

# Chemical Control

## The role of Herbicides in Invasive Alien Plant management

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# Introduction

- Emotional issue
  - Undeniable but why?
- Manage IAP without chemicals
  - Phased out within 5 years (WfW)
    - Glyphosate
    - MSMA
    - Picloram
- Feasible or realistic?

# Introduction

- Emotional issue
  - Agric Driven
  - Extrapolate from Agric to IAP?
    - Agric = broadcast high volume
    - Often Aerial Application
    - IAP = targeted (low volumes)
  - Confusion with GMO's
    - Is Glyphosate a villain herbicide?
  - Poor understanding of herbicides
    - Use of term “gif”

# Legal

- Conservation of Agricultural Resources Act (43 of 1983)
- Fertilizer, Farm feeds, Agricultural and Stock Remedies Act (36 of 1947)
- Occupational Health and Safety Act (85 of 1993)

# CARA

Control methods must be:

- Appropriate to species
- Appropriate to ecosystem

Aim of control is to:

- Remove the plants, or
- Suppress the plants, or
- Contain and limit the plants

# CARA

## Examples of environmental damage:

- Chemicals on non target plants
- Pollution of soil and water
- Threats to non-target organisms
- Careless use of fire or causing a fire hazard
- Soil disturbance
- Lack of rehabilitation

# Act 36 of 1947

Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act (36 of 1947)

- Sale, acquisition, disposal and use of herbicides
- Registration of herbicides
- Licensing of Pest Control Operators

# Act 36 of 1947

(2) (a) No person shall for reward or in the course of any industry, trade or business-

**(i) use, or recommend the use of, any agricultural remedy or stock remedy for a purpose or in a manner other than that specified on the label on a container thereof or described on such container;**

**(ii) use any agricultural remedy unless he is a pest control operator registered in terms of this Act or otherwise than in the presence and under the supervision of a pest control operator so registered.**



# Why do we have issues?

- Compliance
- Costs driven
- Perceptions of vegetation management
- Ignorance

# Herbicide Choice

- Act 36 of 1947/OHS
  - Must be registered for end use
  - Correct PPE
  - Correct training
  - PCO
- Field
  - Emotions
  - Poorly informed choices
  - Stock

# How to make the correct choice

- Read the label
- Understand the label
- Make correctly informed decisions

# Two similar products

1. A Systemic (formulation X) herbicide for the control of woody plants and weeds as listed for forestry, Grass pastures, Conservation and Industrial areas.
2. A Systemic (formulation Y) herbicide for the control of woody plants and weeds as listed for forestry, Grass pastures, Conservation and Industrial areas.

# Grazing Restrictions

- Meat animals grazing up to two weeks after treatment should be removed from treated area three days prior to slaughter.
- Do not graze lactating dairy animals on treated area within two weeks after treatment.
- Herbicide application may increase palatability of certain poisonous plants. Do not graze treated areas until poisonous plants are dry and no longer palatable to livestock.

# Herbicide basics

A mixture of chemicals with the ability to kill plants.

# Herbicide Grouping

By application timing

- Pre Emergent
  - Kills plants as they germinate
  - Applied to the soil before plants germinate
- Post Emergent
  - Kills established plants
- Pre and Post emergent
  - Some products active in both fields

# Grouping cont.

By movement within the plant

- Contact
  - No or little movement in the plant
  - Kills only that part to which it is applied
- Systemic
  - Moves within the plant
  - Upwards or downwards or both directions



# Grouping cont.

By types of plants managed

- Selective
- Non Selective

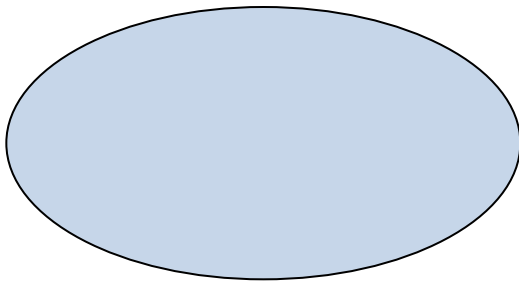
# Plant groupings

## Dicotyledons

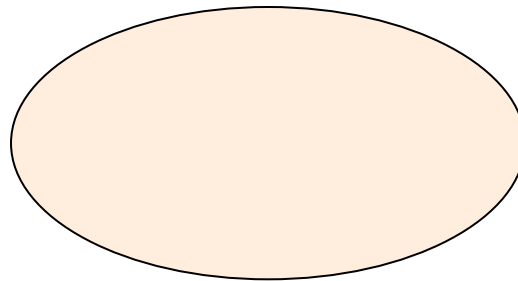
Woody species

## Monocotyledons

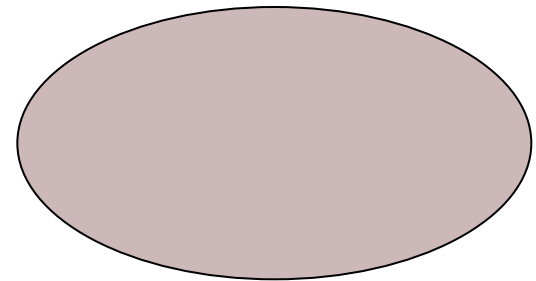
Grassy species



Selective for Woody  
species



Selective for Grassy  
species

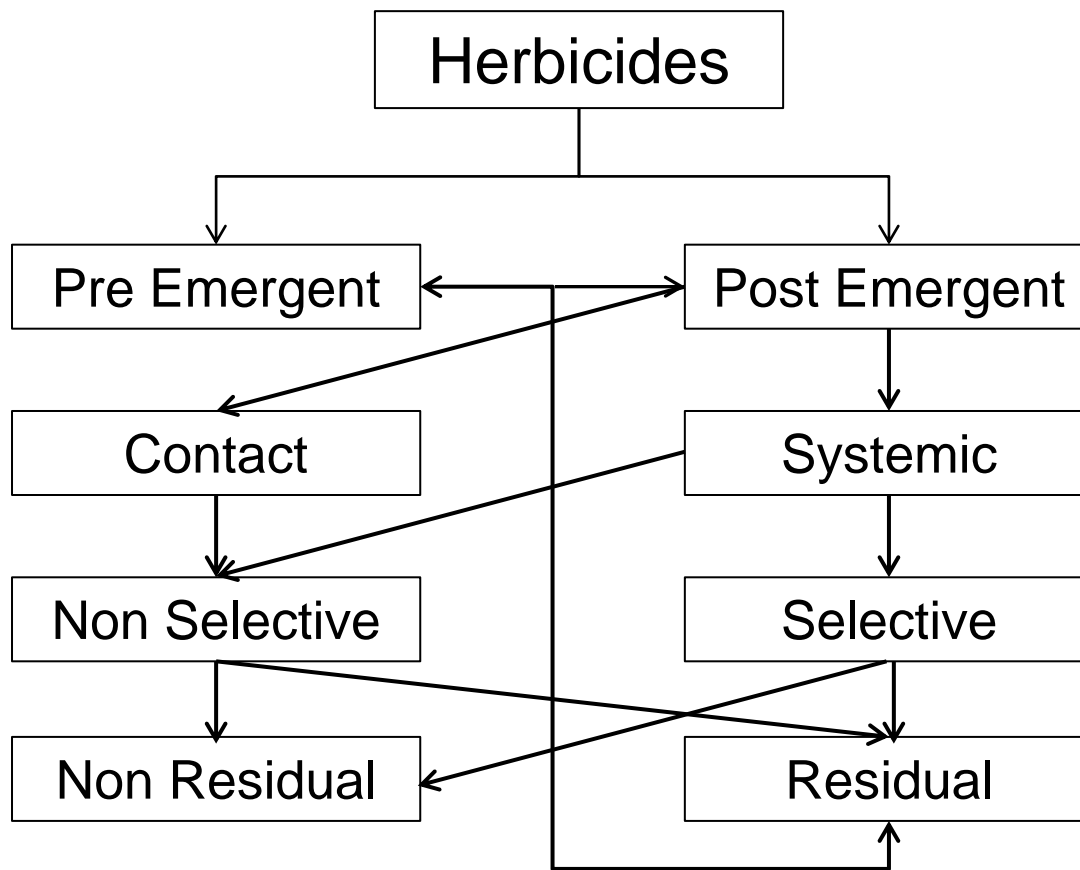


Non Selective

# Grouping cont.

## By behaviour in the soil

- Residual
  - Remains in soil after application - available
  - Half life more than a few months
- Non residual
  - No soil action
  - Not available to plants
  - Cannot be absorbed through roots



# Summary

- Herbicides do pose a threat
  - Especially when applied by untrained people
- Selection is complex
- Need for trained operators
  - and Management