SUCCULENT PLANTS

agriculture, land reform & rural development

Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

2030 NDP

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1. Background

1.1 Origin and distribution

Most of indigenous succulent plants are endemic to the Succulent Karoo, Karoo, Thicket and Bushveld biomes. There is greatest diversity of succulent plants with over 4700 species in South Africa. Nearly half of the world's succulent species are endemic to Southern Africa. Succulents are unable to grow in these harshest conditions, they grow and are distributed in conditions that are uninhabitable by other plants within part/regions of continents.

2. Description

Succulent plants are plants with parts that are thickened, fleshy and engorged usually to retain water in arid climates or soil conditions. The word succulent comes from Latin word, sucus meaning 'juice', or 'sap'.

South Africa's succulents range from towering tree aloes to tiny rosettes that grow from the hottest condition of country's sun. They store water in their stems, leaves or roots and are able to survive in arid conditions.

3. Production areas in South Africa

Succulent plants are produced in the Western Cape, Northern Cape, Free State, Limpopo and North West.

4. Climatic and soil requirements

4.1 Temperature and light

Most succulent plants grow best in driest areas of South Africa. Succulent plants' leaves, trunks, stems or underground storage organs are thickened and fleshy to retain moisture for survival through long periods of minimal rainfall. Few succulent plants thrive outdoors temperatures where it drops below freezing point (0 °C) for extended periods. Cold-hardy varieties are primarily fine-leaved. With current climate change occurring in South Africa, succulent plants prefer to be grown in a water-wise garden. Succulents need a lot of light. They thrive well when placed under bright, direct sunlight. They prefer sun and do not survive in partial shade.

4.2 Soil requirements

Succulent plants should be planted on sandy soil with good drainage and slightly acid. They don't prefer the soil that retains moisture for a long time.

5. Cultural Practices

5.1 Propagation

Succulent plants can be propagated through root or leaf cuttings and seeds. Cuttings are taken from parent plants that have rootstocks during summer months. Root cuttings from different succulent plants should be planted abundantly to allow cross-pollination.

5.2 Planting

Succulent plants can be planted in autumn and spring. Winter is too cold for planting succulent plants. They are planted on prepared garden with holes of the same depth as they were in the pot or seedling tray.

5.3 Fertilisation

Succulent plants do not need much fertiliser. More application of fertiliser could cause succulents to grow rapidly, lose its colours and become weak. Slow-release organic fertiliser can be used on succulent plants.

5.4 Irrigation

Succulent plants do not prefer too much water. Sandy soil plays a critical role in providing plants with adequate drainage and application of too much water could lead to the rotting of plants. They can be watered once a week during winter and twice a week during summer.

6. Weed control

The best time to control weeds is during soil preparation. Registered pre-sprouting herbicides regulated by the Fertilizer, Farm Feeds, Agricultural Remedies and Stock Remedies Act (Act No. 36 of 1947) can be applied for weeds that appear before planting but herbicides label instructions should always be followed to avoid contamination.

7. Pest and disease control

7.1 Pests control

7.1.1 Mealy bugs

Mealy bugs are one of the common pests on succulents and cacti. They are tiny, elliptical insects which are 2-3 mm long. They are gray or light brown in colour. An early sign of mealy bugs infestation on succulent plants is white cottony substance on plants. Mealy bugs can be spotted on the leaves or underneath of leaves and between the joints of the plant.

Control measures: Alcohol spray can be used directly onto the bugs for prevention. Few drops of dish soap diluted with water can also be sprayed on bugs or infested area of leaves for controlling the bugs. The mealy bugs do not disappear easily and it may take few treatments before they are totally controlled. Alcohol spray or diluted drops of dish soap can be applied on succulent plants once a week until the problem is resolved.

7.1.2 Scale

There are over a thousand species of scales, which vary in shapes, sizes and colour. There are two groups of scales that commonly attack succulent plants such as armored scale and soft scale insects. The sign of scale infestation on succulent plants include small, brown bumps on plants. The soft scale insects suck the sap of succulents, damaging the plants and making them susceptible to diseases.
Control measures: Armored scale and soft scale insects can be removed from succulent plants by hand. Scales can be treated similarly the way mealy bugs are treated. Alcohol spray or diluted drops of dish soap can be applied on succulent plants once a week until the problem is resolved.

7.1.3 Aphids

Aphids suck leaves of flowers at the end of stems. They also suck on the plants' tissues and cause stunted

growth in succulent plants.

Control measures: Application of water pressure on infested succulent plants physically remove the aphids from the plant. Succulent plants can be treated with a mixture of soapy water to repel aphids. Few drops of soap can be added to water and mixed well. Mixture of soapy water can be sprayed onto infested areas and undersides of the leaves of succulent plants.

7.1.4 Spider mites

Spider mites are tiny and often go undetected for a long time. The most common variety is a red spider mite. Spider mites like to suck on the sweet sap from succulent plants. Succulent plants infested by spider mites become lighter in colour and turn almost white or silvery. Early signs of spider mite infestation on succulent plants include spider webbing and small brown spots on plants.

Control measures: The infested succulent plant can be removed from planting site; the soil of planting site can be solarised. Infested succulent plants can be isolated from other plants to limit spider mite infestation.

7.1.5 Whiteflies

Whiteflies are commonly found on leafy succulent plants. They are small, white flying insects that increase their population quickly and can be difficult to control. The whiteflies normally infest underside succulent leaves.

Control measures: Few drops of soap should be mixed in cup of water then shaken well then poured into bottle spray before application. This mixture can be sprayed directly onto affected areas of succulent leafy plants.

7.1.6 Ants

Army of ants on succulent plants is a sign that there are other insects such as mealybugs, aphids and scales in a garden. Ants attract these insects as they secrete honeydew that they like.

Control measures: Succulent plants should be sprayed with soapy water or insecticidal soap. The spray of insecticidal soap can be done once a week. Ant baits can be banded on succulent plants to control ants.

7.2 Diseases control

7.2.1 Aloe rust

It is a fungus that causes round brown or black spots on leaves of Aloes and Gasterias. The black colour is caused by oxidation of phenolic substance in the sap. Once formed, the black spots are permanent and can be unsightly but do not spread.

Control measures: The aloe rust can be controlled by spraying with a systemic registered fungicide. Water should not be allowed to lie on leaves for a long time. Good air circulation and sunlight is needed for controlling the fungal disease.

7.2.2 Botrytis

Botrytis infects the succulent plant seedlings.

Control measures: Common cause of early loss of succulent plant seedlings can be avoided by lightly spraying the potting mix with a systemic registered fungicide. Any seedling that becomes infected should be removed promptly before more spores are produced.

8. Harvesting

Leaves of some succulent plants may be harvested for medicinal purpose. The leaves can be cut by secateurs.

9. Uses

Succulent plants are mostly planted in pots for decoration during events such as party celebrations, municipal events, etc. Succulent plants are used around the world as ground cover which prevents soil erosion. They are also used as firebreaks/fireguards, which prevents the spread of fire from one place to another.

10. References

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Further information can be obtained from:

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