

## SITE OVERVIEW

A demonstration site was established to compare residual herbicide options on a heavier soil type near Koumala, approximately 45Km south of Mackay. This site has high broadleaf weed and vine pressure. The trial compared an imazapic + hexazinone mix, an isoxaflutole + terbuthylazine mix at 2 application rates and a straight isoxaflutole product against the grower standard diuron + hexazinone mix.

## Site Details

**Region:** Koumala, Rocky Dam Ck Catchment

**Crop Class:** 4<sup>th</sup> Ratoon

**Variety:** Q208

**Soil Type:** Clay **CEC:** 12.2 meq/100g

**Slope:** Less than 2%

**Herbicide Timing:** Residual herbicides applied with legs 8 weeks post harvest

**Irrigation:** High pressure overhead

**Weed Pressures:** Sow thistle, red convolvulus vine, blackberried nightshade.

## Treatment Details

| Demo Mix                                      | Product application rate/ha | Approximate product cost \$/ha |
|---|-----------------------------|--------------------------------|
| <b>Mix 1</b><br>Diuron + hexazinone           | 2kg/ha                      | \$32/ha                        |
| <b>Mix 2</b><br>Imazapic + hexazinone         | 500g/ha                     | \$58/ha                        |
| <b>Mix 3</b><br>Isoxaflutole + terbuthylazine | 2kg/ha                      | \$84/ha                        |
| <b>Mix 4</b><br>Isoxaflutole + terbuthylazine | 1kg/ha                      | \$42/ha                        |

## Method

- At 7 weeks after harvest, a knockdown application of MCPA and Fluroxypyr was applied to emerged vines.
- At 8 weeks after harvest, the residual herbicide treatments were applied in replicated 6 row strips.
- KP event samplers were installed to collect water samples to compare herbicide runoff.

## Findings

- The diuron + hexazinone mix at 2kg/ha was the least effective treatment.
- At this very high-pressure site, sufficient vines emerged in all residual product treatments to require a follow up application of knockdown herbicide (fluroxypyr + MCPA) .



Isoxaflutole + terbuthylazine 8 weeks post application



Imazapic + hexazinone 8 weeks post application

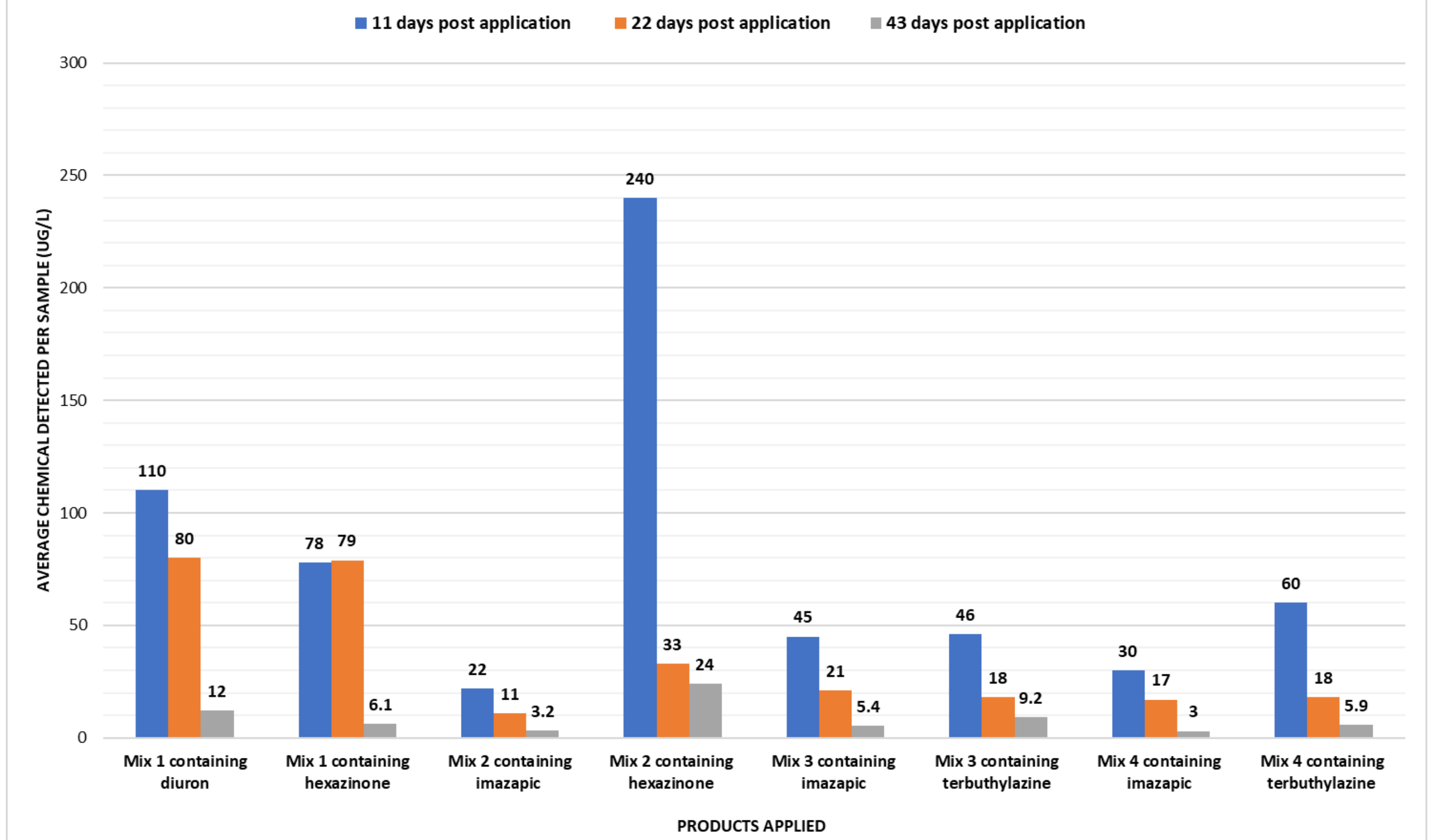


Diuron + hexazinone 8 weeks post application



Diuron + hexazinone 12 weeks post application

## Runoff results for residual herbicides



### Discussion

- Runoff samples were collected at 11, 22 and 43 days after application of products. Elevated losses were measured in all treatments due to first runoff occurring at only 11 days after application.
- At the third runoff event, 43 days post application, all actives were still leaving the field at elevated levels
- Maximise the time between herbicide application and potential runoff events.
- None of the products gave commercially acceptable vine control by 8 weeks post application at this very heavy pressure site – under these conditions, a knockdown strategy is likely to provide better and more cost-effective weed control.
- With the number of conditions now placed on diuron use, including downwind no spray zones and no spray windows, switching to alternative products provides more flexibility and less management stress

**Knockdown herbicide strategies are often more effective and lower cost, but require planning and access to appropriate application equipment**



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