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JULIE 2022

HERB CENTRE

Seeds are building blocks for the future

DAIRY

Farm fresh and good for you - yoghurt.

_D5

KITCHEN

Soul food against the cold

p₁₀



Gardening and growing your own vegetables and herbs have been recognised by generations over centuries as an excellent form of therapy for anyone struggling with whatsoever challenge in life. It speaks for itself that personnel of Hope Hill Rehabilitation Centre just outside Rustenburg in North West are profoundly aware of the nurturing benefits of keeping a small garden and what these can do to restore calm and order in the life of people struggling with addiction. Why not make a note of Hope Hill Rehabilitation Centre's contact details elsewhere on this page if you know of someone or have someone in your family who struggles from any form of addiction. Pictured above Chantelle de Jager and Mxolisi Sithole - both Counselors at Hope Hill Rehabilitations Centre - show where they prefer to relax during their breaks at Hope Hill. (Photo: Waldie Volschenk).











Let's talk about resistance

RESISTANCE TO PATHOGENS IN PLANTS IS A FASCINATING PHENOMENON. A GOOD EXAMPLE IS RESISTANCE TO DOWNY MILDEW, THIS ORGANISM CAN QUICKLY DEVASTATE A SUSCEPTIBLE CROP. DOWNY MILDEW IS AN OOMYCETE. OOMYCETES, ALSO KNOWN AS WATER MOLDS, ARE A SPECIAL GROUP OF PATHOGENS THAT, WHILE THEY CLOSELY RESEMBLE MOLDS, ARE VERY DISTINCT IN EVOLUTIONARY TERMS.

AGRI-PULSE - A plant's resilience is determined partly by passive barriers, such as a thick waxy layer.

A limited number of attackers, however, are capable of breaching these barriers.

They can be regarded as the specialists among microorganisms.

Their particular expertise consists in

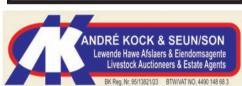
the ability to secrete so-called effectors: proteins that suppress the individual's natural defences.

When it comes to a plant's active defences, we may imagine a simple onestep mechanism. In reality, we're talking about a chain of processes in which the plant recognizes the intruder and produces pathogen-specific resistance proteins in response. A hypersensitivity reaction is triggered at the site where the pathogen is trying to break in, causing locally infected cells to die off and impeding the pathogen's further growth.

Given the complexity of these processes, it shouldn't surprise us that external factors can influence them considerably. As an example, it is common for resistances to function less effectively at high temperatures.







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Internationally, resistance is defined as the ability of a variety to restrict the growth or development of a specified disease or pest and/or the damage it causes compared to susceptible varieties under similar environmental conditions and disease or pest pressure.

A resistant variety then, won't always be free of symptoms or

Depending on the degree to which symptoms or damage occur under high disease or pest pressure, we distinguish between high resistance (HR) and intermediate resistance (IR).

Controlled testing

In testing to determine whether a variety meets resistance criteria, external influences are omitted as much as possible.

Tests are performed under conditions that are optimal for the

The pathogen's identity is also defined; some are known to have variants (such as pathotypes and strains) that differ in their ability to infect resistance sources.

Resistance break-through

When we talk about a resistance that has been broken, it suggests that the resistance gene no longer works or isn't working well enough. Yet nothing about the gene or its functioning has changed.

The pathogen population, on the other hand, may have altered. A pathogen isn't a homogenic factor but is a population that consists of individuals that may genetically differ from each other. The introduction of a resistant plant variety favours any individual with an ability to bypass the plant's barriers.

If one or more of these variants gain the upper hand, we observe that the crop is affected. Initially very local, but later perhaps on a larger scale. Growing a resistant variety near a susceptible one particularly facilitates this phenomenon.

The change in the pathogen's population is not necessarily permanent. The viability of the local variant may be so low that it won't reappear in the next growing season.

Figure 2. Lines of peppers that are resistant (A) and susceptible (B) to cucumber mosaic virus (CMV).



Figure 1. Tomato varieties with susceptible (left) and High Resistant (right) reactions to powdery mildew infection.









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(by Anita Kotzé)

AGRI PULSE - 'Sandriver Crop Protection' is the jet flying business of Billy and Ockie Erasmus. Originally from Vivo in Limpopo, they have been running the company as a family business since 2015.

Billie was the sole owner from 2000 to 2015, but after a few setbacks where he lost three planes in accidents, it was decided that it was time to expand the sole proprietorship to a successful family business. The brothers attribute their success to the fact that they both studied agriculture and have a farming background that gives them insight into how farmers think and act.

Good work ethic, discipline and good human relations are the cornerstones of their business. Their main base is located in Tzaneen with satellite offices in Paris, Ottosdal, Lichtenburg and Marmesbury. They own a total of eleven aircraft, seven of which are currently in full-time use as well as two helicopters that carry out spraying work on smaller areas and in mountainous regions. Helicopters spray especially avocado and macadamia orchards as well as pivot circles where peas and potatoes have been planted.

The company serves the entire continent with aerial spraying of insecticides, fungicides and herbicides. The largest area served is the citrus orchards in the Limpopo and Letsitele valleys. Locusts have also been sprayed in the Karoo this year. In the summer, work is done in the North West and parts of the Free State and from June to August the focus is on the winter rainfall region of the Western Cape where wheat and canola are sprayed.

Ethiopia and Angola are also visited and forest pellets to eradicate invasive plants in Namibia are handled by the company's aircraft. Specialized services include the bush grains, as well as the spreading of fertilizers and the application of foliar feed. The use of jet aircraft is increasingly becoming the answer for farmers because it is efficient and fast and saves farmers labor, time, fuel and capital.

A sprayer can spray up to 1000 hectares per day and the company sprays about 50 000 hectares per month. Larger spray aircraft carry 2400 liters of spray mixture on board with which eighty hectares are sprayed. Smaller aircraft carry 1500 liters of spray mixture on board with which to spray fifty hectares.

The company sprays only registered, approved products and according to Ockie Erasmus, there are few organic products that are registered for aerial application.

Aircraft are equipped with GPS navigation systems that ensure that spraying is applied as accurately as possible so that the target can be reached and spray can not be harmful to the rest of the environment. Pilots of the company must have a commercial flying license which also includes an 'Ag rating' and must have flown at least 300 commercial flying hours as well as 100 'Ag' (agriculture-related) hours.

Ideal weather conditions for spraying are windless days below 30 degrees or wind speeds of 15km per hour. In windy and rainy conditions can not be sprayed and also not early in the morning when it has ripened. Disadvantages of the jet aircraft business are expensive spare parts and very expensive fuel prices that have almost doubled in the past year. Five aircraft use about 8000 liters of lamp oil per day at R18 per liter.

The company intends to make a permanent aircraft available in Lichtenburg from September to June. Farmers with inquiries can call the Sand River Crop Protection office at 015-3060449 / Ockie - 0834563765 / Lardus - 0724379090.



success is in the detail

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SV 6131 PB*

- Suitable for open field production
- Excellent leaf coverage for protection against sunburn
- Dark green fruit colour
- Uniform fruit with good leaf attachment
- Vigorous plant
- Excellent disease package



King Arthur

- Vigorous growth, excellent fruit quality and widely adaptable open field variety
- The large, blocky peppers are sweet, thick-walled, and ripen from green to bright red
- Average fruit weight:
 250 350g



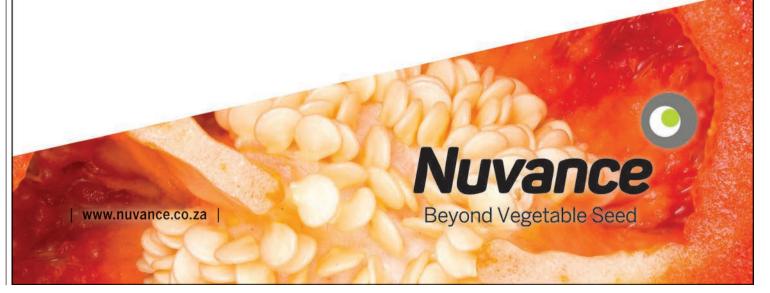
Revelation

- · Good shelf life
- Average fruit size of 10 x 10 cm
- Blocky sweet pepper
- Suitable for the fresh market



PS 16351609*

- Tolerant to Phytophthora capsici
- Extended harvest periods
- Improved marketable yield



MARGARET ROBERTS HERBAL CENTRE

Seeds are building blocks for the future



Sandy Roberts at the Margaret Roberts Seed Bank which will open in 2025 after seeds were encapsulated for 20 years.

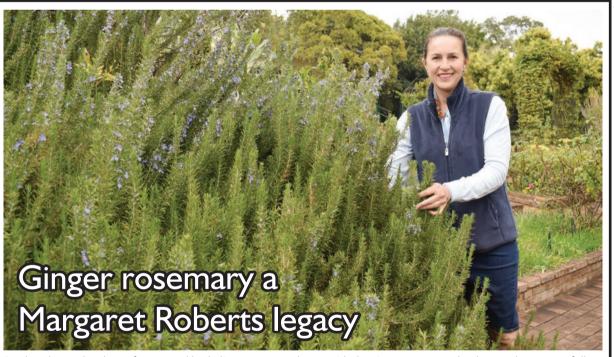
THE MARGARET ROBERTS
HERBAL CENTRE SEED BANK

WITHIN THIS SMALL VAULT ARE THE PRECIOUS SEEDS OF
SOUTH AFRICA'S FOOD PLANTS AND MEDICINAL PLANTS
A LEGACY OF HOPE, A GREEN HERITAGE,
HELD HERE FOR TWENTY YEARS,
SAFE FROM THE STORMS OF LIFE.

THE SEED BANK WILL BE REOPENED IN MAY 2025,
AND THE SEEDS WILL BE PLANTED,
THUS CONTINUING, WE HOPE,
THE PROMISE OF HEALTH AND PROSPERITY
IN THIS GREAT LAND OF OURS.



According to Sandy, now is the best time to plant seedlings for an edible garden such as sage, marjoram, rosemary, thyme, lion cubs, dandelion, capers and ornamental cabbage.



Sandy Roberts, daughter of renowned herbalist Margaret Roberts, with the ginger rosemary that her mother successfully cultivated over years of cross-pollination and ingenuity. According to Sandy, this herb is one of her mother's proud legacies in the herbal world. Margaret passed away in 2017, but the legendary Margaret Roberts Herbal Centre in De Wildt, east of Brits in the North West, which she developed herself 36 years ago, is still going from strength to strength. Margaret has linked her name to product ranges such as food, toiletries, gifts, kitchenware, stationery, textiles, seeds and books. She is also known for her lavenders which she has grown over 15 years and which is endemic to South Africa. The Margaret Roberts High Hopes Basil and the Margaret Roberts Rose were also cultivated by her. She received a Laureate Award from the University of Pretoria for being one of South Africa's first organic herb farmers.



~Elsabé Klein

AGRI-PULSE – DE WILDT – In the early 1980s, Margaret Roberts and her daughter Sandy Roberts started building the Margaret Roberts Herbal Centre in De Wildt, just east of Brits in Northwest.

Since the sudden death of Margaret Roberts, 4 March 2017, this award-winning herbalist's daughter, Sandy Roberts, has rightly filled her mother's formidable shoes and taken the herbal centre to new heights.

AgriPulse visited Sandy to find out more about the new developments at the centre. On entering, the colourful seedlings blossomed with devotion, while the enchanting smell of fresh lavender filled the air with fragrant tranquillity.

Sandy, a passionate herbalist like her mother, says the Margaret Roberts Seed Bank project is big news at the centre.

"Our Margaret Roberts seed bank was the first of its kind in South Africa and we started with it in 1999. The seed bank was sealed in 2005 with 1 500 different seeds that include South Africa's indigenous food and medicinal plants," says Sandy. "It is with great excitement that we look forward to 2025 when the seed bank will be opened for the first time in 20 years," says Sandy.

A seed bank is like a vault in which * NON GMO seeds are preserved for the future. *Non-Genetically Modified Organism (NON-GMO) are seeds where no genetic manipulation was part of the cultivation process. This seed bank is also resistant to almost all environmental factors.

How the idea of the seed bank "germinated" is a very interesting story. Sandy and Margaret were touring the Seychelles in 1998 when one day, by coincidence, they saw a private ritual led by the country's delegates and attended by locals.

"We asked the people what the ritual was all about and they said that during this ritual the country's president puts seeds in a time capsule with the aim of preserving seeds for the future," says Sandy. "The Seychelles' idea of creating a sustainable future where the people of the country are self-sufficient in growing food, was nothing short of brilliant."

Upon their return to the centre, the two literally worked day and night to make what they saw in the Seychelles a reality.

For seven years they preserved, maintained, sowed and harvested natural seeds in order to preserve the purest seed for prosperity and future sustainability in the seed bank.

After the success with the seed bank, they decided to share their knowledge in schools with pupils and so the *Seed Dream - Grow your dream as a seed* project started.

"We placed seed banks at schools and provided seeds that pupils could store in the bank. The life of seeds symbolised the life of the pupils. It is encouragement and motivation for learners to grow, just as the seeds and develop optimally as human beings.

"For us, education is like building blocks for the future, it is our mission to inspire people, especially children, to invest in the future by being self-sufficient. For more information on seed banks for your school, call the centre on 082 457 1269.

"Together we can build a better, healthier and independent future in South Africa," says Sandy.



Most of the herbs at the Margaret Roberts Herbal Centre can be dried and used to draw as a delicious invigorating cup of tea, like this High Hopes basil tea with tasty Chia seed and buttered scones.



The Aloe arborescens (aloe bush), with its flamboyant orange flowers is now in full bloom and the flowers are edible. Use open blossoms in salads or dried flowers for tea, eat as a snack or sprinkle over stews for a delicious taste. The aloe leaves are excellent for their anti-inflammatory and anti-bacterial properties, they are the perfect native healing plant, but remember to eat aloe vera in moderation as it has laxative properties.



Farm fresh yoghurt, handmade and wholesome

AGRI-PULSE - BRITS - Since yoghurt was first eaten "by enzymes and disease-causing microorganisms such as chance" a thousand years ago, it has been synonymous with good health.

Yoghurt first appeared during the Neolithic period between 5,000 and 10,000 years ago, probably due to milk naturally souring in hot temperatures.

The word yoghurt is derived from Turkey where yoghurt means "fermented milk" and thus also refers to the method by which this dairy product is prepared.

AgriPulse stopped by Die Hoërskool Wagpos' dairy, where Anina Nel, manager at the school's Plaasstal, makes fresh yoghurt by hand.

"Our yoghurt is the last link that completes a full circle - from soil to mouth," says Anina.

To start, Wagpos boasts a beautiful Friesian herd who gets top quality nutrition on the farm. They are handled with love and compassion in the milking portal when connected to the milking machine. "Cows are milked daily and we get up to 20 litres of milk per cow per day," says Anina.

The raw milk is then pasteurized. It is a moderate heat treatment (40 °C) of milk for a few minutes before it is cooled down quickly. Pasteurization destroys unwanted

Salmonella, Listeria, Escherichia coli O157: H7 and Staphylococcus aureus.

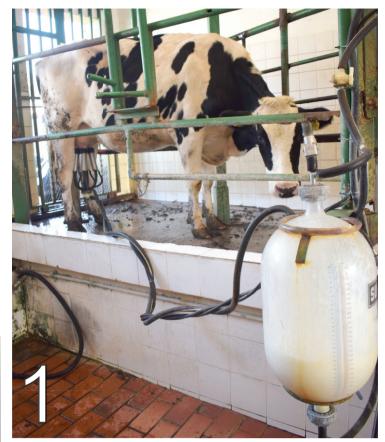
For the traditional recipe, Anina uses 500 litres of milk. Milk is then poured into a double-walled yoghurt pot together with the sugar and stabilizers and slowly heated to 80 °C. After the cooling process the live culture is added. The milk is then poured into buckets and put in the fermentation cabinet for the fermentation process which takes about 4 - 6 hours. They produce 160 litres of yoghurt and 400 litres of drinking yoghurt weekly.

"At the end of such a process, my team and I can proudly look back on a natural, homemade product full of wholesome health," says Anina.

Nutritional value and interesting facts:

Yoghurt is filled with probiotics that are good bacteria and can help prevent and overcome diseases. Yoghurt contains high levels of lactic acid which improves skin health and works well against diarrhoea.

Yoghurt is an excellent source of various vitamins and minerals, such as vitamin B12, calcium, phosphorus and riboflavin.



For the first step in making yoghurt, the cows are milked.



Milk is then pasteurized.



Anina Nel at the double-walled yoghurt pot where she monitors the temperature of the milk mixture



Milk mixture is sifted and drained.



The end product is fresh, wholesome yoghurt.



In the fermentation cabinet, the mixture ferments between 4 to 6 hours.



Get going with garlic

AGRI-PULSE – RUSTENBURG - Garlic is one of those herbs with many applications.

If you love garlic, you'll use it in a number of dishes as a flavouring agent. It adds great depth to stews, soups vegetables and salads. It's also used in dressings, marinades and sauces. But it is also a helpful herb when gardening.

Partnering it with fruit trees or tomato plants will attract a variety of beneficial insects, while their strong scent will deter pests and tree borers.

Roses also love garlic as a companion – it keeps pests targeting roses at bay.

Garlic can also be very effective as a fungicide. Puree 5-10 garlic cloves with 450ml water in a blender. Let it steep for an hour, strain and use to get rid of mildew or fungus on plants. You can also use this as an insecticide – it works wonderfully to keep away mosquitoes when sprayed on outside surfaces.

Garlic in South Africa

South Africa imports most of the garlic sold in the country, but the local industry can thrive if farmers work together and produce good-quality crops. How can producers optimise garlic production?

There are a number of factors to be considered when planting garlic.

Although the crop can be grown successfully in a wide range of soil types and in almost any climate, it fares best in well-drained soils with a pH of between 6 and 7,5.

Sandy loam is ideal. Soils with high organic matter content are preferred, due to their increased moisture- and nutrient-holding capacity, because these soils are also less prone to crusting and compaction.

Very heavy soil types hinder bulb expansion, particularly if allowed to dry out, resulting in irregularly shaped bulbs. Intensive soil management practices are required on light sandy soils with low moisture-holding capacity. Soils should be prepared in advance to eliminate perennial weeds. Experts recommend ploughing to a depth of 15cm to 20cm, then harrowing, leaving the soil in good tilth. The surface should be levelled out and worked well, leaving a

smooth surface to enable effective irrigation and drainage.

The right cultivar

Egyptian white, Egyptian pink and giant garlic have been planted for many generations in South Africa and these cultivars have adapted well to local climates.

Garlic prefers the shorter and cooler days of winter - 12-24°C - and is frost-resistant. For a better chance of a good crop, it's important to stick to the correct planting time: from February to May. In warmer areas, March to June may be better.

Garlic can grow well at an altitude of between 500-2000 metres above sea level. Excess humidity and rainfall interferes with proper garlic development, including bulb formation. Adequate sunlight is important for bulb development – the garlic develops it flavour depending on sunlight conditions during growth. Use good-quality seed – this forms the foundation of a good harvest. A common mistake that people make is to buy fresh garlic off the shelf and plant cloves taken from those bulbs as seeds - these are often sterile and won't produce sizable bulbs. It's better to buy seed from a reputable supplier. These are expensive – but worth your while.

When planted, each clove forms a clone of the mother plant.

Cloves should be planted at a depth of between 3cm and 5cm, and 8cm to 12cm apart, with the point of the seed upwards. Density is usually 250 000 seeds/ha.

Garlic prefers moist soil, but the plants should not be soaked in water. The crop should receive approximately 25mm of water a week, depending on the soil type.

Egyptian garlic varieties can produce a yield of up to 6t/ ha, with the giant variety producing up to 12t/ha.

Fertilising

During its initial growth phase, as the plant emerges and spreads its leaves, the crop might require generous applications of nitrogen. Phosphorus should also be applied for optimal root development, and potassium added for leaf



growth and healthy bulb formation. But, before applying fertiliser, verify phosphorus and potassium levels with a soil test. Broadcast any required phosphorus or potassium, followed by shallow incorporation into the soil before planting. The amount of nitrogen required will vary with soil type, the previous crop grown, the amount of organic matter present and the climatic conditions during the growing season.

Harvest and storage Garlic is ready to be harvested when 30% of the

Garlic is ready to be harvested when 30% of the plants on a land have turned brown and started dying down.

Harvesting can be carried out manually or mechanically but should be done carefully to prevent damaging the bulbs.

After the plants have been pulled from the

soil, they are laid out in bunches to dry for up to three days and then hung in a cool, well-ventilated place. Once the lobes have dried out, the leaves can be cut off and the garlic is ready to be marketed. A distinct advantage of growing garlic is its long shelf life; it can be stored for months at room temperature.

Reducing imports

According to the South African Garlic Growers' Association, garlic imports are the greatest challenge to achieving a sustainable local garlic industry. Dumping of cheap garlic from China, in particular, is a severe problem.

But experts say there are a lot of room for South African producers to claim a significant portion of the market. However, it will be very important to ensure that the local industry make use of a central marketing channel.

Barbu d'Uccle and Barbu d'Everberg

AGRI-PULSE – RUSTENBURG - Barbu d'Uccles are known in Europe since the beginning of the 20th century. In England they were known as "garden fowl" and in Germany they were referred to as "Mille fleurs", a French name that means 'thousand flowers'. Belgium is named as the place of origin and more specifically the village Ukkel. Barbu d'Uccle means the bearded one from Uccle (Ukkel). The merchant of Brussels, Michel van Gelder, is said to be the man who developed this breed by crossing the Sabelpoot with the Barbu d'Anvers. The d'Uccle is always single combed and feather legged, but in type quite like the d'Anvers, with a high carried tail.

The males (cocks) carriage & appearance is typically male with a majestic manner, short and broad, with characteristicly a heavy development of plumage. The body type is broad and deep, with a back that is broad and short, almost hidden by the enormous neck hackle. Their breast is extremely broad, the upper part well developed and carried forward, the lower resembling a breast plate. The wings are close, fitting tight to the body, sloping downwards and incurved towards, but not beyond, the abdomen and the wing butts are covered by neck hackle and tips or ends of flights covered by saddle hackle, which should be abundant and long. The tail must be well furnished, close and carried almost perpendicularly to line of back, the two main sickles slightly curved, the remainder in regular tiers and fan-like down to the junction with saddle hackle.

The head is slender and small, with a longitudinal depression towards the neck. Their beaks are short and slightly curved with a single, fine, upright comb, less than average size, evenly serrated, rounded in outline, blade following the line of the neck. Their eyes should be round, surrounded with bare skin, the brow heavily covered with feathers becoming gradually longer towards the rear, with a tendency to join behind the neck and a beard as full and developed as possible, composed of long feathers turned horizontally from the two sides of beak, and vertically under the beak downwards. The whole beard is thus forming three ovals in a triangular group (tri-lobe). Their earlobes are inconspicuous with wattles as small as possible. Their necks are furnished with silky feathers starting behind the beard at sides of throat, with a tendency to join behind the neck to form a mane, with a hackle very thick and convexly arched, reaching to shoulder and saddle and covering whole back. Their legs are strong, short and well apart, the hocks having clusters of long stiff feathers close together, starting from the lower outer thigh, inclined downwards and following outline of wings. The front and outside of shanks must be covered with feathers, short at top of shanks and gradually increasing in length towards the foot feather, footings turned outwards horizontally, with ends slightly curved backwards, the outer toe and outside of middle toe are covered with feathers similar to the shank feather.

The females (hens) with certain exceptions their general characteristics are like those of the male, allowing for the natural sexual differences. Their carriage and appearance are like a little bird, short, thick and cobby, with a beard resembling that of the male but formed with softer and more open feathers. The neck hackles very thick and convexly arched, composed of broad and rounded feathers, the shape of the mane resembling that of the male. Their tail must

be short, flat in width and not high, the lower tail feathers diminishing evenly in length. The size is dwarf-like and as small as possible.

The Sabelpoot and the Belgium Barbu d'Uccle bantam are closely

related. The main difference between the breeds is that the Sabelpoot

usually has no muffling whatsoever, showing large round wattles and

having a narrower neck characteristic. The Barbu d'Uccle appears

broader and smaller with a very short back, but the abundance of beard shows a fuller neck hackle. In the Belgium National Club Standard, the beard is required to form a tri-lobe. The tail of the d'Uccle is usually carried at a higher angle, like the Barbu d'Anvers.

Defects are strongly developed wattles. Conspicuous earlobes. Excessive length of leg. Disqualifications are any trace of faking. Wattles cut or removed. Comb other than single. Absence of beard or whiskers. Poorly feathered shanks or feet. More than four toes. Yellow legs, feet and skin. Absence of vulture hocks.

Only the main colours are described. Barbu d'Uccles exist in an extraordinary choice of colours, probably unequalled in any other breed, and too numerous to be given in detail. Some popular colours are the the millefleur/ golden porcelain, the isabel porcelain, the citron porcelain, the cuckoo, the black mottled, the black, the white, other colours are laced blue (andalusian type - a diffusion of black and white), blue, buff, lavender, blue mottled (similarly marked as black mottled), ermine (black pointed whites or columbian), fawn ermine (black pointed fawns or buff columbians), partridge, silver and golden duckwing, birchen, red, buff mottled, lavender mottled, pile, silver porcelain, ochre mottled and blue millefleur/ golden porcelain - blue marked. Not all of these colours are regularly seen in this country, but there is practically no limit to the sub-varieties capable of being produced in this very charming

Comb, earlobes and rudimentary wattles are red in all the colour varieties.

Barbu d'Everberg is the rumpless version of the Barbu d'Uccle and should follow the type in every aspect except for the rumplessness. They are classified as a True Bantam, Soft feather and they are also sitters and lay white to light brown eggs.

The cocks' weight from 700g to 850g and the hens 550g to 650g.













AGRIPULSE-VRYBURG: The following is an update report as on 24 June on the outbreak of Foot and Mouth Disease in the North West province after the last report on 13 May.

South Africa currently has 91 Foot and Mouth Disease (FMD) outbreaks in the previous FMD free zone, comprised of three outbreak events. The first event started in May 2021 and is affecting KwaZulu-Natal Province. The second outbreak event started in March 2022 in the previous free zone in Limpopo Province with spread to northern Gauteng Province in April 2022. The third outbreak event also started in March 2022 in North West Province, with spread to Free State and Gauteng Provinces. The affected linked locations in Gauteng and Free State Provinces were depopulated and those outbreaks will be officially closed once the disinfection processes have concluded. Since the update report of 30 May 2022, five new positive cases were identified in the North West Province through continued testing of farms adjacent to affected premises and through active reporting from farmers. The new cases have all been identified in the JB Marks municipality.

Map: Outbreak event North West - Gauteng - Free State

The affected farms remain under quarantine and no movement of animals are allowed off the farms. Vaccinations of affected premises began in early June 2022 and 4116 animals have been vaccinated thus far.

Depopulation of affected premises - Affected animals on the two positive farms in Gauteng Province and Free State Province were moved to a designated abattoir for controlled slaughter. The farms remain under quarantine until 28 days after depopulation and disinfection.

According to Dr L.S. Madyibi, Director Veterinary Services, the disease has spread to more properties in the Dr Kenneth Kaunda district and the furthest farm from the index farm is 40km away. Four additional properties have been infected with the virus. The farms are three dairy farms and a feedlot. All properties were put under monitoring and restriction through a quarantine notice. The dairy farms were supplying milk to ZA registered facility in Gauteng and in Free State. Both facilities were alerted about the outbreak through their State Veterinarians and advised to deal with milk appropriately. Both dairies that produce milk were directed to a milk processing facility that is situated in Gauteng that pasteurizes the milk and use it locally. The current theory that the Department have on how the spread happens is that it does not happen through movement of animals but fomites in the form of people and vehicles are involved. "We are also currently following up on professionals that may have attended to the farms in their line of duty. The farms have not removed bull calves from the farms and have preferred to raise them on farm for alternative use. says Dr Madvibi

Dr Madyibi said the feedlot is the second category of properties that are affected. The animals

at the feedlot were at various stages of production and some of them were ready or slaughter. The facility has backgrounding facilities in the Free State and they sometimes source animals from Botswana through BNLS Policy. The backgrounding farms in the Free State are in close proximity to the positively affected farms in that province. A meeting was held between the feedlot facility, the Free State and North West provinces. It was agreed that all the animals in the feedlot will be vaccinated and be slaughtered. A layer of two farms surrounding the outbreak farms were surveyed for the disease. The neighbouring farms are inspected and surveyed at two weeks intervals. "There is a limitation on the quarantines we have issue to farms that are within 10km radius pre-emptively because it has to be preceded by a survey first. This is so because the area is not a Disease Management Area (DMA) so a blanket precautionary quarantine is not readily issued," said Dr Madyibi.

After extensive discussion and various considerations a decision to adopt a strategy of vaccination was taken by the North West province. The rationale behind the decision was based on the benefit of reducing the viral load in vaccinated animals and the consequent reduced risk of spreading the virus. The vaccination was going to be conducted on all animals in affected farms as FMD is a herd disease. Despite the fact that that only 29 samples were taken in a survey of a farm, one declared positive, the whole farm is considered to be positive. The total number of animals that are to be vaccinated is currently standing at 30 2000. All affected farms have currently been vaccinated and we're going through the last facility to finalize vaccination. Affected farmers were consulted with regards to the decision to vaccinate the animals. These animals are in categories of production animas feedlot and stud animals. They raised concerns about their livelihoods that were going to be affected adversely if they vaccinate the animals as they would not be able to move them out of their farms other than for slaughter. The conditions of slaughter of FMD vaccinated animals are that the 5th quarter (Head, feet and internal organs) would be forfeited and destroyed and carcase are de glanded

There were three options that they were given regarding the vaccinated animals.

* Firstly they were to vaccinate the animals and government would slaughter them quickly in the Protection Zone in the Limpopo DMA but outside the Protection Zone. These animals would then be slaughtered after a period of 14 days at a designated abattoir and the slaughter proceeds would go to the farmer. The state would pay for the difference between the cost of a deboned carcase and the slaughter proceeds would be paid by the state.

* The second option that was given to them was for the state to vaccinate the animals and buy them at live value. They would then be transported to the Protection Zone to be slaughtered at the designated abattoir of governments' choice and the proceeds would go to the state.

* The third option would be to vaccinate the animals twice and they be transported to a DMA area but outside the Protection Zone. The progeny would then be tested after 6 months and could be moved to a Free Zone in Limpopo if they tested negative. They would be moved back to the North West if there were no circulating antibodies after a year. The cost of testing the animals would be shared equally between the state and the farmer. The option also gave the responsibility to feed the animals to the farmer.

Farmers rejected taking their animals to Limpopo as they said they would die of tick borne diseases in any way before any progeny comes. They then opted for the option where government buys them and they be compensated. There was one that was considering the option of harvesting the progeny depending on availability of land to keep them. The Department has made a request to National Treasury to acquire funding that would implement the buying of animals and response has not been received yet. Meanwhile farmers did not object to vaccination of animals in order to reduce the viral load.

Vaccination at the feedlot has started and the animals will be slaughtered at the facilities abattoir in the Free State. The Free State Veterinary Services will initiate the process of getting the abattoir to be designated for FMD slaughter. Total of 8000 animals belonging to affected farms have been vaccinated including animals at the feedlot which is proceeding well. The frequency of surveillance and inspection of neighbouring farms have increased to two weeks.

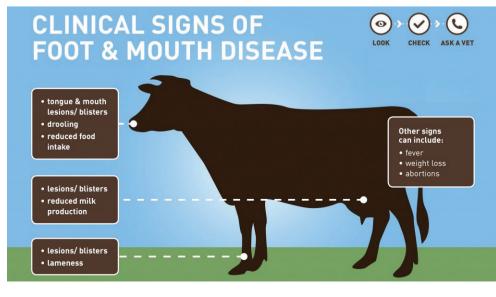
A meeting between the National Office, North West and Mpumalanga province is planned next week in order to discuss enhancing strategy of control in the North West.





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Youth inspired towards food security and agriculture professions

AGRIPULSE - RUSTENBURG – In commemorating June 16 or youth day, Food and Trees for Africa (FTFA) had a conversation with various secondary school learners from two EduPlant hubs in the Kwazulu Natal area to hear their views on South Africa's agriculture and food security.

EduPlant Programme is South Africa's longestrunning and most impactful school gardening and nutrition programme.

The programme inspired learners to pursue Agricultural studies at tertiary level. During interviews with the learners it emerged that part of this inspiration included being receptive to indigenous knowledge systems, as well new ideas and technologies.

Students also believe there should be more emphasis on traditional agriculture farming methods such as the using of cow manure as organic fertilizer.

The majority of the learners also believe that the Department of Agriculture could me more supportive.

"We lack support, training and skills for practicing agriculture. Government announced that it has a budget to support subsistence and commercial farmers, however the money does not reach the appropriate people," one of the learners said.

FTFA said it understands that education, sensitivity and support from the basis of sustainable food garden projects. This is why all food gardening programmes start small and grow big.

"The EduPlant programme is an instrument of critical importance, in motivating the youth to pursue careers in

the agricultural industry and understands the importance of Agriculture addressing unemployment and food insecurity," Bharathi Tugh, EduPlant manager said.

Tiger Brand's Social Transformation Manager, Preeya Naidu said they were proud to partner with EduPlant programme, enabling young people to grow their own food at scale

"Through school gardens, we can all help to feed our families and communities, well done to these schools nourishing and nurturing young minds!" Naidu said.



Kings Harvest Academy students working in their EduPlant permaculture garden.



Kings Harvest students creating compost for their school permaculture garden.



William Weeks, agricultural researcher and Geoffrey Henshaw, Agricultural technician at the Department of Agriculture in Potchefstroom with Dr Tilla van der Westhuizen of the ARC's Rustenburg campus.

AGRIPULSE – NORTH WEST - The Agricultural Research Council, Vegetables, Industrial Crops and Medicinal Plants (ARC-VIMP), Rustenburg Campus has been working for decades already on fibre crops such as Hemp, Flax and Kenaf. These crops were cultivated and research was done on irrigation requirements, cultivars, nutrient requirements, herbicides and spacing and density. Kenaf research was funded by the CSIR for 1.5 million rand. For hemp, 2 South African cultivars were bred namely HempSA1 and HempSA2. All previous research efforts were aimed at production of bast fibres with specific qualities (strengths) for the biocomposite industry. Products such as car door panels, Overhead bin storages in airplanes and particle boards were produced.

Natural fibers are a sustainable and renewable choice

Natural fibers are biodegradable and decompose harmlessly once they have reached the end of their useful life or can be readily recycled and reused without harming the environment. It is a renewable resource, the production requires little energy, CO2 is used while oxygen is given back to the environment

A market is opening is Pretoria and Port Elizabeth for natural fibres for the production of poles for agricultural and mining use, as well as panels for low cost housing for Mamelodi 2. These panels cannot burn, which is much safer than existing structures. Production guidelines were written by ARC staff, and are available by email to tillap@arc.agric.za



EduPlant students with produce from their school food garden.



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Comfort food



A warm pudding on a cold winters day is just what the doctor ordered. Salomé Kotzé, editor of Klerksdorp Record, is a foodie who loves trying out new recipes. She just what the doctor ordered.

Lemon sauce dessert For 6-8 people Oven: 180 °C 500 ml self-raising flour 350 ml castor sugar 2 large eggs

60 ml melted butter 250 ml milk Zest and juice of 4 lemons 30 ml corn flour Icing sugar 750 ml boiling water Mix the flour and 125 ml castor sugar in large ln a separate k

In a separate bowl, mix the eggs, butter, milk, lemon zest and pour into flour mix. Stir until just Mix the cores.

Mix the cornflour and rest of the castor sugar and Mix the lemon juice and have

Mix the lemon juice and boiling water and pour over the mixture in the dish. Do not mix it to-

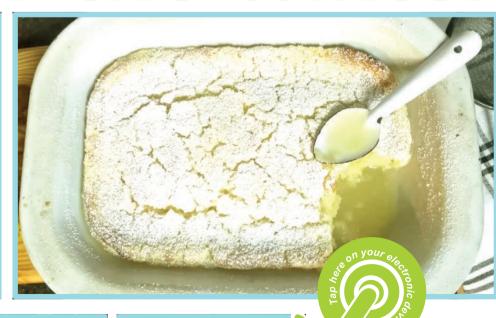
Bake pudding for 45 minutes. Sift icing sugar over the bake once you remove it from the oven.

AGRI PULSE - KLERKSDORP - Winter time is pudding time. Delicious baked puddings with rich sauces, creamy temptations or the aromas of ginger, citrus or spices that warm your insides. Salomé Kotzé, editor of Klerksdorp Record, likes to try new recipes and this recipe from the Ideas magazine FOR A Lemon Sauce Pudding caught her eye. It is easy to make, tastes like no other and is the right medicine to dispel that cold winter feeling.

Soul food for the winter















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Jobs in NC agriculture and conservation sectors discussed

AGRI-PULSE - GEMSBOK-UPINGTON: The Northern Cape MEC for Agriculture, Land Reform and Rural Development, Mase Manopole, discussed jobs created by the department during her budget speech.

She said approximately 256 jobs have been created for the 2021/22 financial year under the following programs: Work on Waste, Covid-19 Screening,

Barkly West Community Nursery, Schmidtsdrift Forest Management and Internship Programs. The following posts (paid by the EPWP Incentive Grant) will be created for the financial year 2022/23, The total grant is R3,9 million. The program created 181 jobs (106.93 FUs) which were divided as follows: Work on the coast - 20, People and Parks - 53, Cleaning and greening of community parks - 80,

Covid 19-sifters - 17, Barkley- West Community Nursery - 11.

The program has been implemented from 1 April 2022 and is expected to end on 31 March 2023. Approximately 406 EPWP jobs under CASP & Illima / Letsema were created during the 2021/22 financial year:

• 383 Namakwa and Irrigation Projects in Onseepkans and Pella.

• 19 Manyeding Hydroponics Project in the John Taolo Gaetsewe District and 4 Waterbron Poultry Project in Frances Baard.

In the current financial year, approximately 550 EPWP (CASP & ILLIMA) jobs will be created under the CASP and Ilima / Letsema programs.

Agricultural processing projects for the current financial year

The Department will continue to support the rooibos project and raisin farmers with the required agroprocessing infrastructure where applicable and possible, especially when related to the South African Good Agricultural Practices (SA GAP) accreditation. Abattoir in De Aar

During the visit to the De Aar abattoir last year, the department made a commitment to help the abattoir as well as possible - to ensure that they remain in business by providing them with a permanent state veterinarian

It is a requirement of the European Union that all export abattoirs must have a permanent veterinarian to carry out counter-death and post-mortem inspections in the absence of which export status will be suspended.

The department, through Public-Private Partnership, succeeded in getting the service of a private

veterinarian to assist at the abattoir.

The department is meanwhile in the process of appointing a permanent veterinarian - a process that will be completed in this financial year.

The appointment will ensure that the abattoir for the lucrative export market to the European Union remains registered and current employment of staff is guaranteed. The abattoir employs 33 (16 women and 17 men) workers from De Aar and adjoining areas, thus improving the employment rate within the Pixley Ka Seme district.

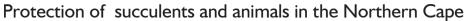
Empowerment of women, youth and people with disabilities - Provincial government's priority

Manopole says the department's goal - to empower women, youth and people with disabilities in the agricultural sector - by helping them move from communal enterprises to established commercial farming - is yielding positive results.

In the past financial year, the number of farmers who were supported or benefited by conditional grants, Comprehensive Agricultural Support Program (CASP) and the Illima / Letsema, gradually increased. About 110 men, 57 women and 17 young people benefited from the program.

Due to Covid-19 pandemic, there were delays in implementing projects from the previous year and this led to fewer farmers being supported. Both Youth in Agriculture RuraD and WARD structures are currently being revived so that there is better coordination and resource allocation.

In the current financial year, some 736 men, 376 women and 206 young people from the Pixley ka Seme, ZF Mgcawu and Namakwa Districts will benefit from the CASP and Illima / Letsema programs.





AGRI-PULSE - GEMSBOK-UPINGTON: "The Namakwa district in particular is extremely affected by the poaching of our endemic plants and reptiles. "To undertake agreements and strengthen our community campaigns and partnerships aimed at protecting the Province's protected Fauna and Flora in the Namakwa district, about R700 000 has been set aside for the 2022/23 year," said the MEC. for Agriculture, Land Reform and Rural Development, Mase Manopole, said during her budget speech last week.

In order to implement the questions of the National Response Strategy to address the illegal trade in South African Fauna and Flora, a departmental working group consisting of research and development, biodiversity management and environmental management units will be established.

The establishment of a working group will ensure liaison with Conservation South Africa (CSA), appointment of monitors and continued involvement and co-operate with the SAPS 'unit for stock theft and better species.

The goal will further ensure that responsibilities are accepted for the working group required in the strategy.

Community involvement forms

an integral part of the Poaching and Conservation South Africa (CSA) effort, an NGO operating in the Namakwa district will be involved as a strategic partner due to its proximity to the hotline communities.

The department will continue its liaison with the South African Police Services in the management of reported cases and with its participation in Operation Phakisa to ensure a coordinated response that is requested.

Funds will be made available to establish a nursery to ensure that all the confiscated plants return to the province.

So far, confiscated plants are being kept in places outside the borders of the province and it is important to get them back to its rightful habitat due to its endemic status and cultural value.

The department will further work with stakeholders to collect and conserve some of this endemic plant being harvested to ensure that the department ensures the risk of extinction of native protected plant control.

The seeds will be collected, treated and stored.

"We will further explore and apply the latest technology to conserve our biodiversity and continue to work with stakeholders and law enforcement to combat the evils of poaching," Manopole promised.





Regenerative & Predator Friendly Farming at N'Rougas Noord Farm, Kenhardt, Northern Cape

by Laura Allais

AGRI PULSE- KENHARDT: We were invited to visit N'Rougas Farm, 26km north of Kenhardt.

Veronica Rorich welcomed us and introduced us to the team that manage the farm.

Johnny Matthys, Advisor and general farm worker. Julian Matthys, farm manager. Rohan Matthys, shepherd. Winsten Mondsinger, shepherd.

In April 2021, N'Rougas started implementing Regenerative Farming Principles on the farm, after three generations of conventional farming practices, with the guidance and expert training of the Herding Academy in Graaff Reinet, who were instrumental in facilitating the transition.

The concept, although simple, is quite foreign to many farmers in South Africa: returning to the ancient practice of shepherd herding.

The shepherds and farm managers all attended the training, where they were taught, amongst many other things, how to keep the sheep in a close-knit herd, which is what natural predators do.

By mimicking the way in which free-roaming wild herds of centuries past moved through the land, the herd does not remain in one place long enough for it to graze grasses and plants to such an extent that their root reserves are affected. The sheep will be kept away from a previously grazed area, enough to allow the plants to fully recover, before being grazed again. The herd is also prevented from favoring certain plants, due to being kept close together and always on the move, so they graze everything they come across.

The herd - 600+ strong - is then moved to a new grazing area, once the shepherd deems it necessary. The intense trampling of many hooves flattens the dead grass so that it becomes a natural mulch/ground-cover, and it breaks up encrusted and hardened soil on the surface, allowing rain to seep into the ground, where it creates little pockets for seeds to germinate. The urine and dung left behind

further provide a natural fertiliser. All this together, creats a fertile seed-bed for soil and vegetation regeneration.

Because the animals are with the shepherd during the day and brought in to a temporary kraal at night, N'Rougas Farm is able to share the farm with the natural predators – allowing them to serve their role in the ecology.

Any sick animals are very quickly attended to and sheep that are close to giving birth, are watched closely. Once they have lambed, the ewe and lamb/s are brought close to the homestead until they are ready to be reintroduced to the herd.

Why 'predator friendly' you ask? And what does it mean?

Many farmers believe that they have the right to farm without the threat of predators. With RegenAg, farmers seek to find a balance and are committed to being good stewards of the land. It's more than just a way to market a product - it's where preserving native wildlife, encouraging and protecting biodiversity and farming co-exist.

So how is it different to normal sheep farming?

The herd is managed 24/7 by the shepherd; they are not left to wander unattended in the veld. During the day the herd moves through the veld, guided by the shepherd, to areas that 'need' grazing. In the evening, they are led back to the temporary kraal, not left to fend for themselves (thus the need to exterminate predators) where they are safe from predators due to the presence of the shepherd and his sheepdog. Once the shepherd deems an area optimally grazed, the whole herd and temporary kraal is moved to a new area. All this is done by the shepherd.

N'Rougas Farm send their lamb to Brandvlei Abattoir for slaughter, and market their meat themselves and through the Good Food Network in Cape Town.

Visitors are welcome to visit the farm. Contact Veronica for more information at veronica@rorich.co.za



Veronica Rorich, owner of N'Rougas Farm with her manager and advisor, Johnny Matthys. Photo: Elsa Jones



The shepherd and his sheepdog both have good sleeping places for the week. Photo: Elsa Jones



At night, all the sheep are herded into a kraal to prevent predators from attacking them. Ewes with small lambs are taken to a home camp to strengthen before being brought back to the herd. Photo: Elsa lones

