

Pest Plants and Animals Field Day

Weedy Sporobolus grass trial plot results

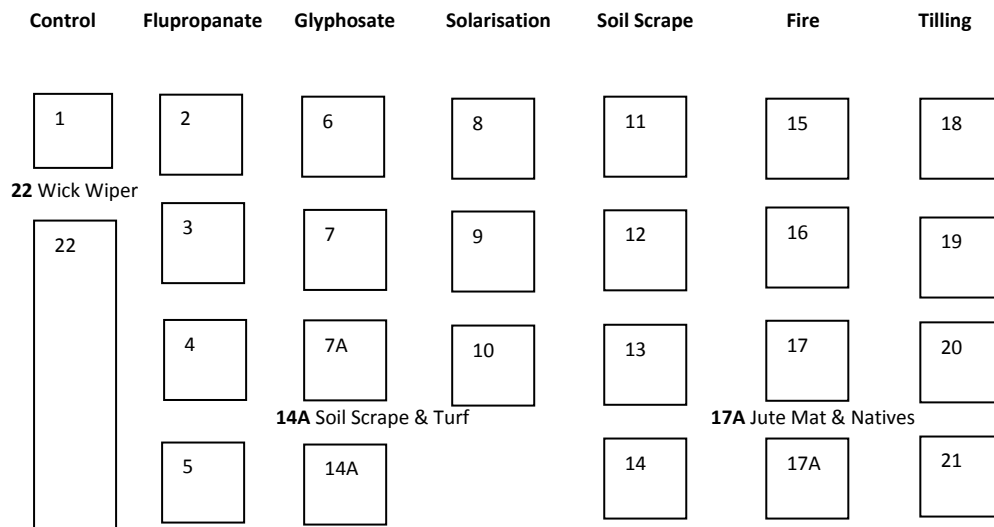


Saturday 16<sup>th</sup> April, 2016

Conondale Memorial Sports and Recreation Reserve (Green Park)



## Trial plots layout (plots 10 X 10m)



**Please Note;** When observing the costings of each plot. Consider each of the plots are 10 by 10 metres (100m<sup>2</sup>). For converting to a per hectare cost, times the dollar figure by 100.

Also note, that this would not be a true representation of cost per hectare, as some efficiency in bulk purchasing and labour efficiencies will be gained. This would result in a significant reduction of costs. Also consider that each plot was almost 100% sporobolus species. This is not always the case with every site.

### Labour & Hire Costings

Labour	\$50/hour
Bobcat hire	\$110/Hour
Wick Wiper	\$0 (council owned hire equipment)
Disk Plough	\$0 (council equipment)

**Plot Notes and results.**

**Plot 1**

**Control Site, No treatment.**

**Percentage cover target species -**      Before 85%      After 85%+

**Procedure**

30-September-2015 – Hand remove some Thistles and Dock species.

**Total Plot Costs - \$0**

## **Plot 2**

### **Flupropanate Liquid**

**Percentage cover target species -**      Before 80%      After 2%

### **Procedure/timeline**

16-October 2015 – Flupropanate liquid applied @ 2L/ha.

20-October-2015 – Slight yellowing seen on target species.

27-October – 2015 – Yellowing continuing of target species

09 November- 2015 – Strong yellowing of target species.

02-December-2015 – Strong growth in other species, target species very sick.

25-January-2016 – Brushcut back to simulate some grazing pressure.

09-March-2016 – Target species being out grown by other pasture grasses.

### **Costs**

Labour – 30 minutes -\$25

Herbicide - \$0.836

**Total Plot Costs - \$ 25.85**

### **Plot 3**

#### **Flupropanate Liquid & Grass Seed**

**Percentage cover target species -**      Before 80%      After 2%

#### **Procedure/timeline**

16-October 2015 – Flupropanate liquid applied @ 2L/ha.

20-October-2015 – Slight yellowing seen on target species. Hand spreading pasture grass species.

27-October – 2015 – Yellowing continuing of target species

09-November-2015 – Target species still growing, yet in very poor health. Non target species growing well

02-December – 2015 – Target species almost completely dead, pasture grasses taking over. Sewn grasses not taken well.

25-January-2016 – Brushcut back to simulate some grazing pressure. Target species almost all dead

09-March – 2016 – Non target species growing well, out competing the target species. Sewn grass, failed to have influence on plot.

#### **Costs**

Labour – 30 minutes -\$25

Herbicide - \$0.836

Grass Seed - \$5.50

**Total Plot Costs - \$31.34**

#### **Plot 4**

#### **Flupropanate Granular**

**Percentage cover target species -**      Before 85%      After 2%

#### **Procedure/timeline**

01-October – 2015 – Granular treatment of plot. Rate – 15kg/ha (150g used across plot)

14-October – 2015 – Slightest yellowing to target species

20-October- 2015 – Target species continuing to yellow

27-October- 2015 – Target species growth slowing

9-November - 2015 – Desirable pasture species increased in size, target species yellowing

2- December – 2015 – Significant growth of desirable species. Target species failing to grow.

25-January – 2016 - Brushcut back to simulate some grazing pressure. Target species reduced and in poor health

9-March 2016 – Target species overrun by other pasture species and reduced significantly

#### **Costs**

Labour – 30 minutes -\$25

Herbicide - \$2.20

**Total Plot Costs - \$27.20**

## **Plot 5**

### **Flupropanate Granular & Grass Seed**

**Percentage cover target species -**      Before 85%      After 2%

#### **Procedure/timeline**

01-October – 2015 – Granular treatment of plot. Rate – 15kg/ha (150g used across plot)

14-October – 2015 – Slight yellowing of target species. Spread pasture grass species across plot.

20-October- 2015 – Target species appear to be struggling with growth. Yellowing of leaves

27-October- 2015 – Target species growth slowing.

9-November - 2015 – Desirable pasture species increased in size, target species yellowing. No sign of new growth of pasture grass species added on 14-October.

2- December – 2015 – Significant growth of desirable species. Target species failing to grow. Still no sign of pasture grass species germinating. Hot weather of late, may have been a factor.

25-January – 2016 - Brushcut back to simulate some grazing pressure. Target species reduced and in poor health.

9-March 2016 – Target species overrun by other pasture species and reduced significantly. No real tangible effect seen by adding pasture grass seed to plot.

#### **Costs**

Labour – 30 minutes - \$25

Herbicide - \$2.20

Gras Seed - \$ 5.50

**Total Plot Costs - \$32.70**



## **Plot 6**

### **Glyphosate Spot Spray**

**Percentage cover target species -**      Before 70%      After 0%

#### **Procedure/timeline**

14-October -2015 – Plot treated with glyphosate @ 10ml/L. Spot spray treatment.

20-October – 2015 – Yellowing seen of target species. Other pasture species not affected.

27-October – 2015 – Target species in plot dead from treatment

17-November - 2015– Target species dead, some missed to be re treated. Desirable species starting to take over.

25-January – 2016 – Target species well and truly dead. Desirable species increased in growth, starting to take over. Some target species missed and need treatment.

9-March – 2016 – Desirable grasses taken over plot. Some target species still present, need treatment

8-April – 2016 – Spot spray of remaining target species.

#### **Costs**

Labour – 45 minutes - \$37.50

Herbicide - \$12.50

**Total Plot Costs - \$50**

## **Plot 7**

### **Glyphosate Spot spray & Gras Seed**

**Percentage cover target species -**      Before 70%      After 0%

#### **Procedure/timeline**

14-October -2015 – Plot treated with glyphosate @ 10ml/L. Spot spray treatment.

20-October – 2015 – Yellowing seen of target species. Other pasture species unaffected.

27-October – 2015 – Target species in plot dead from treatment. Grass seed spread across plot with hand spreader.

17-November - 2015– Target species dead, some missed plants require to be treated. No sign of grass seed germination from 27-October works.

25-January – 2016 – Target species well and truly dead. Desirable species increased in growth, starting to take over. Some target species missed and need treatment. No grass seed germination

9-March – 2016 – Desirable grasses taken over plot. Some target species still present, need treatment. Addition of grass seed has not proved to have an impact on plot.

8-April – 2016 – Spot spray of remaining target species.

#### **Costs**

Labour –50 minutes -\$42

Herbicide - \$12.50

Gras Seed - \$5.50

**Total Plot Costs - \$60**

## **Plot 7A**

### **Glyphosate & Turf**

**Percentage cover target species -**      Before 80%      After 2%

#### **Procedure/timeline**

14-October -2015 – Plot treated with glyphosate @ 10ml/L. Broad spray treatment across whole plot.

20-October – 2015 – Yellowing seen of all grass in plot.

28-October – 2015 – Brushcut dead grass down to low level and laid turf over the top

17-November - 2015– Turf appears to have failed. Lack of watering and hot weather likely a factor.

2-December – 2015 – Turf appears to be recovering. Some other pasture grasses growing at edged of plot.

25-January – 2016 – Turf recovering well and growing fast. Target specie and other pasture grasses growing in centre of turfed area again.

9-March- 2016 – Turf recovered and growing well. Target species re-established in the plot area.

#### **Costs**

Labour – 120 minutes -\$100

Herbicide - \$15

Turf - \$550

**Total Plot Costs - \$665**

## **Plot 8**

### **Solarisation 2 Months**

**Percentage cover target species -**      Before 85%      After 1%

### **Procedure/timeline**

2-October - 2015 – Plot 85% covered in target species.

14-October – 2015 – Black plastic covered site and pinned down with steel pegs.

21-October – 2015 – Temperature readings taken. Average on top of plastic between 68-75°C.  
Underneath temperatures between 50-55°C with very high humidity.

14-December – 2015 – Plastic removed. Almost 100% of all vegetation killed from the heat and humidity. Some dock plants still hanging on. Soil was wet and target species was rotten at the base.

### **Costs**

Labour – 45 minutes - \$37.50

Plastic - \$200

Steel Pegs - \$40

**Total Plot Costs - \$277.50**

## **Plot 9**

### **Solarisation 3 Months**

**Percentage cover target species -**      Before 85%      After 0%

### **Procedure/timeline**

2-October - 2015 – Plot 85% covered in target species.

14-October – 2015 – Black plastic covered site and pinned down with steel pegs.

21-October – 2015 – Temperatures taken, as per plot 8

27-October – 2015 – Small storm uncovered some of the plastic. Replaced and re-pegged

25-January – 2016 – Plastic removed. 100% of all vegetation killed from the heat and humidity. Soil was once again, wet and all grasses were rotten at the base.

### **Costs**

Labour – 45 minutes - \$37.50

Plastic - \$200

Steel Pegs - \$40

**Total Plot Costs - \$277.50**

## **Plot 10**

### **Solarisation 4 Months**

**Percentage cover target species -**      Before 80%      After 0%

### **Procedure/timeline**

2-October - 2015 – Plot 80% covered in target species.

14-October – 2015 – Black plastic covered site and pinned down with steel pegs.

21-October – 2015 – Temperatures taken, as per plot 8

9-March- 2016 – Plastic removed. 100% kill of all plants underneath.

### **Costs**

Labour – 45 minutes - \$37.50

Plastic - \$200

Steel Pegs - \$40

**Total Plot Costs - \$277.50**

## **Plot 11**

### **Soil Scrape only**

**Percentage cover target species** - Before 85%      After initial 0%      After 5 months 10%

### **Procedure/timeline**

15-October – 2015 – Plot scraped using bobcat. Scraped to depth of 10cm.

9-November – 2015 – First sign of grass species re-growth seen. Grass appears to be a couch species.

17-November – 2015 – Heavy rain filled the plot with water overnight.

2-December – 2015 – Grass species starting to re-cover the plot.

25-January – 2016 – Plot 50% re-covered with grass. Appears to be a number of target species growing back in the plot.

9-March – 2016 – Numerous target species matured and growing in the plot. Target species producing seed already.

### **Costs**

Bobcat Hire – 45 minutes - \$112.50

**Total Plot Costs** - \$112.50

## **Plot 12**

### **Soil Scrape & Mulch**

**Percentage cover target species** - Before 80%      After initial 0%      After 5 months 0%

### **Procedure/timeline**

15<sup>th</sup> & 16<sup>th</sup>-October – 2015 – Plot scraped using bobcat. Scraped to depth of 10cm. Mulch spread across plot. Mulch at depth of 10cm+

2-December – 2015 – Still no sign on grass re-growing in plot. Cattle have wandered across the plot and left droppings across it. May be a source of seed for the plot.

25-January – 2016 – Grass re-growing in plot. Couch moving in from the edges and 2-3 grass species growing in the centre. No target species seen in plot as yet.

9-March – 2016 – Site trampled by cattle once again. Still no target species seen on plot

### **Costs**

Bobcat Hire – 90 Minutes - \$225

Mulch - \$50

**Total Plot Costs** - \$275



## **Plot 13**

### **Soil Scrape & Gravel**

**Percentage cover target species -**      Before 80%      After 0%      After 5 months 1%

### **Procedure/timeline**

15<sup>th</sup> & 16<sup>th</sup>-October – 2015 – Plot scraped using bobcat. Scraped to depth of 10cm. Gravel/crusher dust spread across plot at depth of 10cm+

25-January – 2016 – First sign of any grass re-growing on the plot. Numerous cattle hoof prints across site. Some grass species appear to be sporobolus grasses.

9-March – 2016 – Site completely trampled by cattle, droppings across plot. Couch grasses moving in from the edges. 2-3 target species re-growing on the plot.

### **Costs**

Bobcat Hire – 90 Minutes - \$225

Fine Gravel - \$60

**Total Plot Costs - \$285**

## **Plot 14**

### **Soil Scrape & Sew grass**

**Percentage cover target species -**      Before 85%      After 0%      After 5 Months 5%

### **Procedure/timeline**

15<sup>th</sup> & 16<sup>th</sup>-October – 2015 – Plot scraped using bobcat. Scraped to depth of 10cm. Plot raked ready for seed sowing. Seed sown with Queensland lawn couch species mix.

27-October – 2015 – First sign of seed germination.

5-November – 2015 – Grass growth to 5cm, plot very dry and hot. Some death of seedlings.

17-November – 2015 – Plot flooded after storm night before. Seedlings recovering from dry already.

9-March – 2016 – Plot completely covered in grass. Target species present again and seeding.

### **Costs**

Bobcat Hire – 90 minutes \$225

Pasture Seed - \$5.50

**Total Plot Costs - \$230.50**

## **Plot 14A**

### **Soil Scrape and Turf**

**Percentage cover target species -**      Before 85%      After 0%      After 5 Months 5%

### **Procedure/timeline**

16-October – 2015 – Plot scraped using bobcat. Scraped to depth of 10cm.

28-October – 2015 – Turf laid across plot

5-November – 2015 – Turf appears to have mostly dies back, hot weather and lack of watering, likely cause

17-November – 2015 – Recent rainfall assisted recovery of the turf. Recovering and looking much greener, no target species returned as yet.

9-March – 2016 – Turf recovered and growing well. Target species growing back through the gaps in the turf rows.

### **Costs**

Bobcat Hire – 60 minutes \$150

Turf - \$550

Labour – 120 minutes \$100

**Total Plot Costs - \$800**

## **Plot 15**

### **Fire**

**Percentage cover target species -**      Before 85%      After 85%

### **Procedure/timeline**

15-October – 2015 – Plot brush cut in preparation for fire. Brush cut to help reduce flame height.

5-November – 2015 – Plot burnt

2-December – 2015 – Plot completely green again. Appears to be no impact on target species.

25-January – 2015 – Plot completely covered in target species. Fire had no impact on adult plants. Target species in full seed.

9-March – 2015 – Plot density appears to have increased in target species cover after burn.

### **Costs**

Labour X3 – 30 minutes -\$75

**Total Plot Costs - \$75**

## **Plot 16**

### **Fire and Spot spray glyphosate**

**Percentage cover target species -**      Before 80%      After 2%

### **Procedure/timeline**

15-October – 2015 – Plot brush cut in preparation for fire. Brush cut to help reduce flame height.

5-November – 2015 – Plot burnt.

2-December – 2015 – Plot completely green again. Appears to be no impact on target species.

17-December – 2015 – Target species spot sprayed with glyphosate.

25-January – 2015 – Target species 90% spot sprayed. Other pasture species recovering.

9-March – 2015 – desirable pasture species recovering and growing well. Spot spray of a few remaining target species.

### **Costs**

Labour X3 – 30 minutes -\$75

Herbicide - \$15

**Total Plot Costs - \$90**

## **Plot 17 (1/2)**

### **Close Burn**

**Percentage cover target species -**      Before 80%      After 1%

### **Procedure/timeline**

15-October – 2015 – Plot brush cut in preparation for fire.

5-November – 2015 – Plot burnt

17-November -2015 – Plot re- burnt with weed dragon flame gun. Heating plants and soil for 15 seconds per pass. Attempting to achieve 125°C for the 15 seconds.

9-March – 2016 – Grasses re-growing in this half of plot are not the target species. Mostly desirable pasture grasses.

### **Costs**

Labour – 180 minutes - \$150

9Kg Gas bottle X 2 \$60

**Total Plot Costs - \$210**

## **Plot 17 (2/2)**

### **Spot Burn**

**Percentage cover target species -**      Before 80%      After 0%

### **Procedure/timeline**

15-October – 2015 – Plot brush cut in preparation for fire.

5-November – 2015 – Plot burnt

17-November -2015 – Plot re- burnt with weed dragon flame gun. Spot flaming plants and surrounding soil for 20 seconds.

9-March – 2015 – Some missed or new target species growing back were spot flamed again with the flame gun. Desirable pasture species growing well.

### **Costs**

Labour –30 minutes -\$50

9Kg Gas Bottle (approx. ¼ use) \$12

**Total Plot Costs - \$62**

## **Plot 17A**

### **Jute Matt and Natives plants**

**Percentage cover target species -**      Before 85%      After 10%

### **Procedure/timeline**

15-October – 2015 – Plot brush cut to keep grass low and simulate grazing.

2-December – 2015 – Plot brush cut for maintenance.

21-January - -2016 – Plot brush cut, Jute matt laid and 300 native grasses planted

9-March – 2016 – many natives growing well. Approximately 20 target species growing through in place of some natives. Target species in full seed.

### **Costs**

Labour –120 minutes - \$100

Jute Mat - \$400

Steel Pegs - \$40

Native plants - \$ 550

**Total Plot Costs - \$1090**



## **Plot 18**

### **Soil Tilling X 1**

**Percentage cover target species -**      Before 90%      After 85%

### **Procedure/timeline**

5-November – 2015 – Plot broad sprayed with glyphosate to prepare for tilling.

2-December – 2015 – Plot tilled with disc plough. Single run.

25-January – 2016 – 50% of plot re-grown with target species.

9-March – 2016 – Target species completely taken over plot again. Only slight reduction.

### **Costs**

Labour – 60 minutes - \$50

**Total Plot Costs - \$50**

## **Plot 19**

### **Soil tilling X 2 (Cross Tilling)**

**Percentage cover target species -**      Before 90%      After 85%

### **Procedure/timeline**

5-November – 2015 – Plot broad sprayed with glyphosate to prepare for tilling.

2-December – 2015 – Plot tilled with disc plough. Cross ploughed (two runs).

25-January – 2016 – Over 50% of plot re-grown with target species.

9-March – 2016 – Target species completely taken over plot again. Almost 100% covered plot again.

### **Costs**

Labour – 60 minutes - \$50

**Total Plot Costs - \$50**

## **Plot 20**

### **Soil tilling X 2 (Cross Tilling) & Cereal Crop**

**Percentage cover target species -**      Before 90%      After 40%

#### **Procedure/timeline**

5-November – 2015 – Plot broad sprayed with glyphosate to prepare for tilling.

2-December – 2015 – Plot tilled with disc plough. Cross ploughed (two runs). Cereal (Sorghum) seed hand spread evenly across plot.

25-January – 2016 – 70% of plot re-grown with cereal crop, large reduction in target species.

9-March – 2016 – Cereal crop yellowing and dying back. Crop failed to take hold in some patches of the plot. Target species coming back and growing well in 25% of the plot.

#### **Costs**

Labour – 70 minutes - \$58

Cereal /Sorghum seed - \$15

**Total Plot Costs - \$73**

## **Plot 21**

### **Soil tilling X 2 (Cross Tilling) & Sew Grass**

**Percentage cover target species -**      Before 85%      After 30%

#### **Procedure/timeline**

5-November – 2015 – Plot broad sprayed with glyphosate to prepare for tilling.

2-December – 2015 – Plot tilled with disc plough. Cross ploughed (two runs). Queensland couch mix seed hand spread evenly across plot.

25-January – 2016 – 80% of plot re-grown with Queensland couch mix grass species. Large reduction in target species.

9-March – 2016 – Couch species still growing strong. Target species also making a comeback and growing well in 25% of the plot.

#### **Costs**

Labour – 70 minutes - \$58

Pasture Grass - \$5.50

**Total Plot Costs - \$73**

## **Plot 22**

### **Wick Wiper**

**Percentage cover target species -**      Before 85%      After 10%

### **Procedure/timeline**

20-October – 2015 – Plot established

12-January – 2016 – Wick wiper run over the plot. Rate of application 1:25 glyphosate to water. Detergent used to assist in adhering to the grasses.

25-January – 2016 – Most grasses dead and affected from wick wiper run over. Lower growing desirable species still alive.

9-March – 2016 – A lot of grasses growing back in plot. Mostly desirable pasture species. Some target species also growing back, approx. 10%.

### **Costs**

Labour – 30 minutes - \$25

Herbicide - \$25

**Total Plot Costs - \$50**