BROADLEAF WEED CONTROL IN NEWLY SOWN GRASS PASTURES

Over the 2003-2004 wet season, the Agriculture Weeds team in conjunction with Marrakai Extension and Carmor Plains Station, compared the efficacy of four post-emergent herbicide treatments for broadleaf weed control and pasture damage in four newly established grass pasture species.

Background

Broadleaf weed invasion is a major production constraint in improved pastures. A range of broadleaf herbicides have been assessed in previous studies on established pastures, where the diuron and 2,4-D amicide mix produced excellent results, especially as this also effectively controlled annual grass weeds such as *Pennisetum pedicellatum*. The Brush-Off® and 2,4-D amicide mix also produced good results and was the most cost-effective treatment within a single season. Ideally, these herbicides should be applied early in the growing season, when weeds are small and lower rates are effective.

However, there was uncertainty whether these herbicides would cause damage to newly sown pasture, especially when applied in the first month after pasture germination; the Brush-Off® label states that severe damage may occur to newly sown pastures, diuron has grass activity at certain rates on certain species, and some grass and cereal species have listed tolerance levels for 2,4-D amicide.

Therefore, we aimed to apply these herbicides, and combinations thereof, at different rates and times, to evaluate phytotoxicity on selected first-year sown pasture species and to provide further information on efficacy on broadleaf weeds. The experiment was conducted at Carmor Plains Station, 130 km west of Darwin.

The site was on a black levee soil with a heavy weed infestation of mainly senna, sida, calopo and hypitis up to 30 cm high, then disced on the 11th December 2003. Grass species were sown by hand immediately after cultivating, then fertiliser (Hi-Fert Complete M Blue 12:5:14:13) at 200 kg/ha applied to half the site.

Pasture species assessed were:

- *Setaria sphacelata* cv. Kazungula
- *Digitaria swayntonii* cv. Arnhem
- *Digitaria milanjiana* cv. Jarra
- *Paspalum nicorae* cv. Blue Dawn

Herbicides were applied with a quad bike mounted 2m boom at two times:

Early - 20th January (8 weeks after sowing). Weeds were up to 30cm high and extremely dense, and grasses were up to 20 cm high and 6-leaf stage.

Late - 24th February (12 weeks after sowing). Grasses had started to flower and were greater than 50 cm tall, weeds were up to 1m in height.

Herbicide treatments were:

<table>
<thead>
<tr>
<th>Herbicide Treatment</th>
<th>Rate of product</th>
<th>Amount of a.i.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EARLY 2,4-D amicide 625 ONLY</td>
<td>0.8 L/ha</td>
<td>500 g/ha</td>
</tr>
<tr>
<td>LATE 2,4-D amicide 625 ONLY</td>
<td>1.6 L/ha</td>
<td>1000 g/ha</td>
</tr>
<tr>
<td>EARLY Diuron 500 + 2,4-D amicide 625</td>
<td>1 L/ha + 0.8 L/ha</td>
<td>500 g/ha + 500 g/ha</td>
</tr>
<tr>
<td>LATE Diuron 500 + 2,4-D amicide 625</td>
<td>3 L/ha + 1.6 L/ha</td>
<td>1.5 kg/ha + 1000 g/ha</td>
</tr>
<tr>
<td>EARLY Brushoff® + 2,4-D amicide 625</td>
<td>7.5 g/ha + 0.8 L/ha</td>
<td>4.5 g/ha + 500 g/ha</td>
</tr>
<tr>
<td>LATE Brushoff® + 2,4-D amicide 625</td>
<td>15 g/ha + 1.6 L/ha</td>
<td>9 g/ha + 1000 g/ha</td>
</tr>
</tbody>
</table>

A 1000 wetter was applied with each herbicide treatment.
Biomass cuts of a 1m by 0.5m quadrat were taken on the 5th May 2004. Samples were separated into broadleaf weeds and grass species. On page 3 Photo 1 illustrates harvesting the site, and Photo 2 illustrates the time of application effect for Arnhem at final harvest.

**Results:**

The Brush-Off® plus 2,4-D amicide treatment provided the best weed control and maximised grass yields for all pasture species. There appeared to be some interaction between fertiliser, species and herbicide response. For Arnhem, the early Brush-Off + 2,4-D amicide application produced the greatest grass yield and lowest broadleaf weed yield, irrespective of fertiliser status. For Jarra, similarly, the early Brush-Off® + 2,4-D amicide application produced the greatest grass yield, and lowest weed yield. However, for the unfertilised plot, the later application produced the higher grass yield. Results for the Jarra, both fertilised and not fertilised, are presented in the two graphs below.

**Discussion**

Generally, the early herbicide application provided the best weed control and higher pasture species yield than the later application. There was some grass damage from the Brush-Off® + 2,4-D amicide treatment, although it was difficult to quantify due to the presence of weed competition.

However, the control plots, where no herbicide was applied, indicated that not applying herbicide would cause a greater reduction in yield through weed competition than herbicide damage in high weed densities. There appeared to be little response from the pasture species on the addition of fertiliser. This may have been attributed to better weed growth with the addition of fertiliser, effectively competing with the pasture species, or adequate residual nutrition due to the presence of calopo (tropical pasture legume).

A demonstration site evaluating similar herbicides when applied to buffel grass (*Cenchrus ciliaris*) was also conducted in Paddock 1, DDRF. Buffel was sown on the 10th January, and herbicides were applied on the 19th February, when buffel was 5-7 leaf and 10-20 cm high. Consistent with the Carmor site, the Brush-Off® + 2,4-D amicide produced the best weed control and minimal damage to the buffel. The diuron + 24D treatment caused moderate to severe damage.

It is intended to do a replicated experiment with similar treatments in the 2004-05 season to increase confidence in herbicide phytotoxicity on both weeds and pasture species, and the effect of timing of application. It is proposed the experiment be conducted on a property in the Douglas Daly district to enhance farmer relevance and extension opportunities.

Rowena Eastick, Nick Hartley, Ben Beumer
Photo 1  Biomass cuts were taken on the 5th May 2004.

Photo 2  Biomass harvest 5th May - time of herbicide application effect for Brush-Off® and 2,4-D amicide applied on Arnhem 8 weeks (LHS) and 12 weeks (RHS) after sowing. Results demonstrated that early application produced the greatest reduction in final weed biomass and highest grass yield.

We envisage the users of this database will include:
- Producers
- Agents:
- Livestock exporters;
- Saleyards;
- Tag Manufacturers;
- Processors;
- State Departments

**HOW TO USE THE SEARCH ENGINE**

**Searching on PIC**
PICs are of the format ‘THDG9999’. All PICs must start with the letter T, for Territory.
Type in the PIC and click on ‘Search’. The property name and region will be displayed.

**Searching on Property Name**
Type in the name of the property (or any part thereof e.g. Sun for Sunnyside) and click on ‘Search’. The results will be sorted by the property name.

**Note**
Searches are not case-sensitive. Searches return matches on any part of the field. To clear the search fields, click on ‘Reset’.

**Wildcards**
Wildcards can be used for advanced searching. The allowable wildcards are shown below:
%: matches zero or more characters and _ : matches any single character. Eg %abc will list all data with “abc” within any part of the text.

For further information on livestock movements and livestock identification please contact:

- **Darwin**
  Dave Russell
  Regional Stock Inspector
  Ph: 08 8999 2031
  Fax: 08 8999 2146

- **Katherine**
  Bluey Lunn
  Regional Stock Inspector
  Ph: 08 8973 9754
  Fax: 08 8973 9759

- **Tennant Creek**
  Ted Martin
  Regional Stock Inspector
  Ph: 08 8962 4490
  Fax: 08 8062 4480

- **Alice Springs**
  Graeme Coleman
  Regional Stock Inspector
  Ph: 08 8951 8182
  Fax: 08 8951 8112

For updating data please contact:
PIC Database Manager, Veterinary Services Darwin
Phone: 08 8999 2033 Fax: 08 8999 2146
E-mail: adele.kluth@nt.gov.au

**HOW TO FIND A PROPERTY IDENTIFIER CODE FOR AN NT PROPERTY**

**Property Identification Code (PIC)**
It is a mandatory requirement for owners of a holding where cattle or buffalo are kept to register their holding. Owners are issued with a certificate listing the PIC, the property portion number and owner details.

The PIC is used for all waybills and most documents relating to cattle and buffalo. The property name and PIC are provided to the NLIS national database. There are currently 500 operational PIC’s in the Northern Territory.

A new Property Identification Code (PIC) search facility is now available on the DBIRD Internet to assist cattle and buffalo industry personnel.

It is located on the DBIRD Internet site located with other important issues relating to Livestock Identification and Movement at www.primaryindustry.nt.gov.au or through the direct URL: http://pic.primaryindustry.nt.gov.au
Cattle growth rates in the Douglas Daly region are typically higher than many other regions of the NT due to reliable rainfall (average 1208 mm annually) and the introduction of improved pastures. This combined with the smaller size of properties (and hence better stock control) means that the controlled mating of heifers for the first time as yearlings is a management option that can be considered there.

Like most of the NT, the Douglas Daly has a pronounced wet and dry season, and the timing of the break in the season (the start of the wet season) is probably the most important factor determining how much heifers grow. This has a large effect on heifer fertility since it is generally accepted that weight is the major factor influencing the onset of puberty and conception rates of heifers (Entwistle 1983).

Each year at Douglas Daly Research Farm (DDRF) from 1999 to 2003, nine Brahman heifers were weighed monthly for a year from weaning in May/June. They grazed buffel pasture at a stocking rate of 1.5 head/ha and had access to mineral supplement blocks year round. Rainfall data was obtained from the Bureau of Meteorology for a weather station situated at DDRF and the date of the break in the season was identified (considered to be when 50 mm of rain was received within two weeks).

Figure 1 shows the strong relationship between the timing of the break in the season (expressed as the number of days before Jan 1st) and the average growth of heifers over the whole year. The timing of the break in the season is even more critical if yearling mating of heifers is intended. In this case, bulls are usually put in at the start of January, and the start-of-mating weight of the heifers largely determines the resulting conception rates.

Figure 2 shows that the timing of the break in the season explains 97% of the variation in the average growth of weaner heifers until January.

These data can be used to make decisions about which heifers will be suitable for yearling mating. Once the date of the break in the season is known, Figure 2 can be used to estimate (with 97% accuracy) the average growth of heifers from weaning to the start of mating on the first of January. This can be used to identify the weaning weight of heifers which are likely to achieve good fertility when mated as yearlings. For example the average date (over 28 years) of the break in the season in the Douglas Daly region is the 2nd of November (60 days before the 1st of Jan). From Figure 2 this would result in about 65 kg of growth by January (at a stocking rate of 1.5 head/ha). Since a joining weight of around 270kg is required for maiden heifers to get conception rates in the order of 80% (Doogan et al. 1991), then a rough guide would be that good conception rates could be expected from the yearling mating of heifers weighing greater than 200kg at weaning.


Email: Tim.Schatz@nt.gov.au

This paper was presented at the Australian Society of Animal Production conference in July and is published in the conference proceedings.
BOOK MARKS NEW LEVEL OF MANAGEMENT INFORMATION FOR NORTH AUSTRALIAN RANGELANDS

In a first for north Australia, a comprehensive and integrated guide to managing for healthy rangelands in a tropical Australian river catchment has just been released.

At more than 240 pages, Healthy Rangelands: Principles for Sustainable Systems, Focus on Australia’s Burdekin Rangelands, brings together an extensive array of information on land use, management and biophysical systems in the Burdekin catchment of north Queensland.

The book combines scientific information from a variety of sources, including the Tropical Savannas CRC, Department of Primary Industries and Fisheries and Environmental Protection Agency in Queensland, CSIRO and James Cook University.

Co-editor Marnie McCullough, a DPI&F extension officer, said the book was an attempt to bring together a host of scientific research and present it as useful recommendations to researchers, students, local government, land managers and natural resource management groups.

“Information is presented in a way that links sophisticated scientific insight with practical management approaches, focusing on the special features and challenges of the Burdekin catchment.”

CEO of the Tropical Savannas CRC, Prof. Gordon Duff, said the book will make a valuable contribution to a shared vision for healthy savannas. “It will contribute to the leading role of the Burdekin catchment in mapping out a sustainable future for Australia’s savanna regions,” he said.

Healthy Rangelands: Principles for Sustainable Systems, Focus on Australia’s Burdekin Rangelands will be launched at the Australian Rangelands Conference in Alice Springs on July 5.

It is available to purchase for $49.95 from the DPI&F Book Shop, by phoning 13 25 23 (toll-free) or on-line at www.dpi.qld.gov.au/shop

Further information contact:
Marnie McCullough Peter Jacklyn
DPI&F Extension Officer Tropical Savannas CRC
Ph: 07 4722 2519 Ph: 0439 820 104

NORTH AUSTRALIA BEEF RESEARCH COUNCIL

CHAIRMAN

The North Australia Beef Research Council is seeking to appoint a visionary Chairman to take on a challenging and influential R, D & E leadership role working with a wide cross-section of participants in the North Australian and National beef industry.

The job involves the development and fostering of effective networks between R, D & E funders and providers, the beef industry and other key stakeholders. In particular, the Chairman has responsibility for coordinating input and activities of the ten regional beef research committees which span northern Australia. The Chairman is also closely linked to Meat and Livestock Australia’s Northern Beef Program and is automatically a member of the Northern Beef Program Industry Committee.

The position offers the opportunity to influence and guide the future direction of R & D for the Northern beef industry. The role requires considerable vision, flair and commitment and provides exciting challenges to a highly motivated communicator and leader.

The position is part-time (approximately 80 days per year). A more detailed job description, selection criteria and remuneration details can be obtained from Janine Palmer at justkall@austarnet.com.au or telephone 07 5547 0774.

Applications close on Friday 22 October 2004.
**WYNN CASSIA – FRIEND OR FOE**

Wynn Cassia (*Chamaecrista rotundifolia*), also called round leaf cassia, is a tropical legume native to South America. It was collected in Brazil in 1964 and released in Queensland in 1983. Wynn is a vigorous, short-lived legume. It is a prolific seeder and grows on a wide range of soils, but prefers sandy red earths such as Blain and Ooloo soil types. Wynn has been a popular species in improved pasture programs in the Katherine-Daly region for many years.

While Wynn has been sown over many thousands of hectares in the past fifteen years it has been the subject of debate for most of this time. Wynn Cassia has many of the attributes of an ideal legume pasture. It is easy to establish, seeds, spreads and grows well, it competes well with weeds and unlike many of the other legume species, Wynn Cassia tolerates heavy grazing and is persistent. “Too good to be true!” one may say. In fact many producers have questioned the value of Wynn Cassia especially in situations where grasses have disappeared and Wynn Cassia has become the dominant species. Some producers also observed cattle avoiding Wynn Cassia and failing to thrive despite ample feed (Wynn Cassia) on offer.

As a result, the Douglas Daly Producer Group conducted a three-year Producer Initiated Research and Development (PIRD) project to try and answer some of these questions. The PIRD was jointly funded by Meat and Livestock Australia (MLA), the producers of the Douglas Daly and the Department of Business Industry and Resource Development (DBIRD). A series of trials and demonstrations were conducted on-farm and at Douglas Daly Research Farm (DDRF) to evaluate Wynn Cassia as a pasture and a fodder. Grazing, fertiliser, fodder analysis, production, processing and feeding trials were conducted.

**Do Cattle Perform on Wynn Cassia Dominant Pastures:**

Two grazing trials were conducted, one at DDRF and one large commercial trial on Midway Station. At DDRF, Wynn Cassia was compared to a range of other pasture species and pasture combinations in a small block grazing trial. Five steers were grazed on a four-hectare sward of Wynn Cassia and weighed monthly for two years. The weigh gain was recorded and compared to the performance of other pastures grazed at the same stocking rate. Wynn Cassia produced the lowest liveweight gain of all the other pastures evaluated at DDRF in both 2003 and 2004. From July 02 to June 03 the steers on the Wynn Cassia put on an average of 120 kg/head. Stock grazing the other pastures put on between 150 and 200 kg/head. While stock at DDRF put on up to 1.0 kg/head /day on Wynn Cassia for a short period in the wet season, weight gain dropped off sharply with plant maturity.

On Midway Station 245 mixed sex weaners were grazed on a pure sward of Wynn Cassia at a stocking rate of 1 beast/hectare. The cattle were introduced to the paddock on January 3rd 2003 and weighed monthly until June 16th 2003. While the animals did put on weight (ie an average of 0.73kg/head/day in March and April) they only averaged 0.39 kg/head/day for the whole trial period of 160 days. The average weight gain over the five and a half month period was 62.6 kg/head. In May and June, animals were losing about 0.13 kg/head/day. While the cattle had grown, the majority had an empty, poor appearance at the end of the trial. The condition of the animals was not consistent with what one would expect from animals grazing a legume pasture all wet season.

While the trials did not measure the daily feed intake, it appears the relatively low palatability of Wynn Cassia prevents stock from consuming sufficient to maintain good levels of liveweight gain over extended periods. An interesting observation from this trial was that the lighter animals put on significantly more weight than the heavier animals. The performance of the stock on Wynn Cassia at both DDRF and Midway was low considering the amount and condition of the feed on offer throughout the grazing period.

**Response of Wynn Cassia to Fertiliser:**

Wynn Cassia grows on a range of soil types irrespective of fertility. However many producers wanted to know if fertiliser would improve the productivity and palatability of Wynn Cassia and how much should be applied. Demonstration plots on both Midway and Stray Creek Stations showed that Wynn Cassia responded strongly to 100 kg/ha of super-phosphate plus trace elements (copper, molybdenum and zinc). Fertiliser rates to 200 kg/ha did not produce an increase in yield over 100 kg/ha. Fertiliser produced between 50 and 80% more biomass than unfertilised Wynn Cassia. Yields of over 6 t/ha were achieved from fertilised Wynn Cassia on Midway. Stock also appeared to prefer fertilised over non-fertilised Wynn Cassia.

**How Does Wynn Cassia Rate as Fodder or Hay?**

As Wynn Cassia grows prolifically especially under good conditions, producers wanted to know if it was suitable as a fodder crop. Wynn Cassia hay was fed to cattle and horses. Hay was also processed into pellets and evaluated in feeding trials at Berrimah Agricultural Research Centre (BARC) in Darwin. In general the...
hay was not that well accepted by either horses or cattle. In some situations cattle and horses ate the hay and in other cases they rejected it outright. In a small survey of horse owners in Darwin, 50% of the respondents who gave their horses Wynn Cassia hay said their horses liked it and said they would buy it if available. The other half said their horses either rejected it or ate it reluctantly. At DDRF and Berrimah Farm, cattle and horses sought out the leaf, leaving the stalk and stems.

One producer stated that cattle rejected the hay when fed in round bales, but ate it when it was hammer-milled and fed in troughs.

In a feeding trial at Berrimah Farm, Wynn Cassia hay was compared to Cavalcade and Pangola hays and a commercial pellet. Stock fed the Wynn hay lost 40 kg on average during the 30 days of the trial, while stock gained 7 kg and 11 kg on Cavalcade and Pangola hay respectively. The low intake of Wynn Cassia was primarily responsible for the weight loss in animals in this trial.

However, when Wynn Cassia was processed into a pellet, cattle ate it readily and performed well on it. In one trial at Berrimah Farm cattle fed Wynn Cassia pellets put on an average of 0.88 kg/head/day over 34 days of feeding.

Nutritional Quality of Wynn Cassia:
Wynn Cassia is quite a nutritious plant while young. In January and February whole plants have an average crude protein of about 13 %, 8.0 Megajoules/kg of energy and 50 to 54% digestibility. However, as the plant matures the nutritional value of Wynn Cassia drops sharply. By May its protein, digestibility and energy levels were 5%, 43% and 5.9 Megajoules/kg respectively. This reduction in quality coincided with significant losses in animal performance during the PIRD trials.

Wynn Cassia was tested for condensed tannin concentrations. Tannins are anti-nutritional compounds found in certain plants, which reduce palatability and intake of dry-matter, or reduces the digestibility of the feed. Wynn Cassia was found to have low levels of condensed tannins, meaning the lack of palatability could not be attributed to tannin levels.

Summary
The PIRD project highlighted a lot of issues about Wynn Cassia and while it answered some questions it created others. The project revealed that while Wynn Cassia has relatively good nutritional quality while young, most stock do not accept it readily or perform well on it when it is the main source of feed in the paddock. When Wynn Cassia forms a pure sward it is unlikely to be a productive pasture due to its unpalatable nature and the loss in nutritional quality as it matures.

Wynn Cassia is suitable for processing into pellets and is well accepted by stock. However, Wynn Cassia hay seems to be accepted by only some animals and could be described as unpalatable compared to other available hays. Acceptance of Wynn Cassia hay will be determined by its quality, how hungry the stock are and what they are accustomed to eating.

When the Douglas Daly producers reviewed the project they described Wynn Cassia as….

“An easy to establish, highly persistent, dominating legume of low palatability and low grazing value in fertile soils [in the Douglas Daly]. It may have a role in soil conservation and may also have potential for hay and pellet production.”

As a result of this project a number of Douglas Daly producers said they would no longer plant Wynn Cassia but would implement management to prevent it from dominating the pasture. Management will include strategic use of selective herbicides to control Wynn Cassia growth at the start of the season, strategic grazing to allow grasses to establish and compete and over-sowing Wynn Cassia paddocks with vigorous competitive grasses such as Tully, Buffel and Arnhem.

Most producers agreed that while Wynn Cassia had a role to play in grazing systems, soil stabilisation and possibly nitrogen contribution, it was essential to prevent it from completely dominating the sward.

The key message from the project is to keep the grass component in pastures by using conservative stocking rates and spelling of paddocks early in the season to allow grasses to establish and prevent Wynn Cassia from becoming the dominant species.

A report is available which describes in more detail, the results of the trials and demonstrations conducted in this PIRD.

For a copy of the report or for more information contact Fergal O’Gara on 8999 2233 or Barry Lemcke on 8999 2263.

![Figure 2](image.jpg) Cattle on a pure-stand of Wynn Cassia at Midway, Jan 2003
AWARDS CALL WOMEN TERRITORY-WIDE IN RURAL SECTOR

The top-rating and award winning show McLeod’s Daughters may have put farming women on the world map, but it’s time for the ‘real’ winners - Territorian women in the rural sector – to show the rest of Australia how it’s done and hurry forward for their own Awards’ consideration.

Nominations are open – but close soon - for the 2005 Rural Womens’ Awards, which recognise women with a strong and positive vision for the future of their industry and its people.

The Minister for Primary Industries, Kon Vatskalis, urges all eligible women in the Northern Territory to enter the Awards before the nomination closing date on 15 October.

“There are many benefits for the recipients of these awards which include a degree of celebrity, recognition and significant prize money,” Minister Vatskalis said.

The 2005 Awards provide a bursary of $15,000 for each State and Territory winner and a Development Award of $5,000 for one runner up in each jurisdiction.

Minister Vatskalis said his government had been a long-term advocate of the Awards; the NT component supported through the Department of Business, Industry and Resource Development.

“The NT Award acknowledges the efforts of Territory women who have dedicated substantial time and resources to their industry and have a vision for its future,” he said.

“It’s a well-deserved pat on the back for the hard work and contribution in initiatives, new ideas and proposals.”

Last year’s winner, Berry Springs’ resident, Lee Berryman is a shining example of this. Lee and her husband own a mango and bamboo orchard at Berry Springs. She won the Award for her work with the orchard’s 2500 bamboo plantings, the largest in the Territory.

Lee undertook a project to research bamboo commercial projects in other areas of Australia to identify best practice in post-production and marketing the chain and to adapt these practices in the Territory.

For further details on the awards including guidelines on how to enter, contact Rowena Eastick at DBIRD on (08) 8999 2252 or on-line at www.ruralwomensaward.gov.au. The 2005 Rural Women’s Awards are sponsored by The Australian Women’s Weekly, ABC Radio, Rural Press Limited, DBIRD and the Northern Territory Government and the RIRDC.

EXTENSION UPDATE – DOUGLAS DALY REGION

Highlights for the year:

- Daly Region Community Reference Group (DRCRG). This was established in response to issues with agricultural development in the Katherine Daly region. A moratorium has been declared on landclearing and subdivision within the focus area, which largely comprises the Douglas Daly district. A report outlining recommendations for sustainable agricultural development is due to be presented to Government in October 2004.

- The executive committee of the Amateur Fisherman’s Association (AFANT) visited the district in June to visit producers and to discuss the issues raised by the Community Reference Group process. It was interesting to note the change in attitude from AFANT from the start to the end of the day and to see the appreciation from the local producers who were impressed by the effort of AFANT to meet with them.

- The annual “farm walk” around the Douglas Daly commercial farms was held in April 2004. It was very successful with over 40 people attending.

- Approximately 70 people attended a field day at DDRF in May 2004. Visitors were treated to a variety of guest speakers, tours of the research farm and presentations from the various project officers.

- “Kumbyechants”, “Ceres Downs” and “Midway” have all changed hands this year; Malcolm Bishop bought “Kumbyechants” and moved to the district in May, Chris Muldoon is managing “Midway” for the Underwood family and “Ceres Downs” recently sold to a Darwin businessman. Other new faces include Mike and Margot Black who are leasing the homestead area of “Garibaldi” to grow seedless watermelon.

- Heavy produce production (watermelon, rockmelon and pumpkin) is gaining momentum in the area. After Gavin Hopkins proved the potential of the area in 2003 two more growers have commenced production this year.

- After a break of about 16 months the Top End hay producers got together for a successful workshop at Katherine Rural College on August 20th. Around 25 producers and industry stakeholders attended indicating a strong commitment to the continuation of the group. Major issues discussed were weeds in hay, best practice management, alternative markets and production forecasting.

- DDRF has a new assistant manager, Sean Reed who starts work in early October. Sean comes from Biloela in Central Queensland, but has spent several years working on farming projects at Tipperary station, in the 1990’s.
For the calendar:

- A **farm walk** at Beatrice Hill Farm is being organised for around mid October to discuss and view ponded pasture research and demonstrations. A date is yet to be confirmed.

- Another **Hay Production Day** has been **scheduled for October 15th** at Katherine Rural College.

- An **auction of old and unused farm equipment and machinery will be held at Berrimah farm on Saturday 23rd October**. A range of equipment will be on offer – used tractors, implements, trailers, cattle crushes, and haymaking gear. BBQ and drinks will also be available.

  **For further information contact:**

  Phil Hausler  
  Senior Extension officer, DBIRD  
  Ph 89992301 (office)  
  0401 110356 (mobile)

**G.R.A.S. MACHINE**

*(Grubber Roller and Seeder)*

Reasonable stands of some legumes ie. Stylos can be achieved by simply casting the seed into ash left after burning without any actual soil disturbance. Grass seeds however require soil disturbance prior to seeding to achieve a level of establishment to make the operation worthwhile.

This soil disturbance usually involves a small to medium size tractor with a disc plough or chisel plough attached. Some pastoralists have large chopper-rollers that are used for knocking down and chopping up regrowth in already cleared areas. Some of these machines also have seed drums attached.

These chopper-rollers are large machines weighing in excess of three tonnes and require large tractors to move them. Most pastoralists I visit do not have this type of machinery but most own quad bikes and/or four-wheel drive utes. The GRAS machine was designed and built to be towed by a quad bike or a station ute. It will disturb the topsoil and sow pasture seed in the one operation. Ideally it will be utilised in sparsely timbered country where no prior clearing needs to take place. The machine is fairly light and should be used in virgin country where the soil hasn’t been compacted.

The mode of operation would be to spray 3m to 4m wide strips, using a quad bike or a station ute fitted with a boom spray unit, in a paddock you wish to improve. The grass and weeds you are spraying should be no higher than 40cm as too much mulch will prevent the GRAS machine from disturbing the top soil. Burning the paddock in the Dry Season will assist with reducing the mulch load. If we have good early rains you might have to spray Glyphosate on your strips twice prior to sowing.

Around mid to late December drag the GRAS machine out to the paddock, open it up in operational mode, load your seed in the seed drums and off you go. Of course prior to this you would have calibrated your seed drums so you would know how big the apertures in your drums should be to achieve the sowing rate per hectare you desire. The next shower of rain will wash the seed and some top-soil into the divots made by the teeth on the grubber-rollers. The divots will retain some moisture which will assist the seedlings in surviving the crucial first week after germination.

This machine is yet to be tested and depending on results, design configuration shown in photos could change.

**Ben Beumer**  
Extension Officer, Marrakai
WAYBILLS

Why are Waybills so important for the Northern Territory cattle industry?

The waybill forms the basis of the cattle tracing system (NLIS) operating in the NT. All other states are introducing some components of electronic individual animal identification in order to achieve a satisfactory capability in livestock tracing.

The NT has the most efficient and comprehensive cattle tracing system in Australia. This is why compulsory electronic individual identification is not being introduced in the NT. In order to maintain this position all cattle owners will need to continue to support the effective operation of the waybill system.

What is required of cattle owners?

1. Complete all sections of the Waybill in detail.
2. Include details of numbers of each category of stock (never describe the load as mixed steers, cows, heifers).
3. Include all brand details.
4. The owner must retain a copy of the waybill in the book (green copy).
5. The owner must send a copy (pink copy) to the Chief Inspector (Regional Stock Inspector) within 28 days.
6. The person receiving the stock (consignee) must retain the copy of the waybill.

What is the government doing to improve the waybill system?

1. Stock Inspectors will be contacting owners about incomplete waybills and failure to submit pink copies.
2. Waybill details are being stored on a waybill database which can be used to report on tracing histories in the event of an emergency disease.
3. The new Stock Bill will contain strengthened legislative requirements for waybill completion which will be applicable from July 2005. Persons committing offences under the waybill legislation will be subject to penalties.
RURAL EXTENSION FIELD DAY

A successful Rural Extension Field Day was held on Saturday 18th September on a private 5 acre block that was well maintained and managed. This block was voted as Landcare’s “Best Block” in 1995 and was a good example of what can be done. The blocked maintained 3 horses and was split into 4 paddocks – these paddocks were rotated while fertilising, watering and spraying were done.

The Field Day was coordinated and well put together by Leonie Williams from Department of Infrastructure, Planning and Environment (DIPE). The day was split into two sections – morning with approximately 45-50 people in attendance and afternoon with approximately 25-30 people attending. Many questions were asked and satisfactorily answered.

There was also a block walk to show everyone different ideas and problems encountered while caring for rural blocks.

There were various speakers through the day:

- Gerry Wood – Member for Nelson, who spoke on the new subdivisions.
- Ben Beumer and Eric Cox – DBIRD Extension Officers, who spoke on improved pastures, fertilising, fencing and weed control.
- Veronica Edgar (Roni) – DIPE Weeds Officer, who spoke on Gamba and Mission Grass control on small blocks.
- Liza Schenkel and Kevin Flockhart – Greening Australia, who spoke about native pastures and planting of native trees.
- Patrick Skewes who spoke about fire control.
- Dr Jamin Farebrother – Howard Springs Vet Clinic, who spoke on horse care and the saving of money in caring for horses.

Veronica Edgar, Ben Beumer and Eric Cox have 18 blocks to look at for pasture, weeds and fencing problems and have about 25 names for either Pangola or Tully runners. These runners are taken from Beatrice Hill Farm and given out to block owners from the rural area during the middle of January each year.

Eric Cox
Extension Officer