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# Edible Ornamentals & MRL Implications



# Edible Ornamentals...?

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Definition:

Ornamental Plants:

- Ornamental plants are grown for various reasons:
  - Aesthetic appeal – decorative, landscaping, etc.
  - The primary use for these plants is not for food or medicine.
- Ornamentals include a huge range of annual, biennial, or perennial plants.

Edible Flowers: Non-conventional crops

- Chosen for both aesthetic appeal and edibility
- Key factor: Non-toxic, therefore 'edible'.
- Main use: Garnishing



# An Introduction to Edible Flowers

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- Other plant parts – particularly fruits, roots and leaves have been widely explored for edibility – and developed into numerous well known crops.
- Flowers to a lesser extent...
- Food Styling and associated media has brought the aesthetics of food into the limelight and this has led to exploration of the edibility of flowers (previously only considered for ornamental value).
- Flowers can be considered as 'Edible' if they do not inherently contain toxins.



# History of Edible Flowers in South Africa

- For the past 5 years, what started as simple dabbling in the more well known edible flowers, nasturtiums, pansies, violas, courgette flowers, expanded to include flowers of over 24 Families – with a huge variety of species and variations – around 3 ha for export grown under protection.
- Edible flower production is extremely labour intensive, employing around 90 people to work the 3 ha's – largely for export but also for select local market.



<b>Aizoaceae</b>	<b>Begoniaceae</b>	<b>Chenopodiaceae</b>	<b>Lamiaceae</b>	<b>Plantaginaceae</b>	<b>Tropaeolaceae</b>
Amaranthaceae	Boraginaceae	Cucurbitaceae	Malvaceae	Polygonaceae	Verbenaceae
<b>Apiaceae</b>	<b>Brassicaceae</b>	<b>Fabaceae</b>	<b>Onagraceae</b>	<b>Portulacaceae</b>	<b>Violaceae</b>
Asteraceae	Caryophyllaceae	Geraniaceae	Oxalidaceae	Rosaceae	Rutaceae



# MRL Implications:

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- *Significant difference between acceptable chemicals for products purely as 'ornamental' versus those that are intended for human consumption.*
- This poses many challenges, from available registered agrochemicals, many labels indicate the usage for the chemicals as 'ornamental' and *no associated withholding periods* indicated.
- Many chemicals registered for similar pests on regular food types do not have registrations expanded for edible flowers. And where they do, these often do not indicate withholding periods.
- Quick overview of chemicals registered as listed on Crop life AVCASA 2018 & Agri-Intel:
  - 326 chemicals registered / 108 actives – Ornamentals, Flowers, Lawns
  - 3 insecticides black listed / banned by customers
  - 23 actives red listed – prohibited unless special permission is granted for usage
  - 20 amber listed chemicals – ie our customers may require specific risk assessments to justify controlled usage.
  - Only 7 actives have any sensible indication of PHI.
  - Similarly very few MRL's set for RSA.
  - In comparison EU has MRL's set for most of the actives.
  - Other countries that have MRL's set for many these are Canada and USA

# MRL's for Export

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- EU MRL's are set – as indicated on <http://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/public/?event=pesticide.residue.CurrentMRL&language=EN>
- The EU have recognized the complexity of the terminology 'Edible Flowers' and have created an MRL group accordingly:
  - 0256080: Basil & Edible flowers which includes many well known edible flowers, herb flowers, Tagete species, and particularly the broader term 'Other Flowers'.
- For congruency and simplicity, we would like the Department of Health to similarly adopt this list.
- We would like the EU MRL's set to be recognized in South Africa, particularly where no RSA specific MRL's are set, to simplify regulation of this.



# Export expectations with regards to chemical registrations

- Globalgap requires that the agrochemicals used are registered in the country of origin.
- Various international companies are going over to electronic database monitoring systems which specifically requires the agrochemicals to be registered in the country of origin.
- This removes any previous loopholes, increasing the need for appropriate chemical registrations.
- Due to the vast amount of work necessary to cover this aspect, we would like to use international registrations as a basis for appropriate chemical usage.
- We recognize the need for pesticide breakdown curves and extrapolation data in order to determine appropriate withholding periods under local conditions.



# Critical Needs Identification: Pesticides for Edible Flowers

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- **Root fungal diseases:**
  - Damping off
  - Fusarium
  - Pythium
  - Rhizoctonia
  - Verticillium
- **Aerial fungal diseases:**
  - Alternaria
  - Botrytis
  - El bugo
  - Rust
- **Bacterial diseases**
- **Insect Pests:**
  - Aphids
  - Cutworm
  - Fungus Gnat
  - Leafhoppers, Psylla
  - Lepidoptera – worms
  - Leafminer
  - Red Spider Mite
  - Snails
  - Thrips
  - Tunnel fly
  - Whitefly





# Proposed Solution...?

- Due to Minor Crop Usage, specific work for this in relation to the agrochemical registration process will never be justified in volume.
- Focus on actives where MRL's are already set in the EU.
  - Certain actives have very generous MRL's set for edible flowers as these are consumed in very small volumes and do not form staple food sources.
- Focus on products that are already registered in South Africa, for label extension.
- Breakdown curves and withholding periods to be established for safe usage on edible flowers, where registrations are merely given for ornamental usage.

