fitted with circular saw blades, enabling them to cut through saplings and hard, woody material such as bamboo.

As the bigger cutters are heavy (at least in extended use) they are usually supplied with a harness which fits over the shoulders and helps to distribute their weight. The machine itself is attached to the harness by a quick-release catch.

To give the operator greater control over the movement of the machine a slightly offset handlebar is fitted, on one side of which is a pistol-grip throttle and on-off switch.

One of the problems of any fast-rotating piece of equipment is vibration, and early machines were very fatiguing to use for any length of time, with one's hands quickly becoming numb. And, woe betide one if one wore a wrist-watch as its mechanism would be quickly destroyed from the shaking.

Happily, brushcutter manufacturers have made great strides over recent years in damping the inherent vibration caused by the engine, shaft and cutting head.

Given the nature of these machines and the use for which they are intended, they are inherently danger-

ous. Although they are fitted with high-impact plastic safety shields to the rear of the cutting head or blade, that is between the cutting head and the operator, the fact that the cutting head is spinning at such high speed can lead to soil, twigs, bits of wire or stone, or glass shards flying off in unpredictable directions, not to mention bits of nylon line and even chips of blades.

For this reason the operator should at the very least wear heavy closed shoes, and long trousers such as denim jeans, although high-impact plastic leg protectors which strap on to the lower leg over one's trousers are supplied for professional use.

And, of course, eye protection is vital. For those who don't wear spectacles safety goggles are best, but spectacle wearers will find these fog up very quickly. But another necessary health precaution, particularly when using a petrol-powered machine, is ear protection from the lasting effects of exposure to excessive noise.

Fortunately, the top brands such as Husqvarna and Stihl incorporate into their product lineup a full range of protective and safety wear, and both supply a combined safety hard hat fitted with ear muffs and a full-face nylon visor which enables one to wear one's spectacles with ease underneath. 🌸

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WATER MANAGEMENT

Use a tarp to quickly harvest rain water

Gauteng is experiencing a gratifyingly wet summer for the third year in a row, thanks to the ongoing La Niña effect. So smallholders in summer rainfall areas may be forgiven for thinking that they don't need to worry about harvesting the rainwater.

However, water is such an important a resource that a prudent smallholder should take advantage of the



A simple tarpaulin and bucket method.

extra while it is available. Because the end of the wet honeymoon is nigh: forecasters are also saying that the La Niña effects will wear off before the end of summer.

The *Smallholder* has often written of harvesting rainfall from the roof and storing it in a variety of tanks. There is another option though and that is to collect and store water that falls in your fields.

South African soil and water scientists have developed the concept of in-field rainwater harvesting that involves creating trenches, contour ridges and hollows.

A simpler way, though, to collect water in your field is by using a tarpaulin. This can be done in a number of ways.

It can be set up near the field where you are growing vegetables or crops. You can also do it in a pasture near where you provide water for your livestock.

If you are going to spread the tarpaulin on the ground, choose a collection area that is higher than the surrounding land. You will want a relatively flat area, but it should have a gentle slope towards the corner closest to the storage area. If it doesn't have a

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Stihl BC230 2-stroke cultivator, 30 cm working width, 75mm tilling depth. Only used for two seasons. **R4 500,00**

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WATER MANAGEMENT

natural slope, you can create one when you are clearing the ground.

Measure your tarpaulin before you clear the ground, and clear a patch that is about 15cm shorter on all sides. Build a raised border of soil so that the water is collected within the ridges.

The larger the tarpaulin, the more water you will be able to collect. Lay out the tarpaulin so that its edges lie over the ridged edges of your collection area.

Place rocks or bricks round the edges to keep it down in the wind.

Cut a hole through the lowest corner of the collection tarpaulin, just large enough to fit the opening of your pipe through and then seal it over with waterproof sealant. It's best to use PVC pipe. Run the pipe down the slope to where you are collecting the water. You can lay the pipe flat on the ground, or dig a shallow trench it to keep it in place.

You can dig a deep hole, which can be lined with another tarpaulin or dam liner, in which to store the water. Or you can use a horizontal water storage tank.

A very simple alternative is to tie your tarpaulin to four trees or posts. The water will collect in the centre



Two examples of funneling water in a field.

and you can scoop it out with a bucket when you need it. Another option is to tie the tarpaulin to higher posts at the back and shorter posts in the front. Place a rectangular trough in front of it so that the water can pour into it when the dip in the tarpaulin fills up and overflows.

Instead of using a tarpaulin you can use polycarbonate roof sheets.

The uses for the collected water depend on the size of your storage capacity. If your tank is large enough, it can provide irrigation during the drier months.

Water stored in the field will also be very helpful if you need to fight veld fires in winter. 🌿

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The Santa Claus myth

Regardless of one's age, there is a cadence to the phases or seasons of the year which culminates with what has become known as the Festive Season.

For, let's face it, one can be the world's biggest grinch, but there's still a buzz to be enjoyed at Christmas. It's all pretty odd, really. Let's look at Christmas, with its Santa Claus story, reindeers, schmaltzy carols, dressed up fir trees, fairy lights and surfeit of food and booze. It's supposed to be about the birth of the Baby Jesus, but religious chronologists have now pointed out that Jesus couldn't have been born around the end of December, but more likely a few months later. So celebrating his birth on the 25th of December is, if nothing else, incorrect.

And it's not as if Santa himself is ancient or traditional. He's nothing more than a marketing gimmick that caught the public's imagination just over a century ago, in the same way that Boney M's tunes have wormed their way into shopping mall canned music at Christmas time.

Nevertheless, Christmas is a time when adults can legitimately lie to their kids and get away with it. After all, how old were you when you tumbled to the fact that Santa, or Father Christmas if you prefer, wasn't real?

I recall being blissfully unaware until I was at least eight before I had my eyes opened to the myth, and that was only because Father Christmas slipped down a small embankment in our neighbourhood while walking between houses ~ and let out a very feminine, high-pitched yelp. Which sounded very like my much older eldest sister.

But as an adult I myself enjoy a bit of dressing up and play acting occasionally, and I did Father Christmas as a paid gig for charity a couple of times when I was younger. Dressed in the very same outfit that my sister

wore when she slipped down the embankment, I would "Hohoho" around a popular sports bar in Cape Town, behaving inappropriately with all the young ladies and giving out promotional perfume samples as gifts.

Why I wasn't arrested for sexual harassment, or at least decked by a jealous boyfriend or two, is one of the miracles of my life.

Later, my reputation as Father Christmas got me a gig playing the part to the families of a quiet street in Observatory, Cape Town.

I need to add here that I am short-sighted, and without glasses, particularly at night, my vision is very blurred. And, of course, Father Christmas doesn't wear glasses.

So there I was blundering blindly down the street, "hohoho-ing" as I went, to the clapping and greetings from the residents on their stoeps, and hopefully to the thrall of the kids among them, when the neighbourhood mutt, a nondescript totally untrainable and ill-tempered woolly mutt, with the grand name of Lucy, but known by one and all as Doggers, took a dislike to this crimson-clad "vreemdeling" and attacked my leg.

Fortunately I was wearing heavy boots so no damage was done. Except that a pooch snapping at his ankle is not something that Father Christmas would have tolerated, I felt sure. And so the good burgers of Observatory were mightily amused when Father Christmas resolved to detach Doggers from his leg with a swift kick, accompanied by some very un-Parliamentary language which included, but was not limited to, "voetsek!"



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LIGHTWEIGHT TRUSSES

Available in:
6m, 9m & 12m