

News

Concern for supply and price uncertainty

Application

Drum volume marks only a rough guide

Chemicals

Diquat 200 for pre-harvest chemicals

Research proves quality Glyphosate essential to best manage resistant weeds: Cheap products cost farmers in the long run!

Independent research conducted by Dr Peter Boutsalis of Plant Science Consulting, has shown that different glyphosate products when applied at the same grams active per hectare rate on glyphosate susceptible and resistant ryegrass, produce significantly different results.

The choice of a good quality Glyphosate product is critically important in controlling susceptible and glyphosate resistant weed populations.

POOR QUALITY = POOR CONTROL

This research tested six undisclosed Glyphosate products.

The results revealed significant differences in control amongst different populations of Ryegrass with varying levels of susceptibility to Glyphosate.

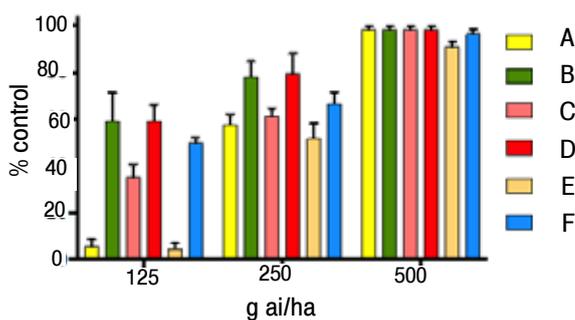
It was demonstrated that poor quality glyphosate can allow weeds with greater levels of Glyphosate resistance to survive. This was especially so at lower herbicide rates.

Therefore what may seem “cheap glyphosate” will turn out to be very costly if it is poor quality and drives resistance.

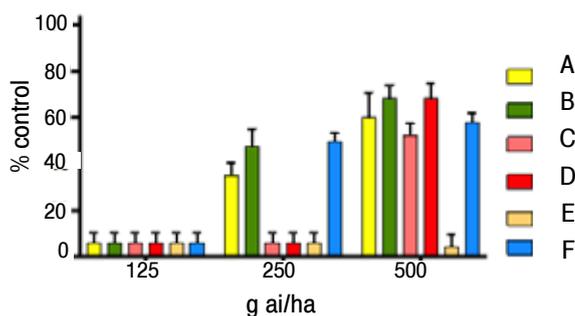


Glyphosate resistant clumps. You can greatly reduce the incidence of this by using a quality Glyphosate rather than a cheap version.

Ryegrass with weak resistance



Ryegrass with strong resistance



ADDING SURFACTANT

Adding surfactant could produce significantly greater control, however improvement was also dependent on selection of a quality surfactant.

Even with the addition of a surfactant, poorer performing products did not always equal the performance of Glyphosate with built in specialised quality surfactant.

OTHER FACTORS

Other factors known to change efficacy of Glyphosate and reported in 4Front Spring 2017 are;

1. Moisture stress – Moisture stressed weeds can increase required Glyphosate rates by up to 10 times compared to non-stressed weeds. Moisture stressed plants

develop thick cuticles that are a barrier to herbicide, resulting in slower uptake and translocation in stressed weeds.

2. Humidity – Low humidity requires increased Glyphosate rates. In trials, 30% humidity required about 60% more Glyphosate compared to 80% humidity to achieve the same level of control.

3. Temperature – High temperature requires higher Glyphosate rates. The difference between winter and summer could be at least double the rates and even then be not enough.

4. Plant Species – As an example, Ryegrass is twice as hard to kill compared to Wheat. Broadleaf species are generally harder than Ryegrass.

Continued Page 4 

Supply uncertainty-see Page 3

4Farmers Products

with cross reference to similar trade name products

Herbicides	Similar Product
2,4-D Amine 625, 750	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 600, 900	Gesaprim [®]
Bromacil	Uragran [®]
Bromox MA	Bromicide MA [®]
Bromoxynil 200	Bromicide 200 [®]
Brown Out	Spray.Seed [®]
Butoxydim 250	Factor [®]
Carfentrazone 240	Hammer [®]
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, 470, 540	Roundup [®]
Glyphosate 875	Roundup Dry [®]
Haloxyfop 520	Verdict [®]
Ipic 240	Flame [®]
Imazamox 700	Raptor [®]
Imazethapyr 700	Spinnaker [®]
I-PYR 750	Arsenal [®]
Linuron 500	Linurex [®]
LV MCPA 570	LVE Agritone [®]
LVE MCPA/ Diflufenican	Tigrex [®]
MCPA 750	Agritone [®]
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	Stomp [®] , Argo [®]
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 [®]
Terbuthylazine 750	Terbyne 750 [®]
Terbutryn	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 [®]

70%
formulated in
Australia
by 4Farmers

Seed Dressings	Similar Product
Fluquinconazole (RP*)	Jockey Stayer [®]
Imidacloprid 600	Gaucho [®] , 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 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 Aquaflow [®]
Mancozeb 750	Penncozeb 750 DF [®]
Procymidone 500	Sumisclex [®]
Propiconazole 500	Tilt [®] , Throttle [®]
Tebuconazole 430	Folicur [®]
Tebuconazole 800	Turbulence [®]
Triadimefon 125	Triad [®] , Slingshot [®]
Triadimefon 500 Dry	Unique to 4Farmers
Triadimenol 250	Bayfidan [®] , Shavit [®]

Insecticides	Similar Product
Alpha-Cyber 100, 250	Dominex [®]
Aluminium Phosphide	Phostoxin [®]
Bifenthrin 100	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
Ammonium Sulphate	
Boom Cleaner	
Citric Acid	
Farm Pro 700	LI 700 [®]
Foam marker	
Metaldehyde Snail/Slug Bait	
Penetrator	Pulse Penetrant [®]
Speedy Spray Adjuvant	Hasten [®]
Sunshade Spray Adjuvant	AntiEvap [®]
Turbo Charge	Supercharge [®] , Uptake [®]
Wetter 1000	

Trace Elements
Zn Chelate EDTA 14.5%
Cu Chelate EDTA 14.5%
Mn Chelate EDTA 14.5%

*RP – Registration pending

Brace yourself for supply uncertainty and higher prices

Farm chemical supplies could be in for a torrid time as a regime of tougher environmental policies that are shutting down factories and curbing production is set to continue in China.

The Chinese government reports the value of agricultural chemical exports last year grew 20.4% to US\$6.76B though quantity only increased around 6% to 1.4676M tonne.

In general, last year's chemical prices were higher, and supply of some products was difficult, if not impossible to obtain.

At best some suppliers averaged rising prices and drew on old stocks.

This season could see things worsen with agchem suppliers suffering the full brunt of higher prices and disrupted supply with no reprieve presently foreseeable.

2+26 POLICY NOW EQUALS 80

The centre-piece Chinese environmental policy, "2+26" that tightly controlled air pollution around 2 major cities (Beijing and Tianjin) and 26 cities in the surrounding region is to be expanded to include the province of Jiangsu that includes Shanghai, as well as Zhejiang and Anhui province. It now includes at least 80 cities.



SHUT-DOWNS AND REFORM

There are more planned shut downs and/or reforms throughout the major chemical producing provinces like Jiangsu, Shandong and Zhejiang. High level polluters, uncompetitive producers and companies not significantly contributing to local economies will all be targeted in the reform process.

As an example, Shandong is a major chemical production province with more than 9,000 chemical companies. Of that total, 37% are medium to large.

Linzi, a city within Shandong has 118 chemical companies, of which 13 have to transform into non-chemical companies, while the remainder will be shut down.

Glyphosate continues to be under attack

The herbicide used more widely in the world than any other product, Glyphosate, is under attack due to claimed health concerns.

CALIFORNIA LAWSUIT

Just recently a jury in California found Monsanto liable in a lawsuit filed by a man who alleged the company's glyphosate based weed killers caused his cancer. The court ordered \$289 million in damages.

The case of school groundskeeper, Dewayne Johnson, was the first lawsuit to go to trial alleging glyphosate causes cancer. There are potentially 5,000 similar lawsuits that could follow across the United States.

BRAZIL SUSPENSION

In Brazil, a federal judge has had the use of products containing glyphosate suspended. The product is widely used on soybeans of which Brazil is the world's leading exporter.

All new and existing registrations will be suspended within the next 30 days, until the government re-evaluates their toxicology.

Brazil adds to many jurisdictions where Glyphosate is under a cloud.

WHY CONCERNS?

In 2015 a World Health Organisation (WHO) affiliate, the International Agency for Research on Cancer (IARC) released a report flagging Glyphosate as "probably carcinogenic to humans" and linked it to non-Hodgkin lymphoma and other hematopoietic cancers, as well as other health disorders.

The IARC category of "probable carcinogenics" includes red meat, food fried at high temperature and sleep disruptive shift work. Lower than "known carcinogenic" category includes alcoholic beverages, processed red meats and smoking.

However, the IARC concerns have been contradicted by two other WHO affiliates. Nor has it been so far supported by any substantive evidence or studies. Various independent authorities around the world including the Australian Pesticides and Veterinary Medicines Authority (APVMA) have continued to endorse Glyphosate as safe.

RESPONSIBLE USE

The science on the subject is far from clear cut. Arguably the most dangerous parts of the herbicide might not be the active but other ingredients like tallow amine surfactant. Therefore longer term we shouldn't necessarily be concerned of Glyphosate being banned, but maybe certain formulations.

Another significant factor is the IARC in their report was focused on "hazard" not "risk". If hazard dictated our public use, then swimming pools would have been long banned for the death of so many children. Risk is the critical factor, which is why you put a fence around a pool.

Likewise with Glyphosate and all pesticides, 4Farmers urges all users to handle these chemicals with care. Responsible use and treating all pesticides with the right respect is more likely to keep everyone, and the environment safe, thus more chance we can maintain access to these products.

Reference: 4Front Autumn 2016

➔ From Page 1

Research proves quality Glyphosate essential to best manage resistant weeds: Proof that 'buying cheap' costs farmers in the long run!

HOW GLYPHOSATES VARY

Salts

In general, the salt does not make a significant difference to performance, or is marginal at best.

Surfactant

The most significant difference in Glyphosates applied at the same active ingredient rate is the type and amount of surfactant.

The traditional types are tallow amines which are used in many 450g/L glyphosates. A good quality version will contain about 10-12%.

There are a multitude of other quality synthetic surfactants that can give better performance and compatibility. Better quality products such as 4Farmer's Glyphosate 470, contain approximately 14% wetter.

Some of the poorest quality glyphosates contain very low levels of cheap alkyl polyglucoside (APG) surfactants, sometimes less than 3%.

The formulation of chemicals is tightly held commercial knowledge and there is no requirement to publish it on a label.

Therefore you are unlikely to find the

surfactant content disclosed especially when only 3% APG is included.

Sadly, in independent tests carried out last year on behalf of 4Farmers (4Front Aug 2017) products were found to have less than 3% APG surfactant.

If you want to test Glyphosate for surfactant it is difficult to find a lab, however, 4Farmers can offer some recommendations.

For more information on herbicide resistance testing, visit www.plantscienceconsulting.com.au

References; Boutsalis et al. 2018

CAUTION
KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING



GLYPHOSATE 470
Herbicide

ACTIVE CONSTITUENT:
470 g/L GLYPHOSATE present as the isopropylamine salt

GROUP M HERBICIDE

A non-selective foliar herbicide for the control of a wide range of annual and perennial grasses and broadleaved weeds as per the Directions for Use table.

READ THE ATTACHED INFORMATION THOROUGHLY BEFORE USING THIS PRODUCT

<small>NET CONTENTS</small>	<small>APVMA Approval No.</small>	4FARMERS PTY. LTD.
<input type="checkbox"/> 20L	5551120L_0606	A.C.N. 067 443 485
<input type="checkbox"/> 110L	5551110L_0606	1/70 McDOWELL ST. WELSHPOOL,
<input type="checkbox"/> 120L	55511120L_0606	WESTERN AUSTRALIA 61102
<input type="checkbox"/> 200L	55511200L_0606	PH: (08) 9356 3445 FAX: (08) 9356 3447
<input type="checkbox"/> 220L	55511220L_0606	
<input type="checkbox"/> 1000L	55511000L_0606	

Your best value Glyphosate!

Independent testing conducted last year by Eureka! AgResearch proved 4Farmers Glyphosate 470 consistently performed better than all other Glyphosates and was best value.

Across testing with Ryegrass and Wild Radish, 4Farmers Glyphosate 470 provided around 10% better efficacy than most 450g/L tallow amine products and around 20% better than Glyphosates found to contain APG when all were applied at the same rate of active ingredient.

Eureka testing was consistent with other independent trials which found that adding surfactant can help poor quality Glyphosates, but are still poor value and are a risk of failure. It is safer to buy a good quality Glyphosate with a built in quality surfactant.

In addition to greater efficacy 4Farmers Glyphosate 470, has also proven to be more robust when mixing with products like Amine, and flowed more easily in cold conditions.

Sinochem and ChemChina to merge

In other China news - state owned companies, Sinochem and ChemChina are about to merge to form the world's largest chemical company with annual revenue of about \$136 billion.

ChemChina, that recently purchased Syngenta for \$43 billion, had \$58 billion in revenue last year, and a profit of \$370 million. Sinochem had a profit of \$2 billion and \$78.3 billion in revenue.

China has been consolidating its big state-owned enterprises, many of which are laden with debt, since at least 2015 in a bid to boost efficiency and curb over-capacity.

Energy, mining, railways, shipping and steel are among the state-run sectors



Mergers are running thick and fast in the farm chemical manufacturing industry-source *The Economist*

that have already been streamlined, to produce new national champions that Beijing hopes can better compete internationally.

The recent wave of consolidation is a major shift from China's earlier approach of breaking up unwieldy state-

run enterprises in the hope of spurring domestic competition and making state firms more competitive and innovative. That strategy proved mostly unsuccessful.

Internationally, the merger of ChemChina and Sinochem comes in the wake of other chemical mega mergers of Dow/Dupont, and Bayer/Monsanto.

With chemical and seed giant BASF, these 4 entities are estimated to produce over 70% of the world's chemicals as well as controlling a significant amount of seed sales and IP.

Australian farmers should naturally be concerned about the concentration of supply and reduced competition.

Source; *Wall Street Journal* 2 July 2018

Chemical drum volume marks are only an approximate guide

When a farmer buys a drum of chemical and the volume marks on the drum indicate the quantity is less than the quantity they have paid for, they understandably might think they are being ripped off.

However, volume calibrations on these drums are notoriously inaccurate. The drums are not engineered to give a precise reading of volume, they are only approximate indicators.

The most accurate way to fill a chemical drum to a given volume is by knowing the specific gravity of the chemical concerned and filling it by weight.

PROCESS

For example if an operator was filling a drum of Glyphosate 540, the chemist would first advise the operator of the specific gravity. In this instance the specific gravity of Glyphosate 540 is about 1.372kg/L.

This means to fill exactly 1000L of Glyphosate 540, the operator will zero the scales with the drum on it, and fill until the weight is 1372kg.

If we were to double-check the net weight after filling we have to allow for the drum weight. The weight of an IBC is approximately 58kg and a 110L drum, with probe is 8.5kg.

EXAMPLE

The markings on a new 1000L IBC of Glyphosate 540 below suggests it maybe about 35L short.

However, on accurately calibrated scales the gross weight is 1438kg. After 58kg is subtracted for the IBC tare weight, the net weight of the contents is 1380kg.

This means it is actually 8kg heavier that it need be, or 5.8L overfilled!



This IBC looks approximately 35L under filled but is actually 5.8L overfilled.

Nufarm protects its profits at the expense of Aussie farmers!

In March it was announced that Nufarm had successfully applied to The Australian Anti Dumping Commission for a continuation of anti dumping measures plus a 35% duty on 2, 4-D products from China.

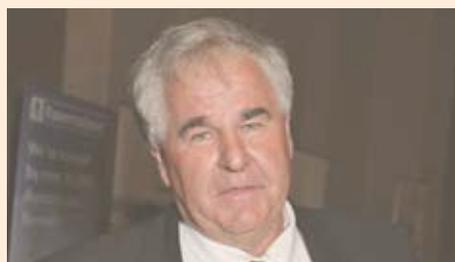
The duty applies to all 2, 4-D fully formulated products like Amine 625 and Ester 680, as well as the active ingredients for manufacture.

We at 4Farmers regard this move as simply Protection of Nufarm at the expense of farmers.

There are other sources of 2, 4-D products, but the move effectively negates significant Chinese competition. The result will be higher prices.

To claim dumping, it only needs to be established that the same products are being sold at a higher price in the country of origin.

Exports to Australia might still be above cost of production and profitable to the Chinese exporters. The recent import prices from China have actually been similar to other sources.



By Phil Patterson, Managing Director

In my opinion this should be treated as a domestic issue for China. Not something to penalise Australian farmers for.

Nufarm is taking advantage of trade rules for its own self benefit.

A further aspect of this issue was the enquiry process followed by the Commission. It could have been done better.

The enquiry was poorly advertised and there was little consultation.

The Commission selectively approached a couple of importers most of whom it wasn't in

their interests to reply. It shouldn't have been difficult to directly notify all importers.

The Commission claimed a lack of cooperation from most Chinese exporters. I suspect that was probably more a reflection on the communication process.

Essentially the Commission's decision was largely based on Nufarm's report.

There is suspicion in the industry that the data in their report was a distortion of the real situation to suit their own agenda.

We think that along with other market issues in China it just adds to the bad news.

4Farmers has saved farmers millions of dollars with the competition it has brought to the market. Bringing ethics into the farm chemical supply industry was the whole purpose of our establishment.

We see the issue as regrettable that the profits of a large multinational company take precedence over the profitability of Australian farmers.

Pre harvest application of Diquat 200 - A useful management tool

A pre-harvest application of a non-selective herbicide such as Diquat 200 is an excellent tool for the following reasons;

- Controls seed-set of immature weed seeds
- Manage late season green weeds that are problematic for harvesting and a suitable grain sample
- Desiccation of crop to even crop ripening and accelerate time to harvest

DIQUAT PREFERRED

Diquat is a non-selective chemical registered for pre-harvest use on all main broad acre crops. This includes Malt Barley, although growers are advised to double check receival standards with their grain buyers.

A significant technical advantage of Diquat is that when the crop is ready to be sprayed, the optimal control of weed seeds is more likely to have passed for Glyphosate but still could be satisfactory for Diquat.

Diquat also offers the opportunity to rotate chemical groups away from Glyphosate thus managing resistance.

Diquat may be regarded by some as being solely a broadleaf killer, however, its control over grasses is in fact comparable to Paraquat.

PARAQUAT AND GLYPHOSATE

Off-label illegal use of herbicides, especially pre-harvest, runs the risk of detection by grain receivers and breaching maximum residue limits (MRLs).

Breaching MRLs can have serious consequences for growers.

The chances of being caught out are increasing because the scrutiny for contamination detection has risen.

Paraquat is not registered for any pre-harvest application in any cereals or oil seed crops. This includes any use over the crop or under cutter bars at windrowing.

Registered Pre-harvest Use of 4Farmers Products by Crop

Crop	Diquat 200	Paraquat 250	Glyphosate 540
Wheat	Yes	No	Yes
Malt Barley	Yes	No	No
Feed Barley	Yes	No	No*
Oats	Yes	No	No
Canola	Yes	No	No*
Lupins	Yes	Yes	Yes**

*Certain other Glyphosates products are approved

**Yes by way of APVMA permit 81595

No Glyphosate product is registered for use in Malt Barley or Oats.

DIQUAT APPLICATION

Diquat 200 label spray rates start from 1L/ha on Cereals, 1.5L/ha Canola and 2L/ha on Lupins. Rates for all crops range up to 3L/ha.

Recommended crop timings of Diquat pre-harvest spraying are;

- Cereals at full maturity and the crop ready for harvest.
- Canola when 70% of the pods are yellow and the seeds are brownish/bluish and pliable. Direct harvesting can be done 4 to 7 days after spraying.
- Lupins when the crop has reached maturity and 80% of leaves drop.

Diquat can be sprayed by air but care should be taken with drift.

Control of Ryegrass Seed

Control of viable seed will be dictated by weed stage when the crop is ready to be sprayed.

The ideal time for Ryegrass control with Diquat is when flowering is finished, but still green and the seed doughy.

Over 4 years of application in Canola, WA Dept of Agriculture trials from 2010 to 2013 at Katanning WA, viable Ryegrass seed

production was reduced by 65% and 88% in two of the years, but nothing in the other two years. The variable results were presumably due to late application but the effort was sufficient to give worthwhile results in two of the years.

Wild Radish

Wild Radish control is best after flowering and in the 21 days before the embryo is formed. Though this stage will have probably passed for some pods at time of spraying, useful control will still be achieved on staggered late maturing pods. In any case, surviving viable seed can be softer and thus easier to manage in future control.

Another benefit of Wild Radish desiccation can be the elimination of green material to pass receival standards, or if the grain is to be saved for seed.

Gases emitted from the drying green radish pod are toxic to cereals, lupins and other grains. The impact will depend on the level of contamination, temperature and time that seed is stored with green radish.

Results of a WA Ag trial found;

- Lupin seed lost all viability at 10% contamination after 5 days storage
- Cereals reduced viability 40-100% with 5% contamination stored for 1 week.

Reference; WA Ag Protecting WA Crops Oct 2017

If you haven't phoned 4Farmers for your chemicals you haven't been trying to get the best deal!

Next time you want value for money chemicals talk to 4Farmers.

- Good quality product at a good price
- Readily available or delivered on farm
- Australian made product
- Technical advice

Call now 1800 038 445
www.4farmers.com.au

