whats up...

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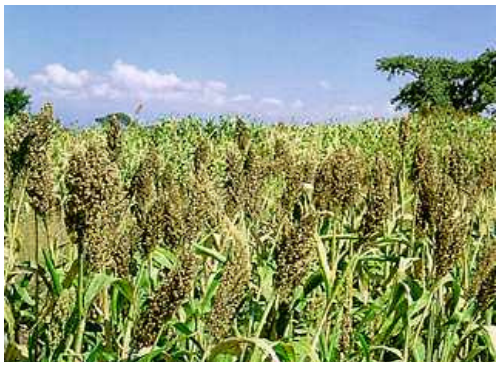
Pursehouse Rural Newsletter

ERGOT: A risk to consider in late planted Sorghum



An infected seed head, and honeydew clusters of infected seeds compared with normal.

Sorghum ergot is caused by a fungus, *Claviceps africana*. The disease reduces yield through poor seed set and causes harvesting difficulties due to sticky honeydew on seed heads. Grain quality can be reduced through lower nutritional value and due to the presence of fungal bodies called sclerotes (ergots). Sorghum grain contaminated can also cause toxicity when fed to livestock, particularly sows, dairy cattle and beef cattle in feedlots. Currently in Queensland and NSW there is a regulated limit of 0.3% sorghum ergot in grain intended for stock food, but contracts set by the National Agricultural Commodities Marketing Association (NACMA) specify a lower limit of 0.1% for grain intended for lot-fed cattle.
In the past the majority of ergot infection has occurred in later planted crops. This is due to the flowering occurring through wet, humid weather. Rain and high humidity at flowering accompanied by temperatures of 20°C – 24°C are ideal conditions for ergot infection.

A reduction in sorghum ergot can be achieved through taking several steps at different management times;

Before Sowing
Planting in a paddock with even soil type and preparation
Sowing on a good soil moisture profile and ensuring correct soil nutrition levels
Using high quality seed.

At Sowing
Sow during the optimum planting window (late Oct – late Jan)
In lower yield situations plant wider rows (1m or skip) ensuring the same plant population per hectare, as this will reduce tillering.

During Crop Growth
Honeydew in tillers can pose a threat to harvesting operations especially if harvesting is delayed, or if the crop is planted late. Killing tillers with a herbicide such as glyphosate is an option. Glyphosate can only be applied when the seeds in the main head are at or beyond the "dough stage" and the weather has turned cool and showery.

At and After Harvest
The sclerote limit of 0.3% by weight in a grain sorghum sample is equivalent to approximately 1% (or 20) of the grains in a sorghum head, assuming 2,000 seeds per head and no reduction in sclerote numbers during harvest.
Sclerotes are much lighter than grain, so during harvesting a high proportion (30-90%) is blown from the back of the header. Increasing the fan speed can increase the percentage of sclerotes that are ejected, but must be selected to ensure that small-sized, clean grain is not lost.
Higher levels of ergot infection tends to occur at the edges of crops and where flowering has been uneven. Infected areas can be harvested separately from the rest of the crop and either discarded or diluted with uncontaminated grain.
Using sieve and/or gravity table graders can reduce ergot levels significantly, depending on the size of sclerotes in the sample and size of grain.

Source; The Queensland Department of Primary Industries and Fisheries (QDPI&F)

Where the rain fell across Pursehouse Rural's branches 21-12-09 to 4-01-10 (mm)

Quirindi	Narrabri	Coonabarabran	Boggabri	Mullaley	Gunnedah
141.2	181.8	365.8	124.2*	154.4	208.4

Source: www.bom.gov.au

When to Spray?

Choosing the right time to spray is an important decision that has had much time in the headlines over recent times. The lack of rainfall and the hot windy conditions prior to Christmas limited the amount of fallow and in-crop spraying performed over the recent weeks.
Weeds that are under either moisture or heat stress are generally not actively growing and therefore are not in the ideal condition to be sprayed. This can greatly reduce the efficacy of a post-emergent herbicide such as glyphosate on hard to kill weeds due to the fact that active growth promotes the uptake and translocation of systemic herbicides around the plant.

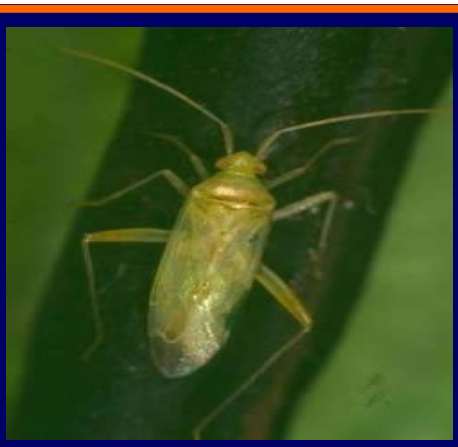
Consecutive days above 38°c can cause heat stress to plants and severely reduce the production of healthy new growth. This reduced growth will make it more difficult to get systemic herbicides into the plant and much harder to kill weeds such as annual summer grasses.
In an ideal world, waiting for more favourable conditions until spraying will produce better results but this is not always practical.
Often weeds need to be treated prior to planting or before crops emerge meaning a small window of application. Under these circumstances we can reduce the affects of high temperatures by spraying early before consecutive days of extreme high temperatures have occurred. Where the use of glyphosate products is needed in fallow situations we can influence its efficacy by avoiding tank mixes with products that may cause antagonism with certain weeds, particularly summer grasses. These include 2,4-D products.

If these products are required in the tank mix serious consideration should be taken to either increase the rate of glyphosate or split the application and come back with the 2,4D product 24-48 hours after the glyphosate application, particularly if chasing troublesome weeds such as Fleabanes or Grasses.

Adding an ammonium sulphate based adjuvant may also help in achieving acceptable control when using glyphosate under slightly marginal conditions. For further information on optimum spraying conditions contact Techspray, or your local Pursehouse Rural agronomist.

Mirid Control in Mungbeans

Mirids can be present in mungbeans at any stage from seedlings to podding. In general, mungbeans are more tolerant of early damage as opposed to late. In the vegetative stage of growth they can tolerate upto 33% defoliation without yield loss. Damage incurred by late podding can greatly increase the yield obtained. Budding, flowering and early-podding crops are at greatest risk. Low populations of green mirids are often present in vegetative crops but there is no evidence they cause 'tipping' of vegetative terminals or have any impact on yield. Mirid populations usually increase with the onset of budding and peak during late podfill. They are extremely mobile and in-crop populations can increase rapidly, in particular following the north-west winds common in spring. Mirids prefer to feed on flowers, buds and young pods, causing these to abort. They may also attack more mature pods, damaging the seeds inside without causing shedding.



Early Control and Monitoring
The early control and monitoring of a mungbean crop could potentially save and secure a higher yield potential for the crop. The mungbean threshold for mirids can vary from 0.3-0.6/m^2 depending on application costs and mungbean prices. Strategies toward early management include;

- Shortening of the crops flowering period. This can be done by planting on a full moisture profile and watering the crop just before budding.
- Consider planting the crop in rows (approx. 50cm) for ease of monitoring and pest sampling.
- Consider supplementing a lower chemical rate with salt (0.5% NaCl) to protect beneficial insects. Trials by the QPIF have shown this to be effective.

Management of Mirids
There are 3 main issues to be considered when implementing a sound management strategy for mirids in mungbeans;

- Ensure scouting and control of the pest population before budding of the plant. In Northern NSW this can be as early as day 40 in growth.
- Investigate the protection of beneficials to adopt a more holistic approach to control. Using a lower application rate of dimethoate (250mLs/ha opposed to 500mLs/ha) is considered as the best way of doing this. It may also minimise the risk of flaring heliothis problems.
- Using a two spray application of dimethoate (5-10 days apart). This will ensure that the total population (both adults and nymphs) is controlled before budding.

A typical adult Green mired and a severely damaged mungbean plant and pods.

Source:
Australian Mungbean Association