Cotton Catchment Communities CRC
NSW DEPARTMENT OF PRIMARY INDUSTRIES

COTTON *TALES*

Gwydir Valley *"What's happening in the north west"*

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Phenoxy herbicide damage to cotton

Herbicide damage to summer crops such as cotton and sorghum has been an issue in recent years. Recent reports have already identified hormone damage to cotton in the Gwydir this season. The impact of this damage on yield is always the big question.

Damage level will be influenced by plant development stage, rate received and growing conditions. Trial work conducted in the 1990's indicated the impact of low rates of different fallow herbicides on cotton yields at first flower. This showed differences in the sensitivity of cotton to various herbicides. Yield decline was greatest with 2,4-D. However, low rate applications used in these trials could still be quite high compared with a drift situation.

Herbicide symptoms in a crop do not always mean disaster and can have little impact at the end of the season. However, depending on weed spectrum, where the use of 2,4-D can be substituted for another phenoxy herbicide this reduces the risk damage to susceptible crops.

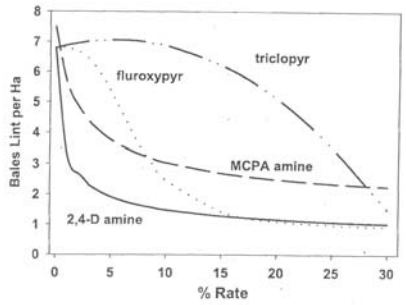

Figure 1. Yield response to low rates of fallow herbicides applied to cotton at first flowering. *(Source Storrie et al 1998 Australian Cottongrower Magazine January-February).*

Phenoxy herbicides

Herbicides in the phenoxy group such as 2,4-D are a cost effective herbicide option for fallow weed control. It is therefore essential that the products are used responsibly by all members of the farming community so improper use does not jeopardize the future availability of these products.

Current label requirements for the use of 2,4-D herbicides limit application to **coarse to very coarse** spray droplets and within wind speeds of 3 - 15 kph. Growers should check nozzle manufacturer's specifications for the nozzles they are using to ensure they meet the new requirement. Standard flat fan nozzles are generally not suitable for producing this spectrum.

Highly volatile ester (HVE) formulations of 2,4-D have been further restricted with a suspension of these products. This includes a no spray window from the beginning of **September to the end of April.** More information on the APVMA website.

Responsible Spray Application

With recent patchy storm events producers have been looking to control weeds in fallows. When making fallow spray decisions careful consideration must be given to herbicide selection, sensitive crops within the area and spray application conditions.

Application during unsuitable weather conditions can compromise the success of spray applications. At temperatures above 28 degrees and low humidity evaporation rates increase and droplets quickly lose size and mass, increasing potential product loss from the target and efficacy reduction. Up to **40 per cent** of the herbicide may not reach the intended target under these conditions which means it has ended up somewhere other than on your weeds, possibly doing damage and compromising control.

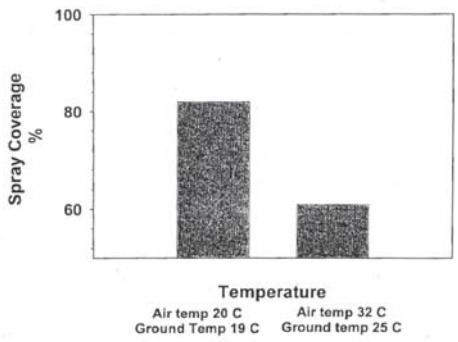

Figure 2. Boom spray coverage at two temperatures (*Source A. Storrie, NSW DPI)*

Every grower/operator/contractor must conduct a risk assessment prior to spraying. The fact that herbicide is reaching off-target sites indicates that this is not being done or not being done correctly.

Points to consider to optmise spray efficacy

- Temperature should be 28^{o}C or less.
- Relative humidity should be 45% or greater. **Avoid** spraying when wet and dry bulb difference is **greater** than 10^{O}C.
- Wind speeds of 3-15 km/hr are recommended (8-10 km/hr are ideal) for herbicide application by groundrig. Lighter or stronger winds cause variable results, increasing herbicide loss potential.
- Growers have a legal responsibility to ensure that chemical applications do not contaminate or damage other crops or sensitive areas.
- Low drift nozzles are not no-drift nozzles – they reduce the number of 'driftable' droplets.
- Non-volatile formulations can still drift off-target potentially leading to poor weed control and damage.
- There will be times that a spray application CANNOT BE DONE due to unsuitable conditions.

Under the Pesticides Act weather conditions and relevant spray details must be monitored and recorded for each chemical application. Spray Log Books can be purchased from the QDPI&F (07 4688 1460). Cost is $6.60 each plus postage and handling. Copies of SPRAYpak are also available from NSW DPI.

Mimosa Bush Field Day

Yetman Common
11am Monday 10th December

- Evaluation of 2006 & 2007 herbicide trials
- Demonstration of Mimosa Bush mulching technology
- Landholder perspective of impact of mimosa bush
- Management options including research/funding
- Native veg considerations
- Current control programs

Contact: Les Tanner of Inverell Shire Council on 0427 241 806.