NSW DEPARTMENT OF **PRIMARY INDUSTRIES**

WHEAT: ASW/APW/AH

(Flood Irrigated - Landformed Contour Bay / Conv. Sown)

Irrigated Winter - 2009 **Murrumbidgee Valley**

1.GROSS MARGIN BUDGET:

INCOME:	**Standard Budget $/ha**	**Your Budget $/ha**
4.00 tonnes/ha @ $221 /t (on farm)	$884	
A. TOTAL INCOME $/ha:	**$884**	
VARIABLE COSTS:		
See following page for detail		
Cultivation	$62	
Sowing	$101	
Fertiliser	$233	
Herbicide	$28	
Fungicide	$24	
Contract harvesting	$68	
Levies	$9	
Crop insurance	$20	
Irrigation	$74	
B. TOTAL VARIABLE COSTS $/ha:	**$619**	
C. GROSS MARGIN (A-B) $/ha:	**$265**	
D. GROSS MARGIN $/ML*:	**$132**	

* Note. The method of calculation of gross margin per ML for the Murrumbidgee budgets varies because of the difficulty of identifying an alternative dryland alternative on specialist flood irrigated land. It is recommended where farmers can identify a dryland alternative that they subtract the gross margin of the dryland alternative from the gro margin of the irrigated crop and then divide by the number of ML. This will give a better indication of the contributio the irrigation water has made to increasing returns.

SENSITIVITY TABLES

2. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER HECTARE:

YIELD	**ON FARM PRICE ($/tonne)**				
tonnes/ha	$181 /t	$201 /t	**$221 /t**	$241 /t	$261 /t
2.50	-$149	-$101	-$52	-$4	$44
3.00	-$62	-$4	$54	$113	$171
3.50	$26	$94	$161	$229	$297
4.00	$110	$187	**$265**	$342	$419
4.50	$191	$279	$366	$453	$540
5.00	$273	$370	$466	$563	$660
5.50	$355	$461	$567	$674	$780

Gross Margin ($/ha)

3. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER ML:

YIELD	**ON FARM PRICE ($/tonne)**				
tonnes/ha	$181 /t	$201 /t	**$221 /t**	$241 /t	$261 /t
2.50	-$75	-$50	-$26	-$2	$22
3.00	-$31	-$2	$27	$56	$85
3.50	$13	$47	$81	$115	$148
4.00	$55	$94	**$132**	$171	$210
4.50	$96	$139	$183	$226	$270
5.00	$136	$185	$233	$282	$330
5.50	$177	$230	$284	$337	$390

Gross Margin ($/ML)

WHEAT: ASW/APW/AH (Flood Irrigated - Landformed Contour Bay / Conv. Sown)

Murrumbidgee Valley **Irrigated Winter - 2009**

CALENDAR OF OPERATIONS:		Machinery			Inputs			Total Cost
Operation	Month	hrs/ha	Cost $/hour	Total $/ha	Rate/ha	Cost $	Total $/ha	$/ha
Disc Plough	Dec/Jan	0.35	$42.85	$14.88				**$14.88**
Scarify	Feb	0.17	$45.05	$7.71				**$7.71**
Grade	Mar	0.17	$45.05	$7.71				**$7.71**
Bank up		0.26	$46.38	$12.08				**$12.08**
Scarify	Mar/Apr	0.17	$45.05	$7.71				**$7.71**
Sow	May	0.17	$62.38	$10.48	100kg/ha	$0.91/kg	$91.00	**$101.48**
Apply starter fertiliser ***eg. DAP***		with above			125kg/ha	$1.048/kg	$131.00	**$131.00**
*Seed Treatment eg: ***Triadimenol (Baytan®)***		with above			100kg/ha	$0.060/kg	$6.00	**$6.00**
Push ends		0.26	$46.38	$12.08				**$12.08**
Grass weed control ***eg. boom spray fenoxaprop-p-ethyl (Wildcat ®)***	Jun	contract		$10.00	0.35 L/ha	$51.27/L	$17.94	**$27.94**
Topdress nitrogen fertiliser ***eg. broadcast urea***	Jun/Jul	0.17	$62.38	$10.48	125kg/ha	$0.734/kg	$91.75	**$102.23**
* Spray Fungicide Stripe Rust ***eg. Triadimefon (Bayleton)***	Sept/Oct	contract		$10.00	1.00 L/ha	$8.00/L	$8.00	**$18.00**
Contract harvest	Dec	contract		$57.89				**$57.89**
Chaser Bin		0.22	$45.05	$9.91				**$9.91**
Irrigation*					2.0ML/ha	**$36.78**	$73.55	**$73.55**
Crop Levies					1.02% of on-farm value			**$8.97**
Crop Insurance					2.280% of on-farm value			**$20.16**

AGRONOMIC NOTES:

Use of a particular brand name does NOT imply a recommendation of that brand by NSW DPI.
Always read chemical labels and follow directions carefully, as it is your legal responsibility to do so.

Cropcheck	- Monitor and record crop performance. Key checks include establishment , weeds, insects, tiller numbers, disease and grain fill.
Rotation	- This is the first crop following a rice fallow.
Varieties	- See Winter Crop Variety Sowing Guide 2009 for approved varieties for southern NSW. *Varieties include: Carinya, Ellison, EGA Gregory, EGA_Wedgetail, Ventura and Chara. EGA_Wedgetail has a winter growth habit.*
Seed + Treatment	- If using own seed, treat with registered seed dressing. Germination test recommended. Stripe rust now affects these varieties so consider fungicide seed dressings such as Triadimenol (eg. Baytan®) or Fluquinconazole (eg. Jockey®) to prevent yield loss. With susceptible varieties in-furrow treatments (eg: Uptake® may also be an option) - Budgets are based on seed purchased at $910/tonne.
Protein & Payments	- Protein levels for first crop following rice can be low - around 8.5 - 9.5%. - Budget price is for APW 10% protein. Premiums/discounts are paid on a sliding scale for protein above and below 10%. AH grade (11.5% protein) attracts a higher price but is more difficult to achieve.
Sowing Time	- EGA_Wedgetail, EGA Gregory - Mid April, Chara (early May), Carinya and Ellison - Mid May till end of May, Ventura (after mid May). Sow at correct time. See 'Winter Crop Variety Sowing Guide 2009' for recommended sowing windows for each variety.
*** Disease Control**	Budget for a stripe rust seed dressing and at least 1 fungicide spray for stripe rust in the spring. (The total number of sprays depends upon seasonal conditions and varietal susceptibility)
Weed Control	- Herbicides are boomsprayed in a dry year and aerial sprayed in a wet year. - An additional broadleaf herbicide may be required if vetch, wireweed, thistles and toadrush are a problem. - Refer to "Weed Control in Winter Crops 2009" for alternative herbicides.
Irrigation	- Schedule spring irrigations according to plant water use. - Budget allows for two spring waterings. **-*The budget uses MIA total water costs based on 50% allocation.** **- Irrigation cost includes the variable cost and fixed water costs of $19.18/ML.** **- Water costs used in the MIA budgets are based on 2008-09 prices.** **- For prices in other areas, refer to the water prices section.**
Machinery	- Machinery costs include variable costs only for the tractor, implements and header. - Contract harvesting does not include the cost of fuel.
Labour	- The labour required for machinery operations is 2.42 hr/ha. - Using a labour cost of $14 /hr, an additional $34 /ha can be deducted from the budget.
Economic note:	- These gross margins are only a guide. They do not include overhead costs or GST. - Input and crop prices are correct at the time of writing (March 2009). Market uncertainity makes estimation of future pricing impractical. **- Use your own figures and price assumptions to determine your own gross margin.**

NSW DEPARTMENT OF **PRIMARY INDUSTRIES**

WHEAT: Biscuit (Furrow Irrigated - Beds)

Irrigated Winter - 2009 **Murrumbidgee Valley**

1.GROSS MARGIN BUDGET:

INCOME:	**Standard Budget $/ha**	**Your Budget $/ha**
6.00 tonnes/ha @ $300.0 /t (on farm)	$1,800	
A. TOTAL INCOME $/ha:	**$1,800**	
VARIABLE COSTS:		
See following page for detail		
Cultivation	$12	
Sowing	$101	
Fertiliser	$303	
Herbicide	$77	
Fungicide	$24	
Contract harvesting	$92	
Levies	$18	
Crop insurance	$41	
Irrigation	$129	
B. TOTAL VARIABLE COSTS $/ha:	**$798**	
C. GROSS MARGIN (A-B) $/ha:	**$1,002**	
D. GROSS MARGIN $/ML*:	**$286**	

* Note. The method of calculation of gross margin per ML for the Murrumbidgee budgets varies because of the difficulty of identifying an alternative dryland alternative on specialist flood irrigated land. It is recommended where farmers can identify a dryland alternative that they subtract the gross margin of the dryland alternative from the gro margin of the irrigated crop and then divide by the number of ML. This will give a better indication of the contributio the irrigation water has made to increasing returns.

SENSITIVITY TABLES

2. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER HECTARE:

YIELD	**ON FARM PRICE ($/tonne)**				
tonnes/ha	$260 /t	$280 /t	**$300 /t**	$320 /t	$340 /t
4.50	$411	$498	$585	$672	$759
5.00	$530	$627	$724	$820	$917
5.50	$650	$756	$863	$969	$1075
6.00	$770	$886	**$1002**	$1118	$1234
6.50	$889	$1015	$1141	$1267	$1392
7.00	$1009	$1144	$1280	$1415	$1551
7.50	$1129	$1274	$1419	$1564	$1709

← Gross Margin ($/ha)

3. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER ML:

YIELD	**ON FARM PRICE ($/tonne)**				
tonnes/ha	$260 /t	$280 /t	**$300 /t**	$320 /t	$340 /t
4.50	$117	$142	$167	$192	$217
5.00	$151	$179	$207	$234	$262
5.50	$186	$216	$246	$277	$307
6.00	$220	$253	**$286**	$319	$353
6.50	$254	$290	$326	$362	$398
7.00	$288	$327	$366	$404	$443
7.50	$323	$364	$405	$447	$488

← Gross Margin ($/ML)

WHEAT: Biscuit (Furrow Irrigated - Beds)

Murrumbidgee Valley **Irrigated Winter - 2009**

CALENDAR OF OPERATIONS:		Machinery			Inputs			**Total**
			Cost	Total		Cost	Total	**Cost**
Operation	Month	hrs/ha	$/hour	$/ha	Rate/ha	$	$/ha	**$/ha**
Burn Stubble	Apr/May							
Broadleaf & grass weed control								
(eg. boom spray glyphosate 450)	May	contract		$10.00	1.00 L/ha	$8.15/L	$8.15	**$18.15**
Sow	May	0.17	$62.38	$10.48	100kg/ha	$0.91/kg	$91.00	**$101.48**
Apply starter fertiliser ***(eg. DAP)***		with above			150kg/ha	$1.048/kg	$157.20	**$157.20**
Seed Treatment eg: Triadimenol (Baytan®)		with above			100kg/ha	$0.060/kg	$6.00	**$6.00**
Clean furrows		0.26	$46.38	$12.08				**$12.08**
Grass weed control ***eg. Boom spray fenoxaprop-p-ethyl (wildcat®)***	Jun	contract		$10.00	0.35 L/ha	$51.27/L	$17.94	**$27.94**
Broadleaf weed control								
(eg.boom spray MCPA + dicamba)	Jun/Jul	contract		$10.00	1.70 L/ha	$12.52/L	$21.28	**$31.28**
Topdress nitrogen fertiliser								
(broadcast urea)	Jun/Jul	0.17	$62.38	$10.48	185kg/ha	$0.734/kg	$135.79	**$146.27**
* Spray Fungicide Stripe Rust eg. Triadimefon (Bayleton 125EC)	Sept/Oct	contract		$10.00	1.00 L/ha	$8.00/L	$8.00	**$18.00**
Contract harvest	Dec	contract		$81.90				**$81.90**
Chaser Bin		0.22	$45.05	$9.91				**$9.91**
Irrigation*					3.5ML/ha	$36.78/ML	$128.71	**$128.71**
Crop Levies					1.02% of on-farm value			**$18.27**
Crop Insurance					2.280% of on-farm value			**$41.04**

AGRONOMIC NOTES:

Use of a particular brand name does NOT imply a recommendation of that brand by NSW DPI.
Always read chemical labels and follow directions carefully, as it is your legal responsibility to do so.

Cropcheck	- Monitor and record crop performance. Key checks include establishment , weeds, insects, tiller numbers, disease and grain fill.
Rotation	- Sod seeded into burnt maize or soybean stubble. Costs will be higher where beds are constructed for this crop.
Varieties	- See "Winter Crop Variety Sowing Guide 2008" for approved varieties in SNSW. - Snipe,Thornbill, Yenda, Barham, QAL 3362 and QAL 2000. Snipe and Thornbill have winter growth habits. Contact end user for preferred variety.
Seed	- If using own seed treat with registered seed dressing. Germination test is recommended. If sowing stripe rust susceptible varieties, consider fungicide seed dressings such as Triadimenol (eg Baytan®) or Fluquinconazole (eg Jockey®). With susceptible varieties in-furrow treatments (such as Intake®) may also be an option. - Budgets are based on seed purchased at $910/tonne.
Protein	- Aim for a protein content of 8.0 to 9.5% to optimise returns.
Sowing Time	- Thornbill and Yenda (from early April). Snipe (from mid-April). Bowie (from early May). - *See "Winter Crop Variety Sowing Guide 2009" for recommended sowing windows* for each variety.
***Disease Control**	- Budget for a stripe rust seed dressing and at least 1 fungicide spray for stripe rust in spring. (The total number of sprays depends upon seasonal conditions and varietal susceptibility)
Weed Control	- Herbicides are boomsprayed in a dry year and aerial sprayed in a wet year. - Post-emergent herbicides may not be required on crops following maize. - Refer to "Weed Control in Winter Crops 2009" for alternative herbicides.
Irrigation	- Schedule spring irrigations according to plant water use. Budget allows for three spring waterings. Irrigation requirements will depend on seasonal conditions. **-*The budget uses MIA total water costs based on 50% allocation.** **- Irrigation cost includes the variable cost and fixed water costs of $19.18/ML** **- Water costs used in the MIA budgets are based on 2008-09 prices.** **- For prices in other areas and districts, refer to the water prices section.**
Machinery	- Machinery costs include variable costs only for the tractor, implements and header. - Contract harvesting does not include the cost of fuel.
Bed Cropping	- Bed cropping may require additional capital investment in equipment from $2,000 to $20,000.
Labour	- The labour required for machinery operations is 1.02 hr/ha. - Using a labour cost of $14/hr, an additional $14/ha can be deducted from the budget.
Economic note:	- These gross margins are only a guide. They do not include overhead costs or GST. - Input and crop prices are correct at the time of writing (March 2009). Market uncertainity makes estimation of future pricing impractical. **- Use your own figures and price assumptions to determine your own gross margin.**

NSW DEPARTMENT OF **PRIMARY INDUSTRIES**

WHEAT: Biscuit (Flood Irrigated Landformed Contour Bay / Sod Sown)

Irrigated Winter - 2009 **Murrumbidgee Valley**

1.GROSS MARGIN BUDGET:

	Standard Budget $/ha	Your Budget $/ha
INCOME:		
3.50 tonnes/ha @ $300 /t (on farm)	$1,050	
A. TOTAL INCOME $/ha:	**$1,050**	
VARIABLE COSTS:		
See following page for detail		
Cultivation	$12	
Sowing	$120	
Fertiliser	$215	
Herbicide	$28	
Fungicide	$25	
Contract harvesting	$64	
Levies	$11	
Crop insurance	$24	
Irrigation	$44	
B. TOTAL VARIABLE COSTS $/ha:	**$543**	
C. GROSS MARGIN (A-B) $/ha:	**$507**	
D. GROSS MARGIN $/ML*:	**$423**	

* Note. The method of calculation of gross margin per ML for the Murrumbidgee budgets varies because of the difficulty of identifying an alternative dryland alternative on specialist flood irrigated land. It is recommended where farmers can identify a dryland alternative that they subtract the gross margin of the dryland alternative from the gross margin of the irrigated crop and then divide by the number of ML. This will give a better indication of the contribution the irrigation water has made to increasing returns.

SENSITIVITY TABLES

2. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER HECTARE:

YIELD	ON FARM PRICE ($/tonne)				
tonnes/ha	$260 /t	$280 /t	**$300 /t**	$320 /t	$340 /t
2.00	-$5	$33	$72	$111	$149
2.50	$120	$169	$217	$265	$314
3.00	$246	$304	$362	$420	$478
3.50	$372	$440	**$507**	$575	$643
4.00	$494	$571	$649	$726	$803
4.50	$614	$701	$788	$875	$962
5.00	$733	$830	$927	$1024	$1120

← Gross Margin ($/ha)

3. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER ML:

YIELD	ON FARM PRICE ($/tonne)				
tonnes/ha	$260 /t	$280 /t	**$300 /t**	$320 /t	$340 /t
2.00	-$4	$28	$60	$92	$124
2.50	$100	$141	$181	$221	$261
3.00	$205	$253	$302	$350	$398
3.50	$310	$366	**$423**	$479	$535
4.00	$412	$476	$541	$605	$670
4.50	$511	$584	$656	$729	$802
5.00	$611	$692	$772	$853	$934

← Gross Margin ($/ML)

WHEAT: Biscuit (Flood Irrigated Landformed Contour Bay / Sod Sown)

Murrumbidgee Valley **Irrigated Winter - 2009**

CALENDAR OF OPERATIONS:		Machinery			Inputs			**Total**
			Cost	Total		Cost	Total	**Cost**
Operation	Month	hrs/ha	$/hour	$/ha	Rate/ha	$	$/ha	**$/ha**
Burn Stubble	Apr/May							**$0.00**
Sow	May	0.17	$62.38	$10.48	120kg/ha	$0.91/kg	$109.20	**$119.68**
Apply starter fertiliser (***eg: DAP)***		with above			125kg/ha	$1.048/kg	$131.00	**$131.00**
Seed Treatment eg. ***Triadimenol (Baytan®)***		with above			120kg/ha	$0.060/kg	$7.20	**$7.20**
Push ends		0.26	$46.38	$12.08				**$12.08**
Grass weed spray ***eg: fenoxaprop-p-ethyl (Wildcat ®)***	Jun	contract		$10.00	0.35 L/ha	$51.27/L	$17.94	**$27.94**
Topdress nitrogen fertiliser ***(broadcast urea)***	Jun/Jul	0.17	$62.38	$10.48	100kg/ha	$0.734/kg	$73.40	**$83.88**
* Spray Fungicide Stripe Rust eg. ***Triadimefon (Bayleton® 125EC)***	Sept/Oct	contract		$10.00	1.00 L/ha	$8.00/kg	$8.00	**$18.00**
Contract harvest	Dec	contract		$54.36				**$54.36**
Chaser Bin		0.22	$45.05	$9.91				**$9.91**
Irrigation*					1.2ML/ha	$36.78/ML	$44.13	**$44.13**
Crop Levies					1.02% of on-farm value			**$10.66**
Crop Insurance					2.280% of on-farm value			**$23.94**

AGRONOMIC NOTES:

Use of a particular brand name does NOT imply a recommendation of that brand by NSW DPI.
Always read chemical labels and follow directions carefully, as it is your legal responsibility to do so.

Cropcheck	- Monitor and record crop performance. Key checks include establishment, weeds, insects, tiller numbers, disease and grain fill.
Rotation	- Sod seeding into burnt rice stubble. Nominated yield is low because of water logging risk.
Varieties	- See *"Winder Crop Variety Sowing Guide 2009"* for approved varieites in SNSW . QAL2000, Bowie, Snipe, Thornbill, Yenda, Barham and QAL 3362. Snipe and Thornbill have winter growth habits. Contact end user for preferred variety.
Seed + Treatment	- If using own seed treat with registered seed dressing. Qal 2000 is rated 8 for stripe rust but 1 for YR17 strain. Germination test recommended. Stripe rust now affects the above biscuit varieties.If sowing stripe rust susceptible varieties, consider fungicide seed dressings such as Triadimenol (eg Baytan®) or Fluquinconazole (eg Jockey®) to prevent yield losses. With susceptible varieties in-furrow treatments (such as Intake®) may also be an option. - Budgets are based on seed purchased at $910/tonne.
Protein	- Aim for a protein content of 8.0 to 9.5% to optimise returns.
Sowing Time and rate	- Thornbill and Yenda for grain only (from early April), Snipe for grain only (from mid-April), Bowie and Barham (May), and Qal2000 (2nd week of May till end of May). See *"Winter Crop Variety Sowing Guide 2009"* for recommended sowing times for each variety. Higher seed rate required due to risk of poor establishment and reduced tillering.
Disease Control	Budget for a stripe rust seed dressing and at least 1 fungicide spray for stripe rust in the spring. (The total number of sprays depends upon seasonal conditions and varietal susceptibility)
Weed Control	- Herbicides are boomsprayed in a dry year and aerial sprayed in a wet year. - An additional broadleaf herbicide may be required if vetch, wireweed, thistles and toadrush are a problem. - Refer to "Weed Control in Winter Crops 2009" for alternative herbicides.
Irrigation	- If the layout has suitable drainage and a a spring irrigation is required, apply as close to head emergence as possible. *Budget allows for one spring watering (irrigation requirements will depend on seasonal conditions). **-*The budget uses MIA total water costs based on 50% allocation.** **- Irrigation cost includes the variable cost and fixed water costs of $19.18/ML.** **- Water costs used in the MIA budgets are based on 2008-09 prices.** **- For prices in other areas and districts, refer to the water prices section.**
Machinery	- Machinery costs include variable costs only for the tractor, implements and header. - Contract harvesting does not include the cost of fuel.
Labour	- The labour required for machinery operations is 1.02 hr/ha. - Using a labour cost of $14/hr, an additional $14/ha can be deducted from the budget.
Economic note:	- These gross margins are only a guide. They do not include overhead costs or GST. - Input and crop prices are correct at the time of writing (March 2009). Market uncertainity makes estimation of future pricing impractical. **- Use your own figures and price assumptions to determine your own gross margin.**

NSW DEPARTMENT OF **PRIMARY INDUSTRIES**

WHEAT: Biscuit (Flood Irrigated - Border Check / Conv. Sown)

Irrigated Winter - 2009 **Murrumbidgee Valley**

1.GROSS MARGIN BUDGET:

INCOME:	Standard Budget $/ha	Your Budget $/ha
5.50 tonnes/ha @ $300 /t (on farm)	$1,650	
A. TOTAL INCOME $/ha:	**$1,650**	
VARIABLE COSTS:		
See following page for detail		
Cultivation	$73	
Sowing	$101	
Fertiliser	$278	
Fungicide	$24	
Contract harvesting	$86	
Levies	$17	
Crop insurance	$38	
Irrigation	$129	
B. TOTAL VARIABLE COSTS $/ha:	**$745**	
C. GROSS MARGIN (A-B) $/ha:	**$905**	
D. GROSS MARGIN $/ML*:	**$259**	

* Note. The method of calculation of gross margin per ML for the Murrumbidgee budgets varies because of the difficulty of identifying an alternative dryland alternative on specialist flood irrigated land. It is recommended where farmers can identify a dryland alternative that they subtract the gross margin of the dryland alternative from the gro margin of the irrigated crop and then divide by the number of ML. This will give a better indication of the contributio the irrigation water has made to increasing returns.

SENSITIVITY TABLES

2. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER HECTARE:

YIELD	ON FARM PRICE ($/tonne)				
tonnes/ha	$260 /t	$280 /t	**$300 /t**	$320 /t	$340 /t
4.00	$333	$410	$488	$565	$642
4.50	$453	$540	$627	$714	$801
5.00	$572	$669	$766	$862	$959
5.50	$692	$798	**$905**	$1011	$1118
6.00	$812	$928	$1044	$1160	$1276
6.50	$931	$1057	$1183	$1309	$1434
7.00	$1051	$1187	$1322	$1457	$1593

← Gross Margin ($/ha)

3. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER ML:

YIELD	ON FARM PRICE ($/tonne)				
tonnes/ha	$260 /t	$280 /t	**$300 /t**	$320 /t	$340 /t
4.00	$95	$117	$139	$161	$184
4.50	$129	$154	$179	$204	$229
5.00	$164	$191	$219	$246	$274
5.50	$198	$228	**$259**	$289	$319
6.00	$232	$265	$298	$331	$365
6.50	$266	$302	$338	$374	$410
7.00	$300	$339	$378	$416	$455

← Gross Margin ($/ML)

WHEAT: Biscuit (Flood Irrigated - Border Check / Conv. Sown)

Murrumbidgee Valley **Irrigated Winter - 2009**

CALENDAR OF OPERATIONS:		Machinery			Inputs			Total Cost
			Cost	Total		Cost	Total	
Operation	Month	hrs/ha	$/hour	$/ha	Rate/ha	$	$/ha	$/ha
Rip Banks	Nov/Dec	0.22	$48.80	$10.89				**$10.89**
Disc Plough	Dec/Jan	0.35	$42.85	$14.88				**$14.88**
Scarify	Feb	0.17	$45.05	$7.71				**$7.71**
Landplane	Mar	0.17	$45.05	$7.71				**$7.71**
Bank up	Mar	0.26	$46.38	$12.08				**$12.08**
Scarify	Mar/Apr	0.17	$45.05	$7.71				**$7.71**
Sow	May	0.17	$62.38	$10.48	100kg/ha	$0.91/kg	$91.00	**$101.48**
Apply starter fertiliser (***eg. DAP)***		with above			150kg/ha	$1.048/kg	$157.20	**$157.20**
Seed treatment ***eg Triadimenol (Baytan®)***		with above			100kg/ha	$0.060/kg	$6.00	**$6.00**
Tail Drains		0.26	$46.38	$12.08				**$12.08**
Grass weed spray ***eg: fenoxaprop-p-ethyl (Wildcat ®)***	Jun	contract		$10.00	0.35 L/ha	$51.27/L	$17.94	**$27.94**
Topdress nitrogen fertiliser ***(eg. broadcast urea)***	Jul	0.17	$62.38	$10.48	150kg/ha	$0.734/kg	$110.10	**$120.58**
* Spray Fungicide Stripe Rust **eg. Triadimefon (Bayleton®)**	Sept/Oct	contract		$10.00	1.00 L/ha	$8.00/kg	$8.00	**$18.00**
Contract harvest	Dec	contract		$75.89				**$75.89**
Chaser Bin		0.22	$45.05	$9.91				**$9.91**
Irrigation*					3.5ML/ha	$36.78/ML	$128.71	**$128.71**
Crop Levies					1.02% of on-farm value			**$16.75**
Crop Insurance					2.280% of on-farm value			**$37.62**

AGRONOMIC NOTES:

Use of a particular brand name does NOT imply a recommendation of that brand by NSW DPI.
Always read chemical labels and follow directions carefully, as it is your legal responsibility to do so.

Cropcheck	Monitor and record crop performance. Key checks include establishment, weeds, insects, tiller numbers, disease and grain fill.
Rotation	- This is the first crop following a rice fallow. Therefore, the budget shows higher land preparation costs.
Varieties	See *"Winter Crop Variety Sowing Guide 2009"* for approved varieties in SNSW - Qal2000, Bowie, Snipe,Thornbill, Yenda, Bahram and QAL 3362.Snipe and Thornbill have - a winter growth habit. Contact end user for preferred variety.
Seed + treatment	- If using own seed treat with a registered seed dressing. Germination test recommended. Stripe rust now affects the above biscuit varieties. Qal2000 is rated 8 for stripe rust but 1 for Y 17 strain. If sowing stripe rust susceptible varieties, consider fungicide seed dressings such as Triadimenol (eg Baytan®) or Fluquinconazole (eg Jockey®) to prevent yield losses. - With susceptible varieties in-furrow treatments (such as Intake®) may also be an option. - Budgets are based on seed purchased at $970/tonne.
Protein	- Aim for a protein content of 8.0 to 9.5% to optimise returns.
Sowing Time	- Thornbill and Yenda for grain only(from early April), Snipe for grain only (from mid-April). and Qal2000 sowing time is 2nd week of May till end of May. See *Winter Crop Variety Sowing Guide 2009* for recommended sowing times for each variety.
Disease Control	Budget for a stripe rust seed dressing & at least 1 fungicide spray for stripe rust in the spring. (the total number of sprays depends upon seasonal conditions and varietal susceptibility)
Weed Control	- Herbicides are boomsprayed in a dry year and aerial sprayed in a wet year. - An additional broadleaf herbicide may be required if vetch, wireweed, thistles and toadrush are a problem. Refer to "Weed Control in Winter Crops 2009" for alternative herbicides.
Irrigation	- Schedule spring irrigations according to plant water use. - Budget allows for a pre-irrigation (1.5ML) and two spring waterings (1ML each). Spring irrigations will depend on seasonal conditions. - Growers can reduce the effect of waterlogging problems by only pre-irrigating a proportion of intended winter crop area. **-*The budget uses MIA total water costs based on 50% allocation.** **- Irrigation cost includes the variable cost and fixed water costs of $19.18/ML** **- Water costs used in the MIA budgets are based on 2008-09 prices.** **- For prices in other areas and districts, refer to the water prices section.**
Machinery	- Machinery costs include variable costs only for the tractor, implements and header - Contract harvesting does not include the cost of fuel.
Labour	- The labour required for machinery operations is 2.70 hr/ha. - Using a labour cost of $14/hr, an additional $38/ha can be deducted from the budget.
Economic note:	- These gross margins are only a guide. They do not include overhead costs or GST. - Input and crop prices are correct at the time of writing (March 2009). Market uncertainity makes estimation of future pricing impractical. **- Use your own figures and price assumptions to determine your own gross margin.**

NSW DEPARTMENT OF **PRIMARY INDUSTRIES**

BARLEY: FEED/MALTING (Flood Irrigated - Border Check/Conv. Sown)

Irrigated Winter - 2009 **Murrumbidgee Valley**

1.GROSS MARGIN BUDGET:

INCOME:			**Standard Budget $/ha**	**Your Budget $/ha**
4.50 tonnes/ha @	$170 /t (on farm, feed price)		$765	
A. TOTAL INCOME $/ha:			**$765**	
VARIABLE COSTS:				
See following page for detail				
Cultivation			$65	
Sowing			$91	
Fertiliser			$252	
Herbicide			$42	
Contract harvesting			$74	
Levies			$15	
Crop insurance			$17	
Irrigation			$92	
B. TOTAL VARIABLE COSTS $/ha:			**$648**	
C. GROSS MARGIN (A-B) $/ha:			**$117**	
D. GROSS MARGIN $/ML*:			**$47**	

* Note. The method of calculation of gross margin per ML for the Murrumbidgee budgets varies because of the difficulty of identifying an alternative dryland alternative on specialist flood irrigated land. It is recommended where farmers can identify a dryland alternative that they subtract the gross margin of the dryland alternative from the gross margin of the irrigated crop and then divide by the number of ML. This will give a better indication of the contribution the irrigation water has made to increasing returns.

SENSITIVITY TABLES

2. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER HECTARE:

YIELD	**ON FARM PRICE ($/tonne)**					
tonnes/ha	$130 /t	$150 /t	**$170 /t**	$190 /t	$210 /t	
3.00	-$234	-$176	-$118	-$60	-$2	
3.50	-$172	-$104	-$36	$31	$99	
4.00	-$113	-$36	$42	$119	$196	Gross
4.50	-$57	$30	**$117**	$204	$291	← Margin
5.00	-$1	$96	$193	$289	$386	($/ha)
5.50	$55	$162	$268	$374	$481	
6.00	$111	$227	$343	$459	$576	

3. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER ML:

YIELD	**ON FARM PRICE ($/tonne)**					
tonnes/ha	$130 /t	$150 /t	**$170 /t**	$190 /t	$210 /t	
3.00	-$94	-$70	-$47	-$24	-$1	
3.50	-$69	-$42	-$15	$13	$40	
4.00	-$45	-$14	$17	$48	$79	Gross
4.50	-$23	$12	**$47**	$82	$116	← Margin
5.00	$0	$38	$77	$116	$154	($/ML)
5.50	$22	$65	$107	$150	$192	
6.00	$45	$91	$137	$184	$230	

BARLEY: FEED/MALTING (Flood Irrigated - Border Check/Conv. Sown)

Murrumbidgee Valley **Irrigated Winter - 2009**

CALENDAR OF OPERATIONS:		Machinery			Inputs			Total Cost
			Cost	Total		Cost	Total	
Operation	Month	hrs/ha	$/hour	$/ha	Rate/ha	$	$/ha	**$/ha**
Rip Banks	Nov/Dec	0.22	$48.80	$10.89				**$10.89**
Disc Plough	Dec/Jan	0.35	$42.85	$14.88				**$14.88**
Landplane	Mar	0.17	$45.05	$7.71				**$7.71**
Bank up		0.26	$46.38	$12.08				**$12.08**
Scarify	Apr/May	0.17	$45.05	$7.71				**$7.71**
Sow	Apr/May	0.17	$62.38	$10.48	90kg/ha	$0.90/kg	$81.00	**$91.48**
Apply starter fertiliser ***eg. DAP***		with above			125kg/ha	$1.048/kg	$131.00	**$131.00**
Seed Dressing (eg: Baytan®)		with above			0.125kg/ha	$36.50/kg	$4.56	**$4.56**
Trail drains		0.26	$46.38	$12.08				**$12.08**
Grass weed control ***eg. tralkoxydim,(Achieve ®)***	Jun	contract		$10.00	0.4kg/ha	$68.04/kg	$27.22	**$37.22**
Topdress nitrogen fertiliser ***eg. broadcast urea***	Jun/Jul	0.17	$62.38	$10.48	150kg/ha	$0.734/kg	$110.10	**$120.58**
Contract harvest	Nov	contract		$63.89				**$63.89**
Chaser Bin		0.22	$45.05	$9.91				**$9.91**
Irrigation*					2.5ML/ha	$36.78/ML	$91.94	**$91.94**
Crop Levies			$1.50 /t	+	1.02% of on-farm value			**$14.51**
Crop Insurance					2.280% of on-farm value			**$17.44**

AGRONOMIC NOTES:

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Always read chemical labels and follow directions carefully, as it is your legal responsibility to do so.

Cropcheck	Monitor and record crop performance. Key checks include establishment, weeds, insects, tiller numbers, disease and grain fill.
Rotation	- This is the first crop following wheat after rice.
Varieties	- Check *'Winter Crop Variety Sowing Guide 2009'* for approved varieties for SNSW. - There are two main types of barley varieties, malt and feed. For feed grain production consider Tantangara, Tulla, Hindmarsh, Capstan or Gairdner. - Gairdner, Cowabbie, Fairview and Baudin may be suitable for malt on irrigation.
Seed	- Budgets based on seed at $900/t
Protein	- Protein levels for malt should be between 9-12%, ideal protein 10.5%.
Fertiliser	- For malt barley, nitrogen application and the spring irrigation need to be strategically applied to ensure grain meets protein specifications. High fertility paddocks usually produce grain protein too high for malt grade. High rates of N can optimise feed grain yields
Sowing Time	- See *"Winter Crop Variety Sowing Guide 2009"* for recommended sowing time for each variety. - May till mid June.
Weed Control	- Herbicides are boomsprayed in a dry year and aerial sprayed in a wet year. - An additional broadleaf herbicide may be required if wireweed or toadrush are a problem. - Refer to "Weed Control in Winter Crops 2009" for alternative herbicides.
Seed Dressing	- Required for control of seedling leaf diseases.
Irrigation	- Budget allows for a pre-irrigation (1.5ML) plus one spring irrigation (1ML). - Only pre-irrigating a proportion of intended winter crop area to reduce risk of waterlogging - Barley is the most susceptible winter cereal to waterlogging. **-*The budget uses MIA total water costs based on 50% allocation.** **- Irrigation cost includes the variable cost and fixed water costs of $19.18/ML.** **- Water costs used in the MIA budgets are based on 2008-09 prices.** **- For prices in other areas and districts, refer to the water prices section.**
Machinery	- Machinery costs include variable costs only for the tractor, implements and header. - Contract harvesting does not include the cost of fuel.
Labour	- The labour required for machinery operations is 2.70 hr/ha. - Using a labour cost of $14/hr, an additional $38/ha can be deducted from the budget.
Economic note:	- Prices are based on feed barley. These gross margins are only a guide. - They do not include overhead costs or GST. - Input and crop prices are correct at the time of writing (March 2009). Market uncertainity makes estimation of future pricing impractical. **- Use your own figures and price assumptions to determine your own gross margin.**

NSW DEPARTMENT OF **PRIMARY INDUSTRIES**

FABA BEANS - (Furrow Irrigated - Beds)

Irrigated Winter - 2009 **Murrumbidgee Valley**

1.GROSS MARGIN BUDGET:

INCOME:		**Standard Budget $/ha**	**Your Budget $/ha**
5.00 tonnes/ha @	$300 /t (on farm)	$1,500	
A. TOTAL INCOME $/ha:		**$1,500**	

VARIABLE COSTS:

See following page for detail

Cultivation	$44	
Sowing	$130	
Fertiliser	$78	
Fungicide	$85	
Herbicide	$69	
Insecticide	$52	
Contract harvesting	$12	
Levies	$15	
Crop insurance	$49	
Irrigation	$165	
B. TOTAL VARIABLE COSTS $/ha:	**$700**	
C. GROSS MARGIN (A-B) $/ha:	**$800**	
D. GROSS MARGIN $/ML*:	**$178**	

* Note. The method of calculation of gross margin per ML for the Murrumbidgee budgets varies because of the difficulty of identifying an alternative dryland alternative on specialist flood irrigated land. It is recommended where farmers can identify a dryland alternative that they subtract the gross margin of the dryland alternative from the gro margin of the irrigated crop and then divide by the number of ML. This will give a better indication of the contributio the irrigation water has made to increasing returns.

SENSITIVITY TABLES

2. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER HECTARE:

YIELD	**ON FARM PRICE ($/tonne)**				
tonnes/ha	$260 /t	$280 /t	**$300 /t**	$320 /t	$340 /t
3.50	$236	$303	$370	$437	$504
4.00	$360	$437	$513	$590	$666
4.50	$485	$571	$657	$743	$829
5.00	$609	$705	**$800**	$896	$992
5.50	$733	$839	$944	$1049	$1155
6.00	$858	$973	$1088	$1203	$1317
6.50	$982	$1107	$1231	$1356	$1480

← Gross Margin ($/ha)

3. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER ML:

YIELD	**ON FARM PRICE ($/tonne)**				
tonnes/ha	$260 /t	$280 /t	**$300 /t**	$320 /t	$340 /t
3.50	$52	$67	$82	$97	$112
4.00	$80	$97	$114	$131	$148
4.50	$108	$127	$146	$165	$184
5.00	$135	$157	**$178**	$199	$220
5.50	$163	$186	$210	$233	$257
6.00	$191	$216	$242	$267	$293
6.50	$218	$246	$274	$301	$329

← Gross Margin ($/ML)

FABA BEANS - (Furrow Irrigated - Beds)

Murrumbidgee Valley

Irrigated Winter - 2009

CALENDAR OF OPERATIONS:		Machinery			Inputs			Total
			Cost	Total		Cost	Total	Cost
Operation	Month	hrs/ha	$/hour	$/ha	Rate/ha	$	$/ha	$/ha
Scarify	Jan/Feb	0.17	$45.05	$7.71				**$7.71**
Shape beds	Mar	0.26	$46.38	$12.08				**$12.08**
Broadleaf & grass weed control ***eg. boom spray (glyphosate 450)***	Apr	contract		$10.00	1.00 L/ha	$8.15/L	$8.15	**$18.15**
Additional bed shape	Apr	0.26	$46.38	$12.08				**$12.08**
Sow	May	0.17	$62.38	$10.48	120kg/ha	$0.95/kg	$114.00	**$124.48**
Seed inoculation		with above			120kg/ha	$0.050/kg	$6.00	**$6.00**
Apply phosphorus / sulphur fertiliser (***eg. Grain Legume Super)***		with above			225kg/ha	$0.890/kg	$77.63	**$77.63**
Construct tail drain		0.26	$46.38	$12.08				**$12.08**
Pre-emergent weed spray ***eg: ground spray Simazine***	May, contract		$10.00	$10.00	2.0 L/ha	$12.46/kg	$24.92	**$34.92**
Grass weed spray ***eg. Haloxyfop (Verdict®)***	June contract		$10.00	$10.00	0.060 L/ha	$94.00/L	$5.64	**$15.64**
1st leaf disease spray ***(eg. mancozeb)***	Jun/Jul	with above			2.20kg/ha	$11.54/kg	$25.39	**$25.39**
2nd leaf disease spray (***eg. mancozeb)***	Jul	contract		$10.00	2.00kg/ha	$11.54/kg	$23.08	**$33.08**
3rd leaf disease spray (***eg. *aerially spray carbendazim)***	Jul/Aug	contract		$18.15	0.50kg/ha	$16.30/kg	$8.15	**$26.30**
4th leaf disease spray + heliothis spray ***(eg. aerially apply*** mancozeb + synthetic pyrethroid ***eg. lambda-cyhalothrin (Karate Z®)***	Oct	contract		$18.15	2.38kg/ha	$11.54/kg	$27.47	**$45.62**
					0.03kg/ha	$214.88/kg	6.4464	**$6.45**
Contract harvest	Nov/Dec	contract		$2.47				**$2.47**
Chaser Bin	Nov/Dec	0.22	$45.05	$9.91				**$9.91**
Irrigation*					4.5ML/ha	$36.78/ML	$165.49	**$165.49**
Crop Levies					1.00% of on-farm value			**$15.00**
Crop Insurance					3.270% of on-farm value			**$49.05**

AGRONOMIC NOTES:

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Always read chemical labels and follow directions carefully, as it is your legal responsibility to do so.

Cropcheck	- Monitor and record crop performance. Key checks include establishment, weeds, insects, disease and grain fill.
Paddock selection:	- Select paddocks with low broadleaf weed burdens. - Good weed control is required in previous years. - Grow faba beans on soils with a pH above 5.2 ($CaCl_2$).
Rotation	- Suited to farming systems following a winter cereal or maize.
Varieties	- This budget is based on Farah. Farah is for human consumption. Other options are Nura and Fiesta VF. See "Winter Crop Variety Sowing Guide 2009" for approved varieties for SNSW.
Sowing	- Sowing rate should be adjusted according to seed size, seedling vigour and sowing date. Aim to establish 20 plants/m^2 for early - mid May sowing and 25 plants /m^2 for late May - early June sowing. - If using your own seed, adjust seed price accordingly.
Fertiliser:	- A fertiliser such as Grain Legume Super is applied to supply high phosphorus and sulphur requirements.
Disease control:	- Fungicides are essential to maintain seed quality. This budget is based on 4 fungicide sprays. Total number of sprays depends on seasonal conditions. May need up to 5 - 6 fungicide sprays in high disease years. Disease outbreaks in faba beans vary according to seasonal conditions. Check with your local agronomic advisor for appropriate disease control strategies for your area. * Aerial spray used later in the season. - Mancozeb is applied as a preventative disease spray against Chocolate Spot, Ascochyta, and rust. New variety Nura has increased resistance to ascochyta chocolate spot and rust. This variety has the potential to significantly reduce fungicide variable costs. - Refer to Pulse Point 16: "Foliar disease of Faba Beans - Management in Southern NSW" for 'fungicide sprays in high disease years.

FABA BEANS - (Furrow Irrigated - Beds)

Murrumbidgee Valley **Irrigated Winter - 2009**

AGRONOMIC NOTES CONTINUED:

Weed Control	- Pre-emergent herbicides such as simazine (eg:Gesatop®), imazethapyr (eg: Spinnaker®) or metribuzin (eg: Sencor®) can be used for broadleaf weed control. - Additional herbicides may be required to be tank mixed pre emergent depending on paddock history and weed spectrum. - Apply appropriate grass selective herbicide according to your herbicide resistance management program. - Post-emergent herbicides may not be required on crops following maize. - Refer to *Weed Control in Winter Crops 2009* for alternative herbicides.
Pest Control	- Refer to "Insect and Mite Control in Field Crops 2009". - Establishment pests are not normally a problem. Heliothis is the main pest at flowering/ podding. - A synthetic pyrethroid can be used up to 7 November to comply with the Heliothis IRM Strategy.
Irrigation	- Schedule spring irrigations according to plant water use. Faba beans respond well to irrigation and are the most waterlogging tolerant pulse crop, capable of withstanding some waterlogging. - *Budget allows for three spring waterings (1.5 ML/ha for pre-irrigationand 1 ML for each spring irrigation). **-*The budget uses MIA total water costs based on 25% allocation.** **- Irrigation cost includes the variable cost and fixed water costs of $19.18/ML** **- Water costs used in the MIA budgets are based on 2008-09 prices.** **- For prices in other areas and districts, refer to the water prices section.**
Machinery	- Machinery costs include variable costs only for the tractor, implements and header. - Contract harvesting does not include the cost of fuel.
Labour	- The labour required for machinery operations is 1.68 hr/ha. - Using a labour cost of $14/hr, an additional $23/ha can be deducted from the budget.
Economic note:	- These gross margins are only a guide. They do not include overhead costs or GST. - Input and crop prices are correct at the time of writing (March 2009). Market uncertainity makes estimation of future pricing impractical. **- Use your own figures and price assumptions to determine your own gross margin.**

NSW DEPARTMENT OF **PRIMARY INDUSTRIES**

CANOLA: (Furrow Irrigated - Beds)

Irrigated Winter - 2009 **Murrumbidgee Valley**

1.GROSS MARGIN BUDGET:

		Standard Budget $/ha	Your Budget $/ha
INCOME:			
3.00 tonnes/ha @	$500 /t (on farm, 42% oil)	$1,500	
A. TOTAL INCOME $/ha:		**$1,500**	
VARIABLE COSTS:			
See following page for detail			
Cultivation		$44	
Sowing		$49	
Fertiliser		$379	
Herbicide		$48	
Insecticide		$23	
Contract windrowing		$30	
Contract harvesting		$12	
Levies		$20	
Crop insurance		$49	
Irrigation		$129	
B. TOTAL VARIABLE COSTS $/ha:		**$783**	
C. GROSS MARGIN (A-B) $/ha:		**$717**	
D. GROSS MARGIN $/ML*:		**$205**	

* Note. The method of calculation of gross margin per ML for the Murrumbidgee budgets varies because of the difficulty of identifying an alternative dryland alternative on specialist flood irrigated land. It is recommended where farmers can identify a dryland alternative that they subtract the gross margin of the dryland alternative from the gro margin of the irrigated crop and then divide by the number of ML. This will give a better indication of the contributio the irrigation water has made to increasing returns.

SENSITIVITY TABLES

2. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER HECTARE:

YIELD	ON FARM PRICE ($/tonne)				
tonnes/ha	$460 /t	$480 /t	**$500 /t**	$520 /t	$540 /t
1.50	-$121	-$93	-$64	-$35	-$7
2.00	$98	$136	$175	$213	$251
2.50	$383	$431	$479	$526	$574
3.00	$602	$660	**$717**	$775	$832
3.50	$822	$889	$956	$1023	$1090
4.00	$1041	$1118	$1194	$1271	$1347
4.50	$1260	$1347	$1433	$1519	$1605

← Gross Margin ($/ha)

3. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER ML:

YIELD	ON FARM PRICE ($/tonne)				
tonnes/ha	$460 /t	$480 /t	**$500 /t**	$520 /t	$540 /t
1.50	-$35	-$26	-$18	-$10	-$2
2.00	$28	$39	$50	$61	$72
2.50	$109	$123	$137	$150	$164
3.00	$172	$188	**$205**	$221	$238
3.50	$235	$254	$273	$292	$311
4.00	$297	$319	$341	$363	$385
4.50	$360	$385	$409	$434	$459

← Gross Margin ($/ML)

CANOLA: (Furrow Irrigated - Beds) Murrumbidgee Valley Irrigated Winter - 2009

CALENDAR OF OPERATIONS:		Machinery			Inputs			Total Cost
			Cost	Total		Cost	Total	
Operation	Month	hrs/ha	$/hour	$/ha	Rate/ha	$	$/ha	$/ha
Scarify	Jan/Feb	0.17	$45.05	$7.71				**$7.71**
Apply sulphur fertiliser ***(eg. broadcast gypsum)***	Mar	0.26	$46.38	$12.08	300kg/ha	$0.055/kg	$16.50	**$28.58**
Shape beds, fertilise urea		0.26	$46.38	$12.08				**$12.08**
Apply nitrogen fertiliser ***(eg. Urea)***	Mar	with above			125kg/ha	0.734kg/ha	$91.75	**$91.75**
Pre-emergent weed spray ***(eg. trifluralin)***	Apr	contract		$10.00	1.70 L/ha	$8.45/L	$14.37	**$24.37**
Additional bed shape		0.26	$46.38	$12.08				**$12.08**
Sow treated seed	Apr/May	0.17	$62.38	$10.48	4kg/ha	$9.60/kg	$38.40	**$48.88**
Apply phosphorus fertiliser **(eg: MAP)**		with above			150kg/ha	$0.93/kg	$140	**$140.10**
Construct tail drains		0.26	$46.38	$12.08				**$12.08**
Apply earthmite spray ***eg.bifenthrin (Telstar®)***		contract		$10.00	0.075 L/ha	$54.66/L	$4.10	**$14.10**
Broadleaf weed spray ***eg. Chlopyralid (Lontrel®)***	Jun	contract		$10.00	0.30 L/ha	$46.27/L	$13.88	**$23.88**
Apply nitrogen fertiliser ***(eg. urea)***	Jul	contract	$24.46		125kg/ha	$0.734/kg	$91.75	**$118.75**
Apply heliothis spray synthetic pyrethroid ***eg.lambda-cyhalothrin (Karate Z®)***	Sep/Oct	contract	(1 year in 3)	$6.05	0.036 L/ha	$214.88/L	$2.58	**$8.63**
Contract windrowing	Nov	contract		$30.00				**$30.00**
Contract harvest	Nov/Dec	contract		$2.47				**$2.47**
Chaser Bin		0.22	$45.05	$9.91				**$9.91**
Irrigation*					3.5ML/ha	$36.78/ML	$128.71	**$128.71**
Crop Levies			$1.50 /t	+	1.02% of on-farm value			**$19.73**
Crop Insurance					3.27% of on-farm value			**$49.05**

AGRONOMIC NOTES: Use of a particular brand name does NOT imply a recommendation of that brand by NSW DPI. Always read chemical labels and follow directions carefully, as it is your legal responsibility to do so.

Cropcheck	- Monitor and record crop performance. Key checks include establishment, weeds, insects, disease and grain fill.
Varieties	- New varieties available, see *Winter Crop Variety Sowing Guide 2009* and *Canola Variety & Management Guide 2009*
Sowing Time	- Correct sowing time of 20th April to 10th of May is crucial for profitable yields.
Rotation	- Usually follows a winter cereal. Costs are lower if sowing into permanent beds. Check soil pH and lime if less than pH 5.0 ($CaCl_2$).
Oil Content	- An oil bonus/discount of 1.5% of price is applied for every 1% above/below 42% oil content.
	- Irrigated crops require high fertiliser inputs for good yields and quality.
Fertiliser	- Due to canola's high sulphur requirements, gypsum is preferred.
	- Aim to apply 40 - 60% of total nitrogen requirements before sowing.
Weed Control	- Herbicides are boomsprayed in a dry year and aerial sprayed in a wet year. Aerial spray used later in the season. Refer to *Weed Control in Winter Crops 2009* for alternative herbicides.
Pest Control	- Apply synthetic pyrethroid spray before Nov 7 to comply with Heliothis IRM Strategy.
	- Use imidacloprid (eg. Goucho®) treated seed to supress mites and aphids in low pressure situations. See "Insect and Mite Control in Field Crops 2007".
Irrigation	- Schedule spring irrigations according to plant water use.
	- *Budget allows establishment irrigation and two spring waterings.
	-*The budget uses MIA total water costs based on 50% allocation.
	- Irrigation cost includes the variable cost and fixed water costs of $19.18/ML
	- Water costs used in the MIA budgets are based on 2008-09 prices.
	- For prices in other areas and districts, refer to the water prices section.
Windrowing	- Reduces risk of crop loss from shattering and adverse weather conditions.
Bedcropping	- Bed cropping produces high yields but may require additional capital investment in equipment from $2,000 to $20,000.
Machinery	- Machinery costs include variable costs only for the tractor, implements and header.
	- Contract harvesting does not include the cost of fuel.
Labour	- The labour required for machinery operations is 2.00 hr/ha.
	- Using a labour cost of $14/hr, an additional $28/ha can be deducted from the budget.
Economic note:	- These gross margins are only a guide. They do not include overhead costs or GST.
	- Input and crop prices are correct at the time of writing (March 2009). Market uncertainity makes estimation of future pricing impractical.
	- Use your own figures and price assumptions to determine your own gross margin.

LUCERNE: Establishment (Flood Irrigated - Border Check)

Irrigated Winter - 2009

Murray Valley & Murrumbidgee Valley

1.GROSS MARGIN BUDGET:

INCOME:			**Standard Budget $/ha**	**Your Budget $/ha**
5.0 t/ha @	$350	/tonne ON FARM	$1,750	
3.0 t/ha @	$250	/tonne ON FARM	$750	
8.0 t/ha @	**$313**	**/tonne ON FARM ***		
(4 cuts @ 2 t/ha/cut)				
A. TOTAL INCOME $/ha:			**$2,500**	
VARIABLE COSTS:				
See following page for detail				
Cultivation			$75	
Sowing			$117	
Fertiliser			$267	
Fungicide			$6	
Herbicide			$53	
Insecticide			$15	
Mow, rake and bale			$640	
Cartage & stacking			$384	
Irrigation			$294	
B. TOTAL VARIABLE COSTS $/ha:			**$1,851**	
C. GROSS MARGIN (A-B) $/ha:			**$649**	
D. GROSS MARGIN $/ML:*			**$81**	

* Note. The method of calculation of gross margin per ML for the Murrumbidgee budgets varies because of the difficulty of identifying an alternative dryland alternative on specialist flood irrigated land. It is recommended where farmers can identify a dryland alternative that they subtract the gross margin of the dryland alternative from the gros margin of the irrigated crop and then divide by the number of ML. This will give a better indication of the contribution the irrigation water has made to increasing returns.

SENSITIVITY TABLES

2. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER HECTARE:

YIELD	**ON FARM PRICE ($/tonne)**					
tonnes/ha	$213 /t	$263 /t	**$313 /t**	$413 /t	$513 /t	
5.00	-$597	-$347	-$97	$403	$903	
6.00	-$448	-$148	$152	$752	$1352	
7.00	-$300	$50	$400	$1100	$1800	Gross
8.00	-$151	$249	**$649**	$1449	$2249	Margin
9.00	-$3	$447	$897	$1797	$2697	($/ha)
10.00	$146	$646	$1146	$2146	$3146	
11.00	$294	$844	$1394	$2494	$3594	

LUCERNE: Establishment (Flood Irrigated - Border Check)

Murray Valley & Murrumbidgee Valley **Irrigated Winter - 2009**

CALENDAR OF OPERATIONS:		Machinery			Inputs			**Total**
			Cost	Total		Cost	Total	**Cost**
Operation	Month	hrs/ha	$/hour	$/ha	Rate/ha	$	$/ha	**$/ha**
Plough	Dec	0.22	$48.80	$10.89				**$10.89**
Off-set disc	Jan	0.35	$42.85	$14.88				**$14.88**
Scarify	Feb/Mar	0.17	$45.05	$7.71				**$7.71**
Pre-emergent weed spray (***eg. trifluralin)***	Apr	contract		$10.00	1.70 L/ha	$8.45/L	$14.37	**$24.37**
Harrow (x 2)		0.17	$62.38	$20.97				**$41.94**
Sow	Apr/May	0.17	$62.38	$10.48	12kg/ha	$8.80/kg	$105.60	**$116.08**
Seed inoculation		with above			12kg/ha	$0.05/kg	$0.60	**$0.60**
Fungicide seed treatment (eg. Metalaxyl)		with above			150 mL/100kg seed	$0.32/mL	$5.80	**$5.80**
Phosphorus fertiliser (***eg. single super)***		with above			300kg/ha	$0.890/kg	$267.00	**$267.00**
Insect & mite spray (***eg. Boom spray bifenthrin)***	May	contract		$10.00	0.10 L/ha	$54.66/L	$5.47	**$15.47**
Broadleaf weed spray (***eg. 2,4-DB)***	May/Jun	contract		$10.00	2.10 L/ha	$8.70/kg	$18.27	**$28.27**
Mowing and baling	Oct-Apr	contract	320.00	bales/ha @	2.00	$/bale		**$640.00**
Cartage & stacking	Oct-Apr	contract	320.00	bales/ha @	1.20	$/bale		**$384.00**
Irrigation*	Sep - Mar				8.0ML/ha	$36.78/ML	$294.20	**$294.20**

AGRONOMIC NOTES:	**See NSW DPI publications: "Lucerne for Pasture and Fodder" "Irrigated Lucerne" and "Weed Control in Lucerne and Pastures"**
Prices	- Domestic hay prices fluctuate widely depending on supply and demand. - Prices are estimated and GST-exclusive. Prices during years of abundance range between $150 -250/tonne. - During drought years prices may rise to $300-600/ t. Prices used here reflect the current drought. - Higher prices are generally achieved during early winter. Good storage helps to achieve better prices. - prices based on small bales - price per bale basis (between $6-8 /bale). Small bales often receive higher returns than larger bales. Larger bales are cheaper to bale and transport.
Rotation	- Expected stand life 3 - 5 years for hay production. Lucerne fixes nitrogen for use by subsequent crops. - Don't sow lucerne after lucerne. Rotate with cereals to avoid insect & disease problems.
Layouts	- Good layouts with slopes of 1:750 - 1:1000 are preferred for flood irrigation to avoid waterlogging and to achieve good yields.
Varieties	- Use adapted, root-rot resistant varieties (Semi-dormant to highly winter active).
Inoculation	- Inoculate lucerne with correct strain of rhizobia (AL) to ensure good nodulation for nitrogen fixation (or buy pretreated seed which may increase cost).
Weed Control	- Pre-emergent herbicide controls grasses and wireweed during establishment. - Post-emergent herbicide applied for broadleaf weed control (2,4-DB is used in this budget but other options are available. See Weed Control in Lucerne and Pastures 2007, NSW DPI.
Disease Control	- Variety root rot resistance is crucial for flood irrigation.
Insect Control	- Seedlings are very susceptible to insect damage, particularly earth mites (RLEM, BOM) and aphids. - Regularly monitor establishing crops and take necessary remedial action. - Consider seed treatment or preventative bare earth sprays in high risk situations.
Production	- Assume four cuts are made during the first season. Assume that 1 tonne = 40 small square 25kg bales. - Assume 5 t is good quality and 3 t is downgraded by weather, weed, etc.
Fertiliser	- Lime should be incorporated 3 months before sowing, if soil pH < 5.2 ($CaCl_2$). This cost is not included in the budget. - Phosphorus fertiliser banded beneath the seed at sowing helps establishment and early growth. - Molybdenum super at sowing aids nodulation. Apply gypsum to sodic or crusting soils to improve soil permeability, reduce crusting and improve establishment.
Irrigation	**-*The budget uses MIA total water costs based on 50% allocation.** **- Irrigation cost includes the variable cost and fixed water costs of $19.18/ML.** **- Water costs used in the MIA budgets are based on 2008-09 prices.** **- For prices in other areas and districts, refer to the water prices section.**
Risk	- The production of good quality Lucerne hay involves significant risk due to weather and price fluctuations which potential growers should take into account. Thus some of hay is at a lower price.
Machinery	- Machinery costs include variable costs only for the tractor and implements. Two tractors: of 57 kW (76 HP) PTO and 63 kW (86 HP) engine; and of 130 kW (175 HP) PTO and 146 kW (196 HP) engine are assumed.
Economics	- These gross margins are only a guide. They do not include overhead costs or GST. - Input and crop prices are correct at the time of writing (March 2009). Market uncertainity makes estimation of future pricing impractical. **- Cost of establishment should be spread over life of the stand**

NSW DEPARTMENT OF **PRIMARY INDUSTRIES**

LUCERNE: Maintenance (Flood Irrigated - Border Check)

Irrigated Winter - 2009

Murray Valley & Murrumbidgee Valley

1.GROSS MARGIN BUDGET:

INCOME:			**Standard Budget $/ha**	**Your Budget $/ha**
9.00 t/ha @	$350.00	/tonne ON FARM	$3,150.00	
6.00 t/ha @	$250.00	/tonne ON FARM	$1,500.00	
15.00 t/ha @	**$310.00**	**/tonne ON FARM ***		
(5 cuts @ 3 t/ha/cut)				
A. TOTAL INCOME $/ha:			**$4,650.00**	
VARIABLE COSTS:				
See following page for detail				
Cultivation			$0.00	
Sowing			$0.00	
Fertiliser			$358.23	
Fungicide			$0.00	
Herbicide			$51.76	
Insecticide			$11.25	
Contract hay mowing, raking			$1,200.00	
Cartage & stacking			$720.00	
Irrigation			$478.08	
B. TOTAL VARIABLE COSTS $/ha:			**$2,819.32**	
C. GROSS MARGIN (A-B) $/ha:			**$1,830.68**	
D. GROSS MARGIN $/ML:			**$140.82**	

* Note. The method of calculation of gross margin per ML for the Murrumbidgee budgets varies because of the difficulty of identifying an alternative dryland alternative on specialist flood irrigated land. It is recommended where farmers can identify a dryland alternative that they subtract the gross margin of the dryland alternative from the gro margin of the irrigated crop and then divide by the number of ML. This will give a better indication of the contributio the irrigation water has made to increasing returns.

SENSITIVITY TABLES

2. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER HECTARE:

YIELD	**ON FARM PRICE ($/tonne)**				
tonnes/ha	$210 /t	$260 /t	**$310 /t**	$410 /t	$510 /t
10.50	-$38	$487	$1012	$2062	$3112
12.00	$85	$685	$1285	$2485	$3685
13.50	$208	$883	$1558	$2908	$4258
15.00	$331	$1081	**$1831**	$3331	$4831
16.50	$454	$1279	$2104	$3754	$5404
18.00	$577	$1477	$2377	$4177	$5977
19.50	$700	$1675	$2650	$4600	$6550

Gross Margin ($/ha)

3. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER ML:

YIELD	**ON FARM PRICE ($/tonne)**				
tonnes/ha	$210 /t	$260 /t	**$310 /t**	$410 /t	$510 /t
10.50	-$3	$37	$78	$159	$239
12.00	$7	$53	$99	$191	$283
13.50	$16	$68	$120	$224	$328
15.00	$25	$83	**$141**	$256	$372
16.50	$35	$98	$162	$289	$416
18.00	$44	$114	$183	$321	$460
19.50	$54	$129	$204	$354	$504

Gross Margin ($/ML)

LUCERNE: Maintenance (Flood Irrigated - Border Check)

Murray Valley & Murrumbidgee Valley **Irrigated Winter - 2009**

CALENDAR OF OPERATIONS:		Machinery			Inputs			**Total**
			Cost	Total		Cost	Total	**Cost**
Operation	Month	hrs/ha	$/hour	$/ha	Rate/ha	$	$/ha	**$/ha**
Broadleaf & grass weed spray								
(eg. Sprayseed) and	Jun/Jul	contract		$10.00	2.40 L/ha	$12.15/L	$29.16	**$39.16**
diuron		with above			1.50 L/ha	$8.40/L	$12.60	**$12.60**
Topdress phosphorus fertiliser ***(eg.***								
single super)	Aug	0.05	$41.38	$2.23	400kg/ha	$0.890/kg	$356.00	**$358.23**
Insect & mite spray ***(eg. dimethoate)***	Sep	contract	$10.00		0.15 L/ha	$8.35/L	$1.25	**$11.25**
Mowing, raking and baling	contract	Sep-Apr	600	bales/ha @	2.00	$/bale		**$1,200.00**
Cartage & stacking	contract	Sep-Apr	600	bales/ha @	1.20	$/bale		**$720.00**
Irrigation*	Sep-Mar				13.0ML/ha	$36.78/ML	$478.08	**$478.08**

AGRONOMIC NOTES:	**See NSW DPI publications: "Lucerne for Pasture and Fodder", "Irrigated Lucerne" and "Weed Control in Lucerne and Pastures" MANAGE STAND WELL FOR BEST PRODUCTION AND PERSISTENCE**
Prices	- Prices are estimated and GST-exclusive. - prices based on small bales - Prices should be $6-8/bale for this price per tonne.
Rotation	- Expected productive stand life 3 - 4 years. - Terminate stand when no longer economicaly viable (ie less than 50 plants/m^2) or weedy or thin patches. Rotate with cereals to reduce disease and insect problems.
Weed Control	- Apply herbicides to dormant lucerne in winter after cutting or grazing to control broadleaf and grass weeds, consult *Weed control in Lucerne and Pastures*.
Insect Control	- Regularly monitor for insects. Cut, graze or spray when necessary.*(See "Insect and mite control i**n** field crops"*
Irrigation	- Good irrigation management is critical for high yields and persistant. Fast irrigation essential on flood layouts.Water use depends upon the soil type and weather (10 - 16 ML per season). - Irrigation scheduling allows more efficient water use and helps to avoid waterlogging. **-*The budget uses MIA total water costs based on 50% allocation.** **- Irrigation cost includes the variable cost and fixed water costs of $19.18/ML.** **- Water costs used in the MIA budgets are based on 2008-09 prices.** **- For prices in other areas and districts, refer to the water prices section.**
Fertiliser	- High inputs of phosphorus fertiliser are needed to replace nutrients removed by highly productive hay stands.
Production	-Five cuts are made during the season (6-7 possible). Assume 1 tonne=40 small square bales. - Assume 9 t is good quality and 6 t is downgraded by weather, weeds, etc.
Cutting Management	- For stand persistence under flood irrigation allow 2 cm regrowth before watering again to avoid scald. To avoid damage to crown buds, do not cut too short (<7cm).
Risk	- The production of good quality lucerne hay involves significant risk (mainly weather) which potential growers should take into account. Hay prices are highly sensitive to supply and demand.Higher quality can improve returns.
Machinery	- Machinery costs include variable costs only for the tractor, implements and header. - Bailing and mowing prices are based on contract small bale prices. - Two tractors: of 57 kW (76 HP) PTO and 63 kW (86 HP) engine; and of 130 kW (175 HP) PTO and 146 kW (196 HP) engine are assumed. - Input and crop prices are correct at the time of writing (March 2009). Market uncertainity makes estimation of future pricing impractical.
Economics	- Input and crop prices are correct at the time of writing (March 2009). Market uncertainity makes estimation of future pricing impractical. **- Cost of establishment should be spread over life of the stand**

NSW DEPARTMENT OF **PRIMARY INDUSTRIES**

Winter Annual Pasture: Sub clover based - Establishment (Flood Irrigated - Border Check)

Murrumbidgee Valley & Murray Valley Costs only Irrigated Winter - 2009

CALENDAR OF OPERATIONS:		Machinery			Inputs			Total
			Cost	Total		Cost	Total	Cost
Operation	Month	hrs /ha	$/hour	$/ha	Rate/ha	$	$/ha	**$/ha**
Disc	Jan	0.35	$42.85	$14.88				**$14.88**
Scarify (x 2)	Jan/Feb	0.17	$45.05	$15.43				**$30.86**
Grade	Feb	0.17	$45.05	$7.71				**$7.71**
Pre-emergent weed control								
(eg. trifluralin)	Mar/Apr	0.05	$41.38	$2.23	2.10 L/ha	$8.45/L	$17.75	**$19.97**
Scarify-incorp (x 2)		0.17	$45.05	$15.43				**$30.86**
Sow		0.17	$62.38	$10.48	10kg/ha	$6.50/kg	$65.00	**$75.48**
Apply phosphorus fertiliser ***(eg. combine single super)***		with above			250kg/ha	$0.890/kg	$222.50	**$222.50**
Seed inoculation		with above			10kg/ha	$0.05/kg	$0.50	**$0.50**
Insect & mite spray ***(eg. dimethoate)***	May contract		$10.00		0.15 L/ha	$8.35/L	$1.25	**$11.25**
Broadleaf weed spray ***(eg.bromoxynil)***	Jun contract		$10.00		2.00 L/ha	$16.69/L	$33.38	**$43.38**
Irrigation*					5.00ML/ha	$36.78/ML	$183.88	**$183.88**

AGRONOMIC NOTES:

Use of a particular brand name does NOT imply a recommendation of that brand by NSW DPI.

Always read chemical labels and follow directions carefully, as it is your legal responsibility to do so.

See www.dpi.nsw.gov.au for specific information on subclover.

Inoculation
- Use correct strain of rhizobium inoculant on clover seed (Strain C for subclover).

Establishment
- Use adequate rate of good quality seed. Subclover thickens with time.
- Optimum sowing time March-April. Establishment costs should be spread over the life of the stand.

Weeds
- Broadleaf weeds controlled with bromoxynil
- Trifluralin used for pre-emergent control of grasses (assuming clover is sown without grasses)
- In a rice, cereals, pasture rotation, the need for trifluralin is reduced if fallow is commenced before seed set of grasses.
- Other options available (see *Weed Control in Lucerne and Pastures, NSW DPI*).

Insects
- Aphids may require control after establishment or in spring. Dimethoate used for earthmite control.
- A 2nd irrigation (or rainfall) within 7 days of sowing is necessary to ensure establishment.

Varieties
- Choose varieties with waterlogging tolerance and disease resistance. See *Pasture varieties used in NSW, NSW DPI*

Fertiliser
- Incorporate lime if pH ($CaCl_2$) <5.0, well before sowing.
- P, S and Mo are essential for clover. Use single superphosphate or equivalent at sowing.

Irrigation*
- Ensure germinating seedlings do not dry out. Water in autumn for forage production and at least once in spring is essential for good seed set to ensure regermination in following year.
- ***The budget uses MIA total water costs based on50% allocation.**
- **Irrigation cost includes the variable cost and fixed water costs of $19.18/ML.**
- **Water costs used in the MIA budgets are based on 2008-09 prices.**
- **For prices in other areas and districts, refer to the water prices section.**

Machinery
- Machinery costs include variable costs only for the tractor and implements.

Labour
- The labour required for machinery operations is 1.78 hr/ha.
- Using a labour cost of $14/hr, an additional $25/ha can be deducted from the budget.

Economic note:
- These gross margins are only a guide. They do not include overhead costs or GST.
- Input and crop prices are correct at the time of writing (March 2009). Market uncertainity makes estimation of future pricing impractical.
- **Use your own figures and price assumptions to determine your own gross margin.**

NSW DEPARTMENT OF **PRIMARY INDUSTRIES**

Winter Annual Pasture: Sub clover - Maintenance (Flood Irrigated - Border Check)

Murrumbidgee Valley & Murray Valley Costs only Irrigated Winter - 2009

CALENDAR OF OPERATIONS:		Machinery			Inputs			Total Cost
			Cost	Total		Cost	Total	
Operation	Month	hrs /ha	$/hour	$/ha	Rate/ha	$	$/ha	$/ha
Topdress phosphorus fertiliser								
(eg.single super)	Feb/Mar	0.05	$41.38	$2.23	300kg/ha	$0.89/kg	$267.00	**$269.23**
Insect & mite spray								
eg.dimethoate)	May/Jun	contract		$10.00	0.09 L/ha	$8.35/L	$0.75	**$10.75**
Broadleaf weedspray								
eg. bromoxynil)	May/Jun	contract		$10.00	2.00 L/ha	$16.69/L	$33.38	**$43.38**
Irrigation*					5ML/ha	37ML/ha	$183.88	**$183.88**

AGRONOMIC NOTES:

Use of a particular brand name does NOT imply a recommendation of that brand by NSW DPI.
Always read chemical labels and follow directions carefully, as it is your legal responsibility to do so.

Fertiliser - Fertiliser requirement depends on irrigation intensity, amount of forage removed and the value of production. Dairy pastures require at least 300 kg/ha single super every year to replace phosphorus.

Stocking rate - Intensively irrigated and fertilised annual pastures can maintain 18-24 DSE/ha per year (autumn till late spring) if well managed, but the more usual rate is 10-12 DSE/ha. Earlier irrigation and higher inputs of fertiliser and water allows more stock to be carried.
- Avoid overgrazing in winter as pasture recovery time increases.
- Set stocking helps to maintian clover dominant pasture.

Irrigation - Subclover is irrigated 2-3 times in autumn commencing in late Feb/early March to established stands and twice in spring to ensure seed set. Water use can be up to 5-6 ML/ha in dry years
- Germination is reduced with earlier commencement of irrigation and if the autumn is dry, up to 5 irrigations maybe required
- Annual pasture should be fully irrigated in the spring to ensure good seed set. Autumn production is directly related to plant population resulting from seed set in the previuos spring.

-*The budget uses MIA total water costs based on 25% allocation.
- Irrigation cost includes the variable cost and fixed water costs of $19.18/ML.
- Water costs used in the MIA budgets are based on 2008-09 prices.
- For prices in other areas and districts, refer to the water prices section.

Machinery - Machinery costs include variable costs only for the tractor and implements.
- Contract harvesting does not include the cost of fuel.

Labour - The labour required for machinery operations is 0.07 hr/ha.
- Using a labour cost of $14/hr, an additional $1/ha can be deducted from the budget.

Economic note - These gross margins are only a guide. They do not include overhead costs or GST.
- Input and crop prices are correct at the time of writing (Mar 2008). Market uncertainity makes estimation of future pricing impractical.
- Use your own figures and price assumptions to determine your own gross margin.

NSW DEPARTMENT OF **PRIMARY INDUSTRIES**

Summer Perennial Pasture: White clover/ryegrass (Establishment & Maintenance)

(Flood Irrigated - Border Check)

Murrumbidgee Valley & Murray Valley **Costs only** **Irrigated Winter - 2009**

CALENDAR OF OPERATIONS:		Machinery			Inputs			**Total**
			Cost	Total		Cost	Total	**Cost**
Operation	Month	hrs /ha	$/hour	$/ha	Rate/ha	$	$/ha	**$/ha**
Establishment								
Disc	Jan	0.35	$42.85	$14.88				**$14.88**
Scarify (x 2)	Jan/Feb	0.17	$45.05	$15.43				**$30.86**
Grade	Feb	0.17	$45.05	$7.71				**$7.71**
Sow (ryegrass)	Mar/Apr	0.17	$62.38	$10.48	15kg/ha	$3.50/kg	$52.50	**$62.98**
Sow (white clover)		with above			2kg/ha	$6.50/kg	$13.00	**$13.00**
inoculate seed		with above			2kg/ha	$0.05/kg	$0.10	**$0.10**
Phosphorus fertiliser (***eg. single super)***		with above			300kg/ha	$0.89/kg	$267.00	**$267.00**
Insect and mite spray (***eg. dimethoate)***		contract	$10.00		0.09 L/ha	$8.35/L	$0.75	**$10.75**
Broadleaf weed spray								
(eg bromoxynil)	May/Jun	contract		$10.00	2.00 L/ha	$16.69/L	$33.38	**$43.38**
Irrigation*	Sept-Mar				10.00ML/ha	$36.8/ML	$367.76	**$367.76**
Total Establishment Costs								**$818.42**
Maintenance								
Insect and mite spray								
(eg. dimethoate)	Apr/May	contract		$10.00	0.15 L/ha	$8.4/ML	$1.25	**$11.25**
Broadweed spray								
(eg.2,4-DB)	May	contract		$10.00	2.10 L/ha	$8.7/ML	$18.27	**$28.27**
Topdress phosphorus fertiliser								
(eg. single super)	Aug	0.05	$41.38	$2.23	500kg/ha	$0.9/ML	$445.00	**$447.23**
Irrigation*	Sep-Mar				13.00ML/ha	$36.8/ML	$478.08	**$478.08**
Total maintenance costs per year								**$964.83**

AGRONOMIC NOTES: See NSW dpi website (www.dpi.nsw.gov.au)for specific information on pastures

Use of a particular brand name does NOT imply a recommendation of that brand by NSW DPI.

Always read chemical labels and follow directions carefully, as it is your legal responsibility to do so.

Inoculation - Use correct strain of rhizobium inoculant on clover (Strain B for white clover).

Layout -Border check layouts with even grades & slopes steeper than 1:1000 are preferred to ensure good drainage.
- Bay length for irrigation should not exceed 300m.

Varieties - See Primefacts *White Clover* and *Pasture varieties used in NSW, NSW DPI*.
- Use varieties adapted to your situation.

Herbicides - Bromoxynil used for broadleaf weeds in this budget.
- Other options are available, (see *Weed Control in Lucerne and Pastures 2007, NSW DPI*).
- Rotate herbicide groups to avoid insect resistance.

Grazing - For white clover / grass pastures, set stocking is needed to maintain the quality of the pastures.
- Stocking rate must match pasture availability.

Insecticides - Dimethoate used for earthmite control (other options available - see *"Insect and mite control in field crops", NSW DPI)*

Fertilisers - Phosphorus applied as superphosphate at sowing and in early spring each year.

Irrigation - Schedule irrigations (7-10 days) depending on soil type and evapo-transpiration to maintain white clover component which requires frequent irrigation in summer to survive.
- (longer interval on clay soils). Fast irrigations (less than 12 hrs) required.
- ***The budget uses Murrumbidgee IA total water costs based on 50% allocation.**
- **Irrigation cost includes the variable cost and fixed water costs of $19.18/ML.**
- **For prices in other areas and districts, refer to the water prices section.**

Machinery - Machinery costs include variable costs only for the tractor and implements.

Labour - The labour required for machinery operations is 1.08 hr/ha.
- Using a labour cost of $14/hr, an additional $15/ha can be deducted from the budget.

Economic note: - These gross margins are only a guide. They do not include overhead costs or GST.
- Input and crop prices are correct at the time of writing (Feb 2008). Market uncertainity makes estimation of future pricing impractical.
- **Use your own figures and price assumptions to determine your own gross margin.**