



# CGA FINAL REPORT

## *Part 1 - Summary Details*

---

Please use your TAB key to complete Parts 1 & 2.

CRDC Project Number: CGA1606

CGA Darling Downs Cotton Growers Inc (DDCGI)

---

**Project Title:** Upgrade to Darling Downs weather station network and chemical application days

---

**Project Commencement Date:** 01/07/2016    **Project Completion Date:** 30/11/2016

## *Part 2 – Contact Details*

---

**Administrator:** Sandy Cowell – Secretary - DDCGI

**Organisation:** Darling Downs Cotton Growers Inc (DDCGI)

**Postal Address:** PO Box 114 Dalby Qld 4405

**Ph:** 0427 430 966

**Fax:** n/a

**E-mail:** secretary@ddcgi.com.au

---

## *Part 3 – Final Report*

---

### *Background*

#### **1. Outline the background to the project.**

Weather Station Upgrades: The Darling Downs Cotton Growers Inc (DDCGI), and individual growers established 21 weather stations between the period 1996-1998, to provide growers with localised weather information to assist with on-farm management operations. The DDCGI has maintained these stations over this period, and in recent years, been working on major upgrades to digital technology to enable text communication with growers rather than the old analogue voice system. To date 11 stations have been upgraded by the DDCGI, and funding from this grant contributing to upgrading another four stations.

Chemical Application Workshops: It is vital for growers to maintain a high level of responsible chemical use and efficient crop protection through continued improvement, uptake a new technology and adoption of best practice. Spray drift is not only a risk of susceptible crops, non-target and sensitive areas but also to the future access of certain groups of chemicals. In addition, poor application methods and reduced efficacy contribute to the development of resistance. The DDCGI is committed to responsible chemical use and the stewardship of agricultural chemicals. The DDCGI plans to use funding from this grant towards organising three training and extension days across the region, the focus will be on chemical application best practice, spray drift risk management, understanding the local weather conditions and record keeping compliance. The DDCGI will engage the services of Mary O'Brien Rural Enterprises to deliver these workshops.

## *Objectives*

### **2. List the project objectives (from the application) and the extent to which these have been achieved.**

Weather Station Upgrades: Upgraded weather stations will improve the communication of weather information to growers at critical times. This enhances the ability of growers across the Downs to have accurate real time weather data for spray applications and will enable them to make informed decisions about when to spray and when to stop spraying, improving local knowledge and practices. The benefits from upgrading weather stations will continue into the future and beyond the life of this project. Long-term weather data can be used to demonstrate local and seasonal variability.

Chemical Application Workshops: The training days will improve the skills and knowledge of participants in the areas of: spray application risk management, record keeping, weather monitoring and best practice spray application. These skills and knowledge will enable growers to make better spraying decisions and, therefore, reduce the incidence of spray drift. Improved practices will also improve application efficacy, reduce the development of resistance, contribute to responsible chemical use and the long term stewardship of agricultural chemicals.

## *Methods*

### **3. Detail the methodology and justify the methodology used. Include any discoveries in methods that may benefit other related projects.**

Weather Stations Upgrade: Equipment was purchased and four weather stations (Pirrinuan, Jimbour, Coranga & Tyunga) were upgraded to the digital network. The work was undertaken by Landmark Dalby and Murray Boshhammer was responsible for overseeing the project.

Spray Application Workshops: Workshops were held in the Cecil Plains, Dalby and Byee areas (Byee yet to be held due to rain events & cotton planting). These workshops were open to all farmers and consultants (not just cotton growers) with the aim of sharing information and improving spray application in all agricultural sectors. The workshops provided current spray application best practice information to growers and consultants. Summer Weed Control Best Practice Guide brochures were provided to participants to assist in better spraying decisions for the coming season. A bubble machine was used to visually show participants the movement of air at different times of the day. Information was provided to growers on the new methods to access the DDCGI weather stations on the digital network. Historical data from the DDCGI weather stations was graphed and used to show growers the daily variations in weather conditions and how to identify appropriate times for spraying.

## *Outcomes*

### **4. Describe how the project's outputs will contribute to the planned outcomes identified in the project application. Describe the planned outcomes achieved to date.**

Weather Station Upgrades & Spray Application Workshops:

#### 1. Economic Benefits

Having accurate weather data and the knowledge to interpret it has improved the ability of growers to make safer and more efficient spray applications and will contribute to a reduction in the risk of incidents of spray drift by expanding key knowledge. Spraying under appropriate weather conditions increases the efficacy of applications and reduces chemical losses. By increasing efficacy and reducing the potential for drift, this has economic benefits through reduced chemical costs,

reducing the potential for resistance and reduced incidents of off target movement and crop damage.

## 2. Environmental Benefits

The environmental benefits will be short and long-term and will extend beyond the life of the project. Improving spray applications will contribute to the environment through reducing the risks of off-target movement of pesticides to waterways and vegetation. The Darling Downs is a densely populated area with small land holdings, therefore, the risk of pesticides affecting the environment, crops, livestock, and humans is increased. It is critical that this important cotton production area maintain high standards of environmental responsibility and seek out ways for continuous improvement. Upgrading the weather stations and continuing to educate chemical users is a positive way for the industry to contribute to stewardship of the environment and promote responsible and sustainable chemical use practices.

## 3. Social Benefits

The weather station network across the Darling Downs is a well-known and respected reliable source of information for growers. Having live local weather data for spray decisions is a valuable tool when assessing the risk of off-target movement and provides a higher level of confidence from the community and other farmers in the practices of Darling Downs cotton growers. The DDCGI is a respected entity in the local community. This has been achieved by ensuring a high level of proactive and beneficial engagement and demonstration of best practice.

## 5. Please report on any:-

- a) **Feedback forms used and what the results were** – no feedback forms were used
- b) **The highlights for participants or key learnings achieved** – verbal feedback received was very positive with many participants seeking ongoing relationships/support in the area of spray application and access to weather station data. Several participants indicated they would totally change their spray application practices as a result of the information provided during the workshops. Nearly all participants particularly enjoyed seeing the movement of air as demonstrated with the bubble machine.
- c) **The number of people participating and any comments on level of participation** – The Cecil Plains workshops had 26 participants and the Dalby workshop had 20 participants. The numbers at the Dalby workshop were less than expected due to a rain event. The expected numbers for the Byee workshop will be a similar range. While the Byee area has only 10 cotton growers, these workshops are open to all farmers and consultants in an effort to improve spray application in all agriculture.

### *Budget*

6. **Describe how the project's budget was spent in comparison with the application budget. Outline any changes and provide justification.** The budget spends in accordance with the application: \$19,622.11 (GST incl) on upgrading four weather stations and \$6,600 (GST incl) towards three spray application workshops.

Please list expenditure incurred. (Double click inside the table to enter the data)

Date	Description	Amount excl GST	GST	Total
Jul-Aug 2016	Pirrinuan - weather station upgrade			
	Jimbour - weather station upgrade			
	Coranga - weather station upgrade			
	Tyunga - weather station upgrade	\$ 17,838.28	\$ 1,783.83	\$ 19,622.11
18/08/2016	Spray application workshop Cecil Plains area	\$ 2,000.00	\$ 200.00	\$ 2,200.00
31/08/2016	Spray application workshop Dalby area	\$ 2,000.00	\$ 200.00	\$ 2,200.00
Nov-16	Spray application workshop Byee area	\$ 2,000.00	\$ 200.00	\$ 2,200.00
			<b>TOTAL</b>	<b>\$ 26,222.11</b>

### Conclusion

#### 7. Provide an assessment of the likely impact of the results and conclusions of the research project for the cotton industry. What are the take home messages?

Weather Stations Upgrades: The upgrades to the Darling Downs weather stations have had significant impact on the efficiency for growers accessing weather data. In addition, it assists growers in meeting their legislative obligations in relation to responsible chemical use. Having effective and efficient processes in place demonstrates the willingness of the cotton industry to not only promote but implement good practices.

Spray Application Workshops: The provision of education to chemical users is critical to ensure spray application best practice. The technology and information is constantly changing and it is important that this information is communicated to growers. Improving spray application practices has many benefits to the industry through reductions in drift incidents, improved environmental responsibility, managing the development of resistance, stewardship of key chemicals and maintaining high industry standards.

### Extension Opportunities

8. Detail a plan for the activities or other steps that may be taken:

- (a) **To tell other CGAs/growers/regions about your project** – Information about this project was communicated to the Macintyre Valley and Mungindi CGAs who then requested Spray Application workshops in the Border Rivers region. These workshops were a huge success and reached 130 growers. These workshops also highlighted the benefits of the weather station network on the Darling Downs.
- (b) **To keep in touch with participants** – Contact details were provided to participants to access additional information as needed. Updates on future events and weather stations are communicated via the CGA email, the CGA facebook page and CGA meetings. Mary O'Brien Rural Enterprises also updates growers through Twitter and Facebook.
- (c) **For future projects** – The CGA is currently trialling a web based system for the weather stations moving forward. The aim of this is to reduce the running costs of the current system and provide wider access to farmers across the Darling Downs.