



Ndundulu Aloes

"Premier grower of Sunbird aloes
in kzn"

Aloe Pests and Diseases

Troubleshooting with Ruthe Gray





What is a hybrid aloe?

In simple terms, a hybrid is a combination of two or more species to form one plant. The main reason why growers and breeders hybridise plants is not only to try and improve species to become great domestic garden plants, but also to gain some advantage that neither of the two originals could achieve alone. You may also come across the term 'cultivar' which is a plant, or a group of plants, selected for desirable characteristics that can be maintained by vegetative (asexual) propagation. Most cultivars have arisen in cultivation but a few are special selections from the wild. Cultivars are produced by careful breeding and selection for flower, colour and form.

Growing Aloes successfully depends on the specific Aloe species or hybrid that suits your climatic conditions and soil type. For example, trying to grow ***Aloe longistyla*** in a garden on the Highveld or down the KwaZulu-Natal South Coast will only lead to disappointment. However, the Sunbird Aloes hybrids on the other hand, are generally easier to grow, flowering late summer into late-winter-spring when everything else in the garden is dull and boring. Their drought tolerance and the fact that they attract many more birds and insects to the garden, make them winners.

There seems to be a trend to steer away from traditional gardens that are formally arranged and high maintenance. Josephine Noyce, Landscape designer says, "almost every client of mine asks for a low maintenance, water-wise garden".

Lately, we often have discussions with our clients about "How to design a garden with Aloes as a feature". The many different aspects of our Sunbird Aloes hybrids like Colour, Adult size of the plant, Flower Time, Frost Tolerance and Growth Style all come into play when planning a water-wise garden.

Planting and watering

The planting protocols for plants in bags and open root plants (more mature specimens taken from an open growing area) are slightly different.

Shared principles:

1. Aloes should never be planted deeper than the current planting level.
2. If they need support to prevent them from toppling over from wind or heavy rain 3 or 4 stout stakes should suffice. I like using bamboo stakes for 2 reasons: a) It is easy to cut them back so that they do not stand out beyond the aloes rosette and therefore is neater than tall stakes and b) by the time the stakes start rotting away under ground the aloe should be sufficiently rooted to stay upright.
3. Good quality compost should be mixed into the planting soil regardless of whether the aloe goes into a container or the open garden.

Aloes in bags:

1. Prepare the planting area or container and ensure that the planting soil is slightly moist.
2. Cut away the bag and examine the roots. Unless the roots are tangled and grown together the aloe can be planted with as much of the bag soil as possible intact. Tangled roots should be pulled apart gently using your fingers from both hands before the aloe is planted. This will ensure faster establishment of the plant.
3. Compress the planting soil around the roots slightly (too much compression could restrict drainage).
4. Water well (a little dam around the plant can save a lot of water).
5. Note that all the bags in the nursery are watered once a week on average. Medium and large aloe cultivars should be weaned off regular watering if planted in an open area to become less dependent on watering. This should be done gradually over 4 to 6 months.
6. Smaller cultivars have a smaller moisture retention capacity and may need occasional watering, particularly in a container.
7. In colder areas cognizance should be taken of cold weather before watering.
8. Any aloe can be grown in a container of sufficient size, but even larger cultivars may require occasional watering in low rainfall areas (most of South Africa).

Open Root Aloes:

1. At Sunbird Aloes wholesale nursery in Randburg, largest nursery bags have a 16 lit soil capacity. These are reserved for large and extra-large aloe cultivars and have sufficient room for growth until the first or second year of flowering. After this the plants are moved to the open growing area to build up bulk and improve their flowering performance. These plants have to be dug up so they can be collected by clients, i.e. they are sold "open root" deep.
2. Although open root aloes can survive for many months out of ground before planting, best results are normally obtained by planting on the same day as they are dug up. This requires a fair amount of preparation to have the planting area ready for when the plants arrive. Compost should be dug in around 30cm deep.
3. Both soil and compost should be slightly moist (dry compost is very difficult to moisten once dug in).
4. Once planted and staked up, open root aloes should be watered well once, after which they should be left to seal broken roots (inevitable) and start new roots, for 4 to 6 months.

- *Good soil preparation*
- *Good disease prevention and management*
- *Occasional feeding with the correct fertilisers*

The best spot: Growth and flowering are best if Aloes are grown in full sun, but a slightly shaded position will also work, as long as they are not over-watered.

Choosing the right variety for your climate: Some Sunbird Aloes are frost-resistant and others are not – be sure to choose the right variety. Your garden has warm as well as cold areas. By using these you can shelter your hybrids from the worst of the winter weather. The hybrids may need a fleece depending upon how cold your winter is.

Soil types and a perfect planting hole: Aloes are adaptable to most soil types except heavy clay. Good drainage is a must. Dig a generous-sized square hole about 3-4 times larger than the plant's root ball. Mix the soil from the planting hole with a generous helping of compost and/or well-rotted kraal manure. Also add a handful of bone meal or a balanced, slow release, organic fertiliser. Return some of this mixture back into the hole until your aloe is at the correct depth. Only then fill the remainder of the hole. Alternatively, make sure your aloes are planted into sand at the bottom of the hole. This ensures that during long or heavier than normal rainfall, the aloes are not sitting in wet ground. Where they will eventually rot off.

Maintenance: Once established your Aloe will be drought-resistant, but will grow faster and lusher with moderate watering. Smaller Aloes and those in containers will generally require more frequent watering than large Aloes. A watering routine will depend on the soil type, variety and season. To stimulate faster growth and better flowering, feed aloes every 2-3 months with a balanced organic fertiliser. They also respond well to periodic applications of well-rotted chicken manure in the growing season to boost foliage growth. Additional liquid fertiliser for container-grown Aloes is very effective to keep the foliage lush. Alternatively feed your aloes in spring, ready for next seasons flowering.

Trouble shooting

Aloes are prone to pests and diseases. Look out for the following and take the necessary preventative measures. (Chemical guideline)

Rust – In the home garden where one does not have too many Aloes it is recommended to remove all the affected leaves and burn them. You can spray with Virikop plus a good wetting agent to limit the spread of the disease.

Black spot – This is a complex problem caused by more than one fungus. Some plants are more susceptible than others, and soil pH can also affect susceptibility. If a plant is extremely susceptible it is recommended that you destroy it and replace it with a more resistant variety. Home use fungicides are not that effective in treating this disease, one can however spray with Virikop as a preventative.

General insects – These include Snout Beetles, various beetles, grasshoppers, caterpillars, aphids, mealy bug and scale. For home use an alternating spray program of Aphicide (Dimethoate) and Koinor with a good wetter-sticker is effective for controlling most insects, most of the time. For a severe scale infestation one can use a mix of Garden Ripcord and Oleum. Once the scale is dead it generally does not fall off and has to be rubbed off with a cloth or soft brush.

Aloe Cancer/Aloe Mite – A difficult pest to control and no home-use products are completely effective in controlling these mites. It is always best to physically remove (cut out) the deformities/growths caused by the mite. Burn these growths, don't leave them lying around your garden and don't put them in your compost heap. After physical removal of growths/deformities, spray the plant with an effective miticide. Aphicide (Dimethoate) and Karbaspray (Carbaryl) are effective to a certain extent but some populations of mites are resistant and others will become resistant if the products are not alternated. Alternative product is Movento (very expensive), used as a drench will kill the canker brown.

Bacterial and fungal diseases can spell trouble for an aloe plant. Overwatering and poor drainage are the most common issues that lead to decline. Common diseases in these plants include root rot, fungal stem rot, soft rot and leaf rot. Leaf spots usually result from too much water. Aloe rust causes black spots. The blackened area oxidizes and seals itself from the rest of the plant, and the discoloration does not spread. Fungi, including those from the Phytophthora and Pythium genera, cause root rot in aloe plants. Root rot symptoms generally include dark brown, mushy root tips and dark, mushy lower leaves. Soft rot is a bacterial disease that causes water-soaked spots in aloe leaves. As decay spreads through the insides of the plant, the leaves turn mushy and collapse. The spots may enlarge and merge together. Alternaria spp. has recently been identified as a cause of leaf spots on aloe. Tip die back can occur in poorly drained, over-watered soil. Water-soaked spots appear on the leaf tips, and the tips eventually turn brown and shrivel while the rest of the leaf remains healthy and green.

Chemical Alternatives suggestions:

- ◆ Neem oil: is an alternative for a preventative spray. Best used when warm water is used to help dissolve the oil for a better spray. Only lightly spray your aloes with Neem oil, and never in the heat of the day.
- ◆ Rose Care 3 in 1: is a preventative product for insect and fungal problems. And for gardens with a few aloes.
- ◆ Fighter/Brilliant: used as drench for fungal problems. It has no residual effect, and only deals with the fungal issue at the time of application.
- ◆ Tomato and Vine Sulphur powder: used as a preventative to soft rots developing in the crowns of tightly compact aloes. Alternatively can be used to treat Soft rots, by dusting the powder into the affected crown. The sulphur powder dries out the soft rot, enabling you to remove the old leaf, ready for the new leaf to come in.
- ◆ Garden Ripcord: The active ingredient is Cypermethrin (Pyrethroid).

Aphids

Aphids are classified as sucking insects (Aphids, scale, spider mites & white fly), meaning that they suck nutrients out of the leaves of the aloe in order to survive and reproduce. You will notice little yellow spots on the leaves when aphids are present and feeding on the aloe.



Photo courtesy of www.agaveville.org/



Photo courtesy of Sunbird Aloes

There are many different types of Aphids that can be found on aloes and some so small that it is difficult to see them with the naked eye.

Commonly found are the green, brown, white & woolly aphids. The woolly aphid generally appears as white fluff on the underside of the leaves and can sometimes be seen on the stem. Predators bugs such as Ladybugs and Praying Mantis will help you to naturally deal with any infestations, by eating the aphids.

GET RID OF APHIDS BY HAND

Water: Spray aphids off of plants with a strong stream of water from a garden hose. This method is most effective early on in the season before an infestation has fully taken hold. It may not be a good choice for younger or more delicate plants, but it works well on plants where you can use higher water pressure.

Remove by hand: Put on some garden gloves and knock them off of stems, leaves, flower buds, or wherever you see them, and into a bucket of soapy water to kill them. You can also cut or prune off the affected **areas and drop them into the bucket.**

CONTROL APHIDS WITH NATURAL AND ORGANIC SPRAYS

Soap and water: Make a homemade aphid spray by mixing a few tablespoons of a pure liquid soap in a small bucket of water. (Avoid using detergents or products with degreasers or moisturizers.) Apply with a spray bottle directly on aphids and the affected parts of the plant, making sure to soak the undersides of leaves where eggs and larvae like to hide. The soap dissolves the protective outer layer of aphids and other soft-bodied insects, eventually killing them. It doesn't harm birds or hard-bodied beneficial insects like lacewings, ladybugs or pollinating bees. You can also purchase ready-to-use insecticidal soaps online.

Neem oil: The organic compounds in Neem oil act as a repellent for aphids and other insects, including mealy bugs, cabbage worms, beetles, leaf miners, ants and various types of caterpillars. However, it may repel beneficial insects, so use caution when and where they are present. Follow package instructions for diluting the oil in water or use a ready-to-use Neem oil spray, and spray the affected areas. Neem oil is also good for controlling different types of fungus.

EMPLOY NATURAL PREDATORS



Pictured Left: Green lacewing larva. Photo by: Tomasz Klejdysz / Shutterstock. Pictured Right: Lady beetle larva. Photo by: Geoffrey Budesza / Shutterstock.

Lady beetles:

Adult lady beetles (ladybugs) don't eat nearly as many aphids as they do in their larval stage, which is why many people are disappointed with the lack of control they see after releasing purchased live ladybugs into their garden.

There needs to be a large enough aphid population to keep the ladybugs fed long enough to mate and lay eggs — because it's the larvae that eat the most aphids. Ladybug larvae don't look at all like the adults we're so familiar with, so identification is important (see photo). Live ladybugs can be purchased online.

Tips for better results:

- Lightly mist plants before releasing to encourage them to stop for a drink as they are probably dehydrated.
- Release them in cooler times of the day, early morning or evening. Repeat applications are needed, as most will fly away within a few days.

Green lacewings:

As with ladybugs, green lacewing larvae do the work of controlling aphids. Green lacewing eggs can also be purchased online.

Birds:

Provide houses for bug-eating birds, like flycatchers and Bush Shirks, to live in and they'll repay you by helping keep the insect population under control. Grow small trees and shrubs where they can take cover and build their own nests.

GROW THE RIGHT PLANTS

Use plants to your advantage by planting varieties that attract beneficial insects (aphid predators) or those that naturally repel aphids. You can also plant some aphid favourites as trap plants to lure aphids away from plants you are trying to protect. Also, keep your garden clean of dead plant material that may be harbouring aphid eggs over winter.

Attract beneficial insects: Clover, mint, dill, fennel, and yarrow

Natural aphid repellents: Catnip, garlic, chives, onion, and allium

Aphid trap plants: Zinnias, dahlias, cosmos, asters, mustard and nasturtium



ANTS

Sucking insects (Aphids, scale, spider mites & white fly) excrete a clear sticky, sugary substance called Honeydew. As aphids are very vulnerable insects they use the Honeydew to attract ants which collect the substance as food and in exchange **protect the aphids** against predators.

Unfortunately it is not possible for the ants to collect all of the honeydew available. This then results in the tree leaves, branches & stems becoming sticky.

Photo courtesy of www.trees-sa.co.za

Treatment

The treatment of the aphids above will also deter the ants. Or you could treat for the ants so that the aphids are exposed to the natural predators to control them. There are various treat-



SOOTY MOULD

This mould is a result of a by-product, **honeydew** that comes from aphids, leafhoppers, mealy bugs, scale insects and psyllids. Sooty mould appears as a black substance growing on the honeydew. It looks unsightly in the landscape, but is not harmful.

It is most commonly found in periods during the year where we are experiencing high temperatures and the tree is experiencing stress due to a lack of moisture.

Treatment

The only way to control the outbreak of this fungus is to control to population of the aphids with the appropriate chemical treatment, thus reducing the amount of honeydew that is excreted.

Photo courtesy of [Reddit/plantclinic](https://www.reddit.com/r/plantclinic)



RED SPIDER MITES

They are tiny insects (hardly visible to the naked eye) related to spiders and ticks. They are the same as the aphids mentioned above in the sense that they feed by sucking the chlorophyll out of the leaves. This very common pest is easily identified by the tell-tale, small pale markings left on the surface of the aloe leaf. The leaf may eventually be covered in these spots. The alert observer may see several tiny, reddish creatures, the size of small pin heads, scurrying to hide themselves. They generally occur during the hot and dry conditions (Mostly in summer) and multiply very quickly. Spider mite population can spread via dust during dry conditions.

Photo courtesy of Sunbird Aloes

Treatment

When aloes dry out completely, the insect population increases to such a degree that it cannot be controlled mechanically, a chemical control will need to be applied: Visible mites like these are easily contained by a sprinkling of insecticide powder in the centre of the plant, and they will succumb to most insecticidal spray chemicals as well.

Look at using insecticidal soaps and horticultural oils.

Liquid sulphur spray or miticides can also be considered.

Spray above and below the leaves of the tree with the chemical treatment

For best results, the spray needs to physically come into contact with the pests.



SNOUT BEETLE

This is aloe enemy number one, so quick and decisive action is required whenever they are noticed. The beetle itself is about 1, 2 cm long (varies) and invariably aims at the centre of the aloe plant where it can wedge itself between the leaves to insert its proboscis. This is done to drink the leaf sap (like with a straw) and leaves a tell-tale dark spot that dries into a pea-sized dry spot with a puncture mark in the middle (see picture). The tiny cut in the centre of the hole distinguishes it from fungal and other benign spotting. Once the beetles have mated, the eggs are deposited at the base of the leaf from where the newly hatched larvae bore straight into the stem where they spend the remainder of their life cycle. The rot and destruction caused by

Photo courtesy of hscactus.org

Physically removing and killing the beetles or a sprinkle of insecticidal powder should take care of the mature beetles, provided they have not been there too long. The number of perforations and their distance from the centre of the plant will tell, at a glance, for how long the beetles have been active. Many perforations away from the centre of the plant almost certainly mean that there are beetle larvae destroying the plant from inside. The bottom picture shows a plant that is probably beyond saving – those beetles have been there for many generations.

To save the plant it may be necessary to cut through the stem just below the leaves (about 20cm) and remove all traces of black tunnelling and grubs. Keep on cutting off 1cm sections of stem until there is no more tunnelling. Provided the meristem of the plant has not been destroyed, the leafy crown can be dried out for a few weeks and rerouted.

The bottom part of the stem is useless unless there are healthy stem shoots. Regular inspection of your plants is necessary where snout beetles occur. If the rot is not too far advanced it may be possible to stop the infestation with a long-lasting, systemic insecticide like Bandit (Kohinoor). It can be sprayed (remove dried leaves and pay special attention to the area under the leaves and the top of the stem). Where conditions allow it should also be applied as a soil drench. This should ideally be done just after the flower season to prevent nectar-loving birds and insects from being affected.



Photo courtesy of Sunbird Aloes



Photo courtesy of Sunbird Aloes

FLEA BEATLE

Knowledge of your enemy is the first key to flea beetle control. The insects are small beetle-type pests that hop when disturbed. The larvae overwinter in the garden and become adults in spring. There may be up to two generations of the tiny shiny beetles per year. Some varieties are striped or spotted and may be brown, tan and black.



Photographs courtesy of Ruthe Gray

Flea beetle control is an on-going battle that relies upon three levels of approach. Control of flea beetles naturally starts with consistent cultural practices, physical barriers and even biological methods.

Controlling Flea Beetles

Physical barriers such as row covers are safe and easy methods of controlling flea beetles. These prevent the insects from jumping onto the leaves and munching away on the foliage. You can also use a layer of thick mulch around plants to limit the insect's transformation in the soil from larvae to adult. This provides a non-toxic pre-season way to control flea beetles naturally. For more permanent control, it is necessary to kill flea beetles. The most reliable method on how to get rid of flea beetles is with an insecticidal dust. Naturally derived spinosad and permethrin are two control agents that can provide some assistance in eradicating the beetles. Consistent applications are necessary because of the mobility of the pests. Any insecticidal product that contains carabyl or bifenthrin will also give adequate control when applied at the rates and times recommended by the product manufacturer.

Repelling Flea Beetles

If chemical control is not your cup of tea and covering the crop is not an option, try repellent formulations. Flea beetles are most active in spring when adults emerge and their feeding can severely damage seedling plants.

- Diatomaceous earth is safe for pets, children and most beneficial insects, but will repel most flea beetles.
- Neem oil and some horticultural oils are also effective at repelling flea beetles.



How to Kill Flea Beetles Naturally

Cultural control is the key to killing flea beetles. The larvae overwinter in soil and can be destroyed during regular hoeing and cultivating. Remove all old debris from previous crops and prevent weeds, which are an important early season food for flea beetle larvae.

Without cover and food supplies, the larva will starve. Early season flea beetle control will kill most of the pests and physical barriers, or even sticky traps, can take care of most of the remaining pests.

This photograph was taken from damage in my own garden 2019.

Photo by: Ruthe Gray



BLACK LEAF SPOT

This may be caused by a variety of fungal or bacterial infections, and is more likely when plants are under stress due to excessive moisture or high temperatures combined with high humidity. Spots are more likely to appear on older leaves. Some aloes have a genetic susceptibility, and often a few spots are unavoidable.

This is no cause for concern as it does not affect the plant's health or flowering. If the spots are really unsightly, if possible you could remove the leaf.

Drenching the aloes with Fighter/Brilliant, will kill off the fungus, alas will not remove the marks upon the leaves.

Photo courtesy of Sunbird Aloes



RUST

This is a very aggressive fungus that attaches itself to any part of the leaf surface. When established, it starts showing as a yellow spot below the leaf skin, gradually growing until it is a small coin size. The leaf skin then perforates, exposing the rust coloured spores that look like reddish brown powder. The wind will distribute the spores over a wide area, where they quickly establish and grow.

The best treatment is to cut heavily infected leaves and dispose in a closed plastic bag – do not leave on the compost heap. Un-perforated spots may be treated by breaking the leaf skin and applying a drop of formalin/formaldehyde. Take care to avoid run-off and do not spill any in the centre of the plant. The formalin leaves a dead spot on the leaf but is a very effective treatment. General fungicides sprayed have no effect once the fungus is established.

Drenching the aloes with Fighter/Brilliant, will kill off the fungus, alas not remove the marks upon the leaves.

Photo courtesy of Sunbird Aloes



WHITE SCALE

White scale starts with what looks like a coin sized spot of white dust. It will gradually cover more and more of the leaf upper and lower surface. Eventually this deprives the plant of sunlight to the extent that it can deteriorate and die.

They are stationary insects that are easy to kill, but they tend to remain where they are, creating the impression that the insecticide has had no effect on them. Use any contact insecticide to spray with, or if you prefer not to use poisons, a soapy solution of laundry cake soap (real soap) will also do the trick, provided it is not washed off by rain.

After 10 days or so the scale should be removed with a soft brush so that any new population can be spotted straight away. Some people prefer to brush off the living insects (seeing that they have to be removed after spraying anyway).

After this a preventative spraying with an insecticide is optional. White scale can also be removed, from places that are difficult to reach (like a tall Aloe Barberae) with a strong jet of water.

Photo courtesy of Sunbird Aloes



GALL MITE (ALOE CANCER)

The mite that causes the abnormal growths cannot be seen with the naked eye, which makes it difficult to control before it has infiltrated your plant (s).

Identification: Very often the first sign of gall mite is a new inflorescence that emerges from the plants all crooked and bent. Upon closer inspection you may see the first signs of frilly growth on the peduncle which develops into unsightly galls on the flower raceme as it matures.

The same galls may also start as an irregular growth on the base of some of the older leaves, often where an earlier inflorescence has dried. Huge galls form on old inflorescences and, if left untreated, spread their unwelcome inhabitants over kilometres for many years. The gall mites travel through the air. Keep an eye open for signs of infection on nearby plants.

Photo courtesy of Sunbird Aloes

Treatment:

Cut away the affected tissue with a sharp blade (e.g. carpet knife) and treat the cut with a strong solution of Aphicide or other systemic insecticide. The whole plant can be sprayed with the manufacturer's recommended solution of the same insecticide a day or so later. Be careful not to cut or spray during wet weather. Aloes that are touching an infected plant are particularly vulnerable. Keep an eye open for signs of infection on nearby plants.

- A. Blue Death Powder can be used effectively in such a programme. It is best applied to a fresh cut.
- B. Formaldehyde – A new treatment for gall mite, although still experimental, is producing such good results that it can now be revealed. The plant to be treated must be dry and kept dry for the duration of the treatment. It involves simply painting only the abnormal growth with undiluted formalin (formaldehyde), readily available from most large chemists as a 40% solution.

Use it sparingly on a small brush and prevent dripping and runoff, and take care not to get any on your hands. Repeat the treatment after 3 days. Inspect the area again after another 3 days and only repeat if there are still signs of green growth. Large galls should be cut away first and given adequate time to dry/heal (about 2 weeks). After this signs of regrowth can be treated with formalin as indicated. It may be better to cut away the frilly growths on an inflorescence and not to use a strong chemical like formalin near buds or flowers. Be aware that formalin can also kill healthy plant tissue, so be sure not to apply formalin on an open wound and not any further than the cancerous growth itself.

Insecticides/miticides that can be used in an alternating spray programme: Aphicide, Parsec, Pride, Milbeknock, Blue Death (powder). All of these are best applied when gall have been removed surgically. Please note that formalin is NOT to be applied to an open cut – see above.

- C. Movento is a product containing active ingredient: *SPIROTETRAMAT*. Used as a drench at a ratio of 50mm/5L. This will turn the gall a brown to dark brown in colour, leading to death of the gall. A second application maybe required at the same rate. The gall will still need to be removed; however it is no longer infectious.
- D. Jeyes fluid painted onto the infected area with a fine paint brush will kill the canker gall mite. However you will still need to remove it for ascetical reasons.

The information within this document is based upon my own experiences, trials and tribulations of growing and producing aloes. Please remember to follow the individual chemical guidelines and instructions carefully and correctly at all times.

I hope you find it informative and are able to use for your own purposes.

Happy Gardening
Ruthe

References:

Ruthe Gray —Ndundulu Aloes
<https://www.sunbirdaloes.co.za/>
<https://www.gardeningknowhow.com/.../controlling-flea>
<https://www.almanac.com/pest/flea-beetles>
<https://www.gardendesign.com/>