

C'mon Aussie farmers – back the Aussie battlers!



Farm Chemicals



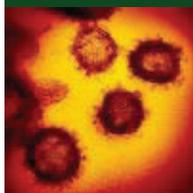
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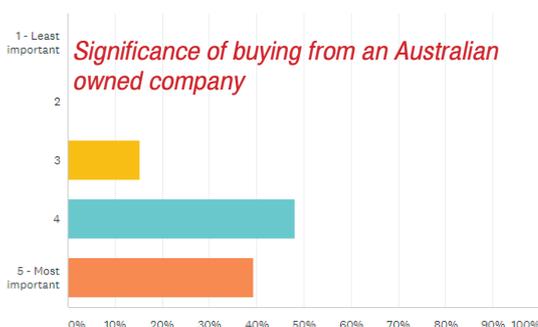


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from small
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Australians prefer to buy from Australian owned companies and products that are Australian made.

That's the finding of a survey recently commissioned by 4Farmers, where over 88% of respondents ranked the significance of buying from an Australian owned company as highly important.

A similarly high proportion of respondents indicated that buying Australian made had a significant influence on their purchasing decisions.



Like eating lamb chops, it tickles the heart strings when we know we can support our own Aussies.

FOREIGN DOMINATION

Recently an international Canadian conglomerate eliminated another Australian from the competition and is now reported to control an alarming 45% of the Australian rural merchandise market.

The next biggest company may be listed on the ASX but it's not necessarily Australians who own all the shares.

COMPETITION REDUCED

The other companies supplying the market are comparative minnows.

The effective reduction in competition is a long-term concern for farmers unless they make a conscious effort to support the smaller companies that will keep strong competition alive.

FOREIGN MANUFACTURERS

As well as foreign ownership of retail outlets, it's also sad to think how many supply companies are foreign owned; FMC – USA, ADAMA and Syngenta – Chinese, Bayer and BASF – German.

Make no mistake 4Farmers welcomes free trade, competition and innovation. 4Farmers doesn't agree with protectionism that adds to the costs of Aussie farmers; like Nufarm's 35% protection duty on Chinese 2,4-D products, or tariffs on Trifluralin.

We would all prefer to get behind Australian companies competing on their own merits, beating foreign competition with better value and no government props.

BUY 4FARMERS

As well as being 100% Australian owned and all the profits staying in Australia, approximately 70% of the chemicals sold by 4Farmers are blended and made in our own Australian plant.

That supports more Australian jobs and more money stays in Australia.

If farmers care about buying from an Australian company that makes a lot of its product in Australia, the clear choice for farm chemicals is 4Farmers.

As well as patriotically supporting your nation, you are also supporting competition that benefits you.

We couldn't save the Holden car, but with farmers support, 4Farmers will survive.

4Farmers Products

with cross reference to similar trade name products

| Herbicides | Similar Product |
|--------------------------|--|
| 2,4-D Amine 625 | Amicide 625 [®] |
| 2,4-D Ester 680 | Estercide Xtra 680 [®] |
| 2,4-D Ester 800 | Various |
| 2,4-D plus Picloram | Tordon™ 75-D |
| Amitrole 250 | Amitrole T [®] |
| Atrazine 600SC, 900WG | Gesaprim [®] |
| Bromacil | Uragran [®] |
| Bromox MA | Bromicide MA [®] |
| Bromoxynil 200 | Bromicide 200 [®] |
| Brown Out | Spray.Seed [®] |
| Butafenicil 200 RP* | LogranB [®] |
| Butoxydim 250 | Factor [®] |
| Carfentrazone 240EC | Hammer [®] |
| Carfentrazone 240EW | Affinity Force [®] |
| Chlorsulfuron 750 | Glean [®] |
| Clethodim 240 | Select [®] |
| Clodinafop 240 | Topik [®] |
| Clopyralid 300, 750 | Lontrel [®] |
| Cyanazine 900 | Bladex [®] |
| Dicamba 500 | Dicer 500 [®] |
| Diclofop-Methyl 500 | Hoegrass [®] |
| Diflufenican 500 | Brodal [®] |
| Diflufenican/Bromoxynil | Jaguar [®] |
| Diquat 200 | Reglone [®] |
| Diuron 900 | Various |
| Fluazifop 212 | Fusilade [®] |
| Flumetsulam 800 | Broadstrike [®] |
| Fluroxypyr 200 | Starane™ |
| Glufosinate-Ammonium 200 | Basta [®] |
| Glyphosate 450 MEA | Roundup [®] |
| Glyphosate 470, 510 | Roundup [®] |
| Glyphosate 540 | Roundup [®] |
| Glyphosate 875 | Roundup Dry [®] |
| Haloxypop 520 | Verdict [®] |
| Ipic 240 | Flame [®] |
| Imazamox 700 | Raptor [®] |
| Imazethapyr 700 | Spinnaker [®] |
| I-PYR 750 | Arsenal [®] |
| Linuron 450 | Linurex [®] |
| LV MCPA 570 | LVE Agritone [®] |
| LVE MCPA/ Diflufenican | Tigrex [®] |
| MCPA 750 | Agritone [®] |
| MCPA/Picloram | Trooper 242 [®] |
| Metolachlor 960 | Dual [®] |
| s-Metolachlor 960 | Dual Gold [®] |
| Metribuzin 750 | Lexone [®] , Sencor [®] |
| Metsulfuron Methyl 600 | Ally [®] |
| Oryzalin 500 | Surflan [®] |
| Oxyfluorfen 240 | Goal [®] , Striker [®] |
| Paraquat 250 | Gramoxone [®] |
| Pendimethalin 330, 440* | Stomp [®] , Argo [®] |
| Picolinafen 750 | Sniper [®] |
| Propyzamide 500 | Kerb [®] , Edge [®] , Rustler [®] |
| Prosulfocarb 800 | Arcade [®] , part Boxer Gold [®] |
| Quizalofop-p-ethyl 100 | Targa [®] |
| Simazine 900 | Gesatop [®] |
| Sulfometuron 750 | Oust [®] |
| Sulfosulfuron 750 | Monza [®] |
| Terbutylazine 750 | Terbyne 750 [®] |
| Terbutryn 500 | Igran [®] |
| Tralkoxydim 400 | Achieve [®] |
| Tri-allate 500 | Avadex [®] |
| Triasulfuron 750 | Logran [®] |
| Tribenuron Methyl 750 | Express [®] |
| Triclopyr 600, 755 | Garlon [®] |
| Trifluralin 480 | Treflan [®] |
| Tri-pick | Grazon [®] |
| Turf Control | Spearhead [®] |



| Seed Dressings | Similar Product |
|--------------------------------|--|
| Fluquinconazole | Jockey Stayer [®] |
| Imidacloprid 600 | Gaicho [®] , Emerge [®] |
| Imid-Triadimenol | Zorro [®] |
| Iprodione 500 | Rovral [®] |
| Metalaxyl-M 350 | Apron XL [®] |
| Procymidone 500 | Sumislex [®] |
| Tebuconazole 25T | Raxil [®] |
| Triadimenol liquid/WP150 | Baytan C [®] |
| Triticonazole 200 | Real [®] |
| Fungicides | Similar Product |
| Azoxystrobin 250 SC | Amistar WG [®] |
| Azoxystrobin 500 | Amistar WG [®] |
| Azoxy Cypro | Amistar Xtra [®] |
| Carbendazim 500 | Bavistin [®] , Spin [®] |
| Chlorothaloril 720 | Bravo [®] |
| Epoxiconazole 125 | Opus 125 [®] |
| Flutriafol 500 | Impact [®] , Intake [®] |
| Iprodione 500 | Iprodione Aquaflo [®] |
| Mancozeb 750 | Penncozeb 750 DF [®] |
| Procymidone 500 | Sumislex [®] |
| Propiconazole 500 | Tilt [®] , Throttle [®] |
| Proteb* | Prosaro [®] |
| Tebuconazole 430 | Folicur [®] |
| Tebuconazole 800 | Turbulence [®] |
| Triadimefon 125 | Triad [®] , Slingshot [®] |
| Triadimefon 500 Dry | Unique to 4Farmers |
| Triadimenol 250 | Bayfidan [®] , Shavit [®] |
| Insecticides | Similar Product |
| Alpha-Cyper 100EC, 250SC | Dominex [®] |
| Al Phosphide tablets, blankets | Phostoxin [®] |
| Bifenthrin 100 | Talstar [®] |
| Bifenthrin 300 EC | Talstar [®] |
| Chlorpyrifos 500 | Lorsban [®] |
| Dimethoate 400 | Rogor [®] |
| Fenamiphos 400 | Nemacur [®] |
| Fipronil 800 | Regal [®] |
| Imidacloprid 200 | Confidor [®] |
| Lambda-Cyhalothrin 250 | Karate Zeon [®] |
| Omethoate 290 | Le-mat [®] |
| Pirimicarb 500 | Aphidex [®] , Pirimor [®] |
| Rodenticides | Similar Product |
| Zinc Phosphide Mouse Bait | MouseOff [®] |
| Strychnine Alkaloid Crystals | |
| 1080 Vermin Baits | |
| Other Products | Similar Product |
| Boom Cleaner | |
| Foam marker | |
| Metaldehyde Snail/Slug Bait | |
| Adjuvants | Similar Product |
| Ammonium Sulphate | |
| Citric Acid | |
| Farm Pro 700 | LI 700 [®] |
| Penetrator | Pulse Penetrant [®] |
| Speedy Spray Adjuvant | Hasten [®] |
| Sunshade Spray Adjuvant | AntiEvap [®] |
| Take Up | Uptake [®] |
| Turbo Charge | Supercharge [®] , Uptake [®] |
| Trace Elements | Similar Product |
| Zn Chelate EDTA 14.5% | |
| Cu Chelate EDTA 14.5% | |
| Mn Chelate EDTA 14.5% | |

*RP – Registration pending

Pendimethalin a match for Trifluralin

Pendimethalin and Trifluralin can provide similar control of Annual Ryegrass in Wheat, Barley, Canola and Lupins, and are usually incorporated before sowing (IBS). Both are Group D herbicides in the Dinitroanilines sub group.

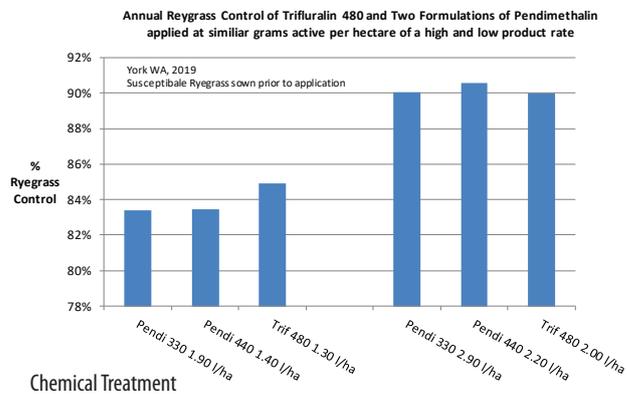
Pendimethalin, however, offers a couple of advantages.

It has lower volatility so it doesn't need to be incorporated as quickly after application, and in some situations may give suppression of Barley Grass.

Up until now the price difference between the two has favoured the use of Trifluralin over Pendimethalin, although recently the two are closer in price due to Pendimethalin prices falling and Trifluralin increasing.

RYEGRASS CONTROL SIMILAR

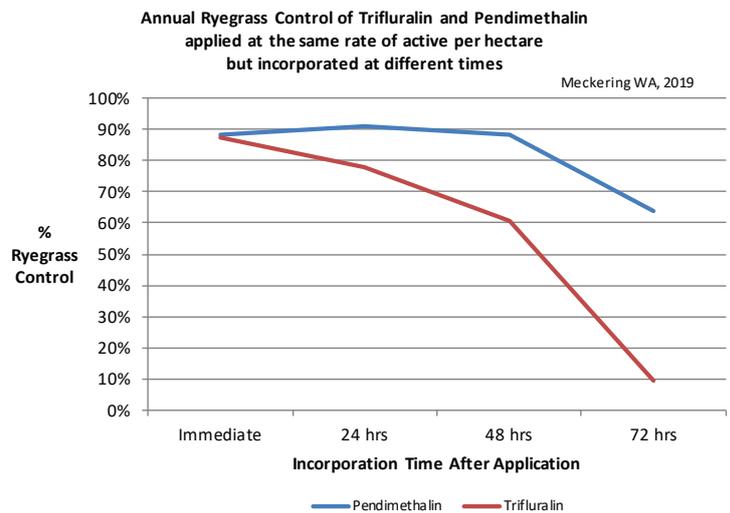
4Farmer's trials conducted in 2019 showed that when applied at the same rates of 'active' per hectare Pendimethalin and Trifluralin can give similar pre-emergent control of Ryegrass.



PENDIMETHALIN LESS VOLATILE

An advantage of Pendimethalin is its lower volatility which means it allows an extended incorporation time after application.

A 4Farmer's trial conducted in 2019 showed that when either Trifluralin or Pendimethalin is applied at the same rate of active and incorporated immediately, Ryegrass control is similar. When incorporation is delayed at least 24 hours, the Pendimethalin is superior due to less volatilisation losses.



It's interesting to note in other environments, mostly horticulture or where there is good moisture for incorporation, Pendimethalin has post emergent recommendations on its label.

BARLEY GRASS SUPPRESSION

Another benefit observed in one 4Farmers trial was Barley Grass suppression.

In a field trial over run with Barley Grass in 2019 suppression of Barley Grass in Pendimethalin plots was clearly visible compared with the Trifluralin plots.

This observation would be classified as 'useful suppression' rather than control. It will be interesting to see if this result is repeated in future years.

GROWER EXPERIENCE

Although Barley Grass suppression is not on the label, it is supported by grower experience.

Mukinbudin farmer, Denis Palm has been using Pendimethalin for over 20 years.

He says that he has always preferred Pendimethalin instead of Trifluralin where Barley Grass is an issue.

'The results have been best in moist conditions', he said.

'Sulfosulfuron can control Barley Grass but increasing B group resistance is a concern. Using it in the same year as Pendimethalin makes sense for resistance management'.

SUMMARY

Pendimethalin is now the closest in cost per hectare to Trifluralin it has been for the last 20 plus years. When used at equivalent rates of grams 'active' per hectare, each product gives similar ryegrass control. Pendimethalin may have the added benefit over Trifluralin in that it can provide useful suppression of Barley Grass.

Pendimethalin does not volatilise as quickly as Trifluralin. So timing to incorporation is not nearly as critical as Trifluralin, giving more flexibility at seeding time.

Perceptions that Pendimethalin does not perform as well as Trifluralin on ryegrass could be drawn from trials where Pendimethalin has been compared against Trifluralin at higher amounts active ingredients per hectare.

At current prices, the highest label rate of Pendimethalin 330 1.8L/ha is a little over \$1/ha more than the equivalent rate of Trifluralin 480 at 1.25L/ha.

At the highest label rate of Trifluralin 480 of 2.0L/ha, the equivalent active amount of Pendimethalin 330 is 2.9L/ha and only around \$1.75/ha more.



Mukinbudin farmer, Denis Palm says he has always preferred Pendimethalin instead of Trifluralin where Barley Grass is an issue.

Farm chemicals: How long can they be stored for?

A PVMA registration requires accelerated storage testing of product equivalent to 2 years. However chemical quality can be maintained much longer.

Good storage is a critically important in maintaining chemical quality.

Some changes might be cosmetic but other attributes can significantly change performance of a chemical.

SYMPTOMS OF CHANGE

Changes of product over time might be seen as;

Colour: Dyes can fade in direct sunlight: eg Glyphosate. Some chemicals are photosensitive eg Prosulfocarb, Metolachlor. These changes are usually cosmetic.

Active ingredient decline: Examples of chemicals more prone to this are Esters, Dimethoate, Butoxydim. In good storage the change may only be minimal.

Separation: Could be overcome with good mixing. A thin layer at the top of an SC is perfectly normal.

Fall Out: Sometimes seen as crystals in poor quality Glyphosate or Trifluralin. These tend to form in cold conditions.

Other products could have precipitate of their active on the bottom of the drum that is difficult to re-suspend even with agitation.

Physical Attributes: Flaking, formation of lumps, product setting hard

CAUSES OF DEGRADATION

Degradation of chemical will be accelerated due to:

- Quality of product
- Poor storage.

Good storage stability starts with the quality of the product. All 4Farmers products, from our factory and imported, are quality tested and guaranteed.

However, even good quality, well formulated products can struggle in poor storage. So don't immediately blame a supplier, consider the storage.

Quality of product factors:

- * Quality of product ingredients
- * Poor formulation resulting in;
 - Splitting/layering of formulations
 - Fall out
 - Changing physical attributes like increasing viscosity or lump formation

* Poor packaging can lead to allowing external exchange of material:

- Moisture in
- Solvent or other inerts escaping

Environmental factors:

* Storage temperature

- High temperature especially is the biggest cause of premature aging. Products like Imidacloprid 600 are particularly sensitive if stored or transported in hot conditions.

- Cold conditions can cause crystallisation, inactivate emulsifiers and encourage separation.

* Humidity

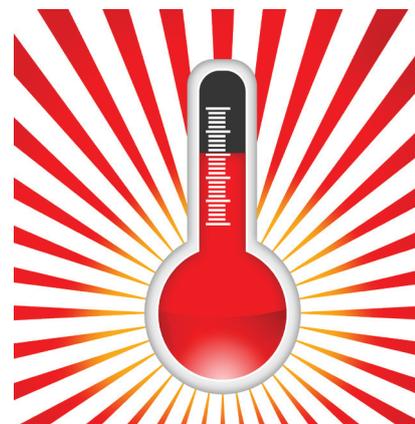
- Causes caking in dry formulations:
- Granules can disintegrate to powder in very low humidity

* Sunlight

- Can change colour. Usually cosmetic
- Some products can be photo sensitive eg Prosulfocarb, Metolachlor

CONCLUSION

For the majority of products, storage under optimum conditions will ensure shelf life extends well beyond the minimum 2 years -



Temperature a key factor

but even the best of products will fail in poor storage.

Elevated temperatures and temperature cycling are the biggest natural enemies of chemical stability.

The advice commonly found on labels is very sound, 'Store in closed, original container in a cool well ventilated area, as cool as possible. Do not store for prolonged periods in direct sunlight'.

Cooler storage extends chemical life

The standard tests for storage stability use a constant 23degC.

The average temperatures of most farm storage may be around this but the ranges can cycle much higher and lower. High ranging temperature in particular can significantly shorten the life of a chemical.

You will notice from the chart alongside that degradation at higher temperatures isn't a straight line response but an exponential one.

| Temperature | Degradation |
|-------------|-----------------|
| 23°C | Real time |
| 35°C | 8 times faster |
| 40°C | 12 times faster |
| 50°C | 24 times faster |

Acknowledgement Eureka AgResearch

Continued next page...



A large well ventilated light coloured chemical shed like this at Gnowangerup can help extend chemical quality in storage

Farm chemicals: How long can they be stored for?

REAL WORLD STUDY

4Farmers recently collaborated in a study with Eureka AgResearch on gathering real data in actual farm storage. Temperatures were logged for a whole year in 5 sheds – at Gnowangerup, Esperance, Mullewa, Hyden and Kalannie to give a good representation of the WA wheatbelt.

If we compare chemical stored at a constant (in a laboratory or temperature controlled warehouse) with that stored in a shed which accumulates the equivalent of 4 weeks at temperatures over 40C during its first year of storage, the chemical in the shed has theoretically aged an extra year. In other words, only 1 year stored at a constant 23C is the same as 2 years in a very hot shed.

The results below were influenced by the location of each site but also significantly impacted by the design of each shed. Clearly farmers need to be mindful of their chemical storage space and definitely avoid situations like a hot sea container as used in Esperance.

| Site | Temperature | | | Comments |
|-------------|-------------|---------|---------|--|
| | Mean | Maximum | Minimum | |
| Gnowangerup | 15.1° | 39.1° | 2.0 | Very good storage conditions by Australian cropping belt standards. Chemical experienced only an occasional and short exposure to temperatures over 35°C and none over 40°C. |
| Esperance | 18.1° | 56.2° | -0.1° | This is worrying storage conditions for agchems. Between September & April a high proportion of the time was spent over 35°C and a significant time was over 40°C. The highest temperature event of 56°C is worrying. There were about 16 events over 50°C. In winter there was an occasional incident of low temperature which included one event below zero. |
| Mullewa | 22.3° | 50.6° | 3.8° | This was worrying storage conditions for agchems. Between September & Early May a high proportion of the time was spent over 35°C and a substantial time was over 40°C. The highest temperature event of 50°C is worrying. It was better than Esperance at least in that this was the only event over 50°C. In winter there was an occasional incident of low temperature. |
| Hyden | 18.4° | 46.4° | 1.8° | By Australian cropping zone standards this was a "normal" shed. That doesn't mean that it is good, more that it is average. Chemicals were exposed to significant time over 35°C but minimal time over 40°C. There were a few worrying low temperature events. |
| Kalannie | 20.3° | 47.5° | 1.3° | By Australian cropping zone standards this was also a "normal" shed. Chemicals were exposed to significant time over 35°C but minimal time over 40°C. There were a few worrying low temperature events. |

Shock events a reminder to farmers to organise chemical requirements early

The recent Corona Virus is a good reminder of how it is possible for sudden unpredictable events to impact on chemical supplies.

It can only be speculated how Corona Virus will play out and what the final effect will be on the availability of individual products.

CONTROL WHAT WE CAN CONTROL!

What is for sure, events like Corona Virus are not in our control but we can control how early chemical requirements are ordered and how we might manage strategic buffer supplies of required products.

Paddock rotations and areas of various crops are usually known well in advance and what chemical requirements are likely.

Early orders for these that are usually honoured with prompt or early delivery of product is the best strategy to make sure you have product in a timely fashion.

SOURCES OF STRAINS ON SUPPLY:

Disruptions or strains on chemical supply can come from many sources;

1. Competing global demand.

Australia is just one country in the globe competing for supply of product.

2. Supply issues within the country of source.

The Corona Virus is one example of this as well as environmental restrictions as we have seen in China in recent years.

3. Shipping delays.

These could be due to weather or labour disputes. A further complication of all product received in Fremantle is it must be transhipped in Singapore.



4. Domestic Supply Issues.

Local production can be another bottleneck if there are shortages of other ingredients like solvents or packing materials like drums.



Events like the Corona Virus cause chaos

5. Local Season Conditions.

Recent rains on the east coast after a couple years of drought have seen Glyphosate supplies flip from feast to famine.

6. Local market conditions.

Local suppliers have to collectively guess what they need to supply and this might not match demand.

To expect suppliers to punt on enough stock to cover all these contingencies and satisfy all demand is unrealistic. This is especially so in generic chemicals where margins are tight and it's not feasible to carry large stocks.

So life can be a lot easier for organised producers who plan and order what they are likely to need well in advance.

‘One percenter’ makes a huge difference to profit

Making more profit is a pretty simple formula. Small improvements in each profit driver can make more impact than you think.

FROM LITTLE THINGS BIG THINGS GROW

At a GRDC Farm Business Update in February this year, Western Eyre Peninsula farmer, Peter Kuhlmann challenged the audience on how much just 1% change in each profit driver could improve the bottom line.



Peter used 6 year average figures from his 14,900ha arable farm, cropping approximately 64% with wheat and barley to test the effect.



Costs for Peter included finance and machinery replacement, so profit was effectively after finance and depreciation, but before tax.

If Peter could improve either his grain price or yield by 1%, or reduce his costs by 1%, then each change would significantly improve profit by 10-11%. If a 1% improvement was achieved in all three factors, profit would increase by a whopping 33%!

MESSAGE IMPORTANT FOR ALL

Peter farms in a tough low rainfall environment that's had 3 poor years. This has made margins very tight. The tighter the margins, the more spectacular the % gains.

If the margin in the above example was \$2.75/ha, then 1% in any factor would have made a 100% difference to profit.

For a higher producing farm with say 2t/ha

yield @ \$300/t or \$600/ha income, and a profit of \$100/t, each 1% change makes a 5-6% improvement in profit or 17% combined.

Though the % improvement is not as great if the farm has higher margins, a 1% improvement of each factor in the above example doubled the dollar gains! The combined improvement in this example is approximately \$17/ha.

If a farm has high inputs, high outputs but very low margins, a 1% improvement in each driver makes an enormous difference to profit \$ and %.

BETTER VALUE CHEMICALS COULD ACHIEVE HUGE GAIN

One way of achieving a significant improvement in your profit is more careful consideration of input costs like chemicals.

For example a farmer aiming to save \$2.50/ha of costs, and spending \$50/ha on chemicals, only needs to trim their bill by 5% to achieve the objective. This means over a cropping program of 2000ha a \$100,000 chemical bill only needs to reduce by \$5,000.

Of course buying quality is just as important as cheaper. 4Farmers chemicals are lower cost and great quality, therefore better value.

4Farmers also backs its products up with expert technical advice to help you to more objectively weigh up more economical generic chemical strategies.

Acknowledgment: GRDC, Peter Kuhlmann

Effect of 1% Change to Each Profit Driver (Peter Kuhlmann, "Mudamuckla" Eyre Peninsula SA)

| Profit Driver | 6 yr Average | Change | | After Change | Profit Change | |
|---------------|--------------|----------|---------------|--------------|---------------|-------|
| | | % | \$/ha or t/ha | | | |
| Price | \$/t | \$249.58 | 1.0% | \$2.75 | \$252.08 | 11.3% |
| Yield | t/ha | 1.1 | 1.0% | 0.011 | 1.111 | 11.3% |
| Income | \$/ha | \$274.54 | | | \$280.06 | |
| Costs | \$/ha | \$250.25 | -1.0% | -\$2.50 | \$247.75 | 10.3% |
| Profit | \$/ha | \$24.29 | | \$8.02 | \$32.31 | 32.9% |



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Supporting Australian farmers since 1994.

