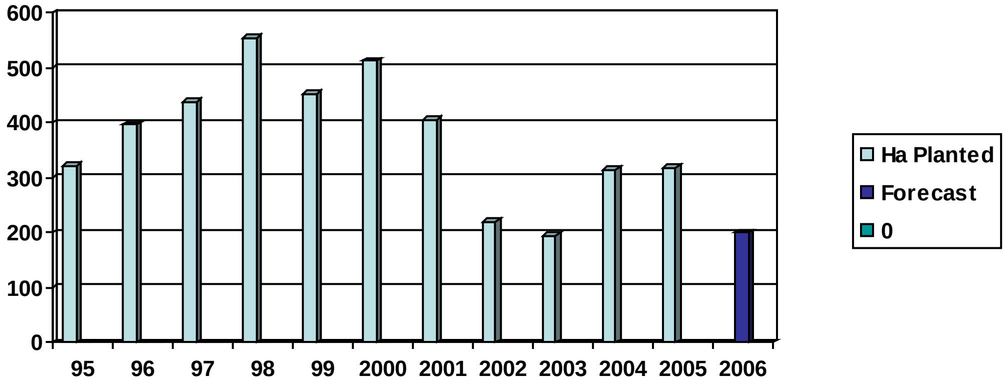
To understand the trends in picking capacity for the Australian crop we must first quickly look at some historical data to understand what are the factors and influences that have shaped the demand for services to the cotton industry, specifically the picking of the crop.

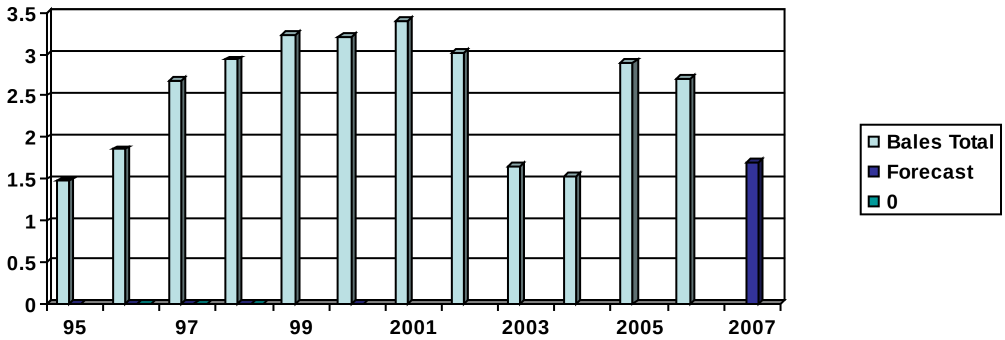
Cotton Statistics

1. Australian Cotton Area – Total area planted (,000 ha year planted)



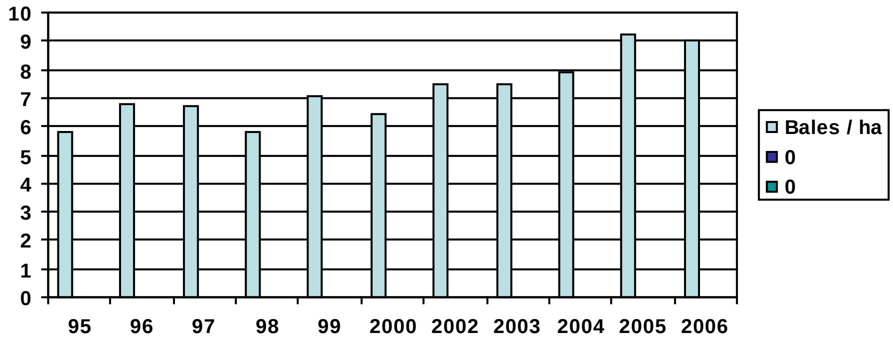
Development of the cotton industry through the 1990"s was such that the planted ha's went from 321,000 ha's in 2003/2004 to 512,000 ha's in 2000/2001. This growth was also on the back of a string of good water years. The dip from 2001 is a reflection in the water availability. With 2004 & 2005 plantings showing how responsive the industry is to water availability – if the water is available, the ha's will be planted.

2. Australian Production – (227 kg bales, year picked)



The size of the Australian crop increased enormously during this time span as well. With 1993 being close to 1.5 million bales, by 1998 – 2000 the average crop size was 3.2 million bales. This was a better than 100% increase in crop size in 6 years. Again the crop size follows the water availability, with a dip due to poor water allocations. But with a sharp rise as water becomes more available.

3. Australian Yields – (bales/ha 227kg bale)



Over this time, as the area and crop size increased and then varied due to water availability, there has been a constant improvement in the yield of the Australian cotton crop over time. 2005 ACIC press release, Richard Haire Chairman ACIC – "Australian growers continue to set new benchmarks and have lifted yields by 30% compared to 10 years ago, through research and technology, the use of appropriate varieties for our conditions and worlds best farming practices".

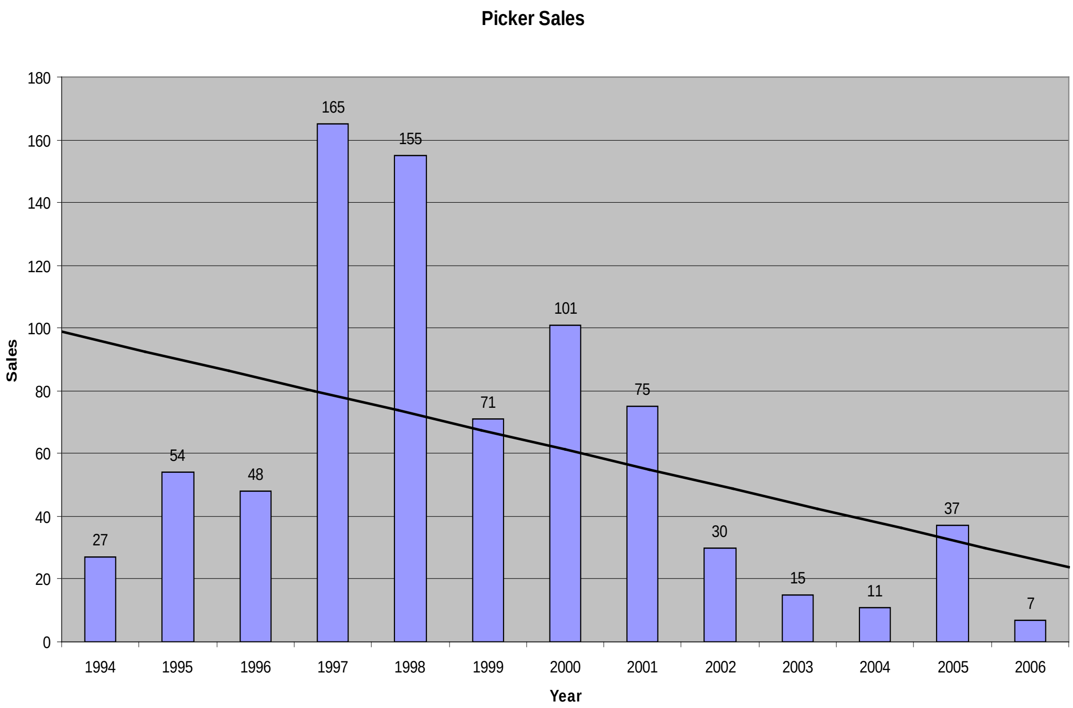
The improvement in varieties through the Australian breeding programs has without a doubt contributed enormously to the gain made. Add to this the improvements in crop agronomics we have seen average yields move from 2.5 / 3 bales per acre to 3.5 / 4 bales per acre, with 4 to 5 per acrre bales now being common place. Growers now have the expectation for yields to range from 4 bales per acre and up.

Demand for services

With the increased cotton plantings, there is the creation of increased demand for services to cater for the larger crop size. As an example, during the 1990's new cotton gins were being built, land development and earthworks was continual, and there was a general growth in the services to the industry.

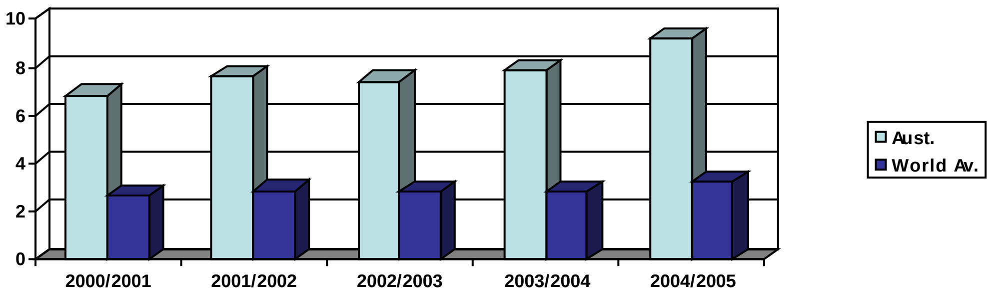
Obviously there had to be an increase in the capacity to pick the crop. This increase in capacity is best reflected in sales of machines into the market over the corresponding time.

The demand to pick the crop is created by the growers need to pick the crop in a time frame that they deem to be acceptable. This picking window is between 14 to 21 days depending on area planted for individual enterprises



The Machinery

In 1949 the spindle picker was invented, and started with a single row machine. The natural progression saw it become a 2 row machine. The handling of this picked cotton was very manual with the cotton being dumped loosely into trailers and manual labour used to stomp it down in the trailer. In 1971 The module builder was developed and improved the capacity to handle the picked cotton. The 2 row picker was developed to become a 4 row picker and picking capacity continued to improve. Ground speed of these machines also increased from 1mph to 4mp as the machines got bigger and faster at the same time. Module builders moved from 32ft, to 36ft, to 40ft in length to be able to keep pace with the pickers and to transport the cotton more economically over longer distances to the cotton gins. So systems improved as increased picking capacity was demanded to maintain timeliness of picking. The adoption of the 6 row machine has not been successful in Australia. This is primarily due to the high average yield of the Australian crop.



Both John Deere and Case are US based companies, with the machines developed in a country whose average yield is half that of Australia. Post 2000 machinery capacity has plateaud in Australia.

The Trends

Factors of influence

- The area planted. We have already determined that this is very seasonal, primarily being affected by water availability. The cotton price also has an influence , but to a lesser degree.
- Yield. We have already determined that advances in plant breeding and agronomic practices has kept the Australian grower at the fore front in world production in term of yield, with the Australian crop yields increasing 30% over the last 10 years. The net result of this is a greater number of bales to pick per unit area.
- Crop Maturity time shorter. With the improvements in variety, harvest aids and general agronomy the time between planting and defoliation has decreased over time, bringing the crop in earlier to be picked. Add to this the picking time between the Northern and Southern regions narrowing, and you now have a much shorter picking window.

The industry expectation now is to pick more bales of cotton in a shorter period of time?

Who Picks The Crop

- Currently, approximately at least 70% of the Australian crop is picked by contractors and 30% by growers only.
- Cotton Consultants Australia carry out an annual grower survey, and results from this survey say that 50% of growers use contractors only to pick their crop. The remaining 50% do own and use their own machinery to pick their crop. But of this portion, 50% of them still use contractors as well to pick the crop.
- Contractors by and large will pick more cotton per hour, and for longer hours per day than a grower will.

The Grower Trend

Of all the operations that are carried out on a cotton farm there is one operation that is primarily outsourced by the grower and that is the picking of the crop. The reasons for this are

- Can’t justify the capital investment
- Don’t want the liquidation risk
- Don’t want the operational and labour issues
- Already feel burdened with compliance issues, don’t want any more

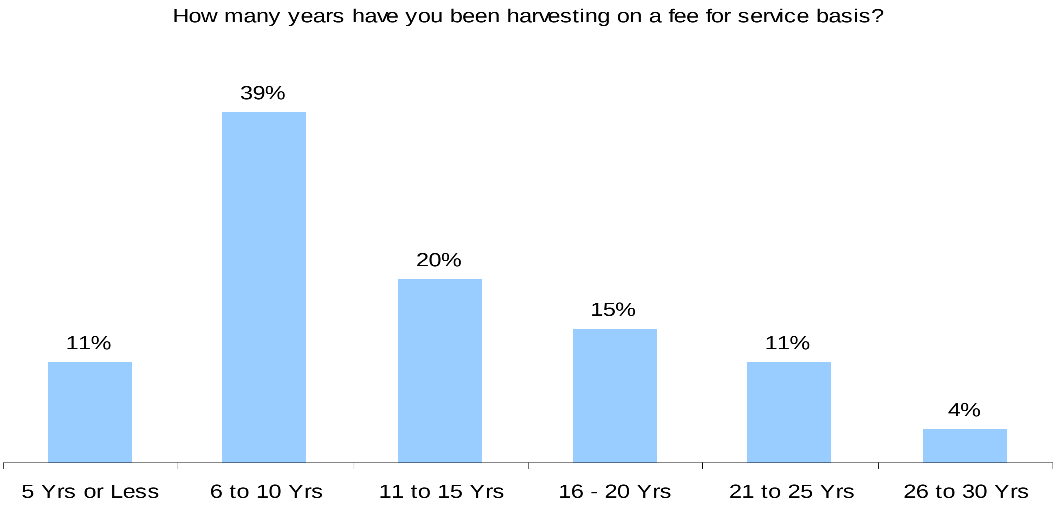
Contracting out the harvesting operations is an increasing preference by the grower. The grower trend is not to invest in cotton picking machinery. Over the last 10 years grower only picking capacity has diminished greatly.

The Contractor Trend

With at least 70% of the Australian crop being picked by contractors it is important to understand what is happening to this segment of the industry as they do the bulk of the picking. The owners of these businesses are typically owner operators, spread from Hillston NSW in the south, to Emerald QLD in the North.

In October 2005, in response to a need to have professional representation in order to address many issues facing this group of business operators within the cotton industry the Australian Cotton Pickers Association was formed. One of the first tasks was to do an industry survey of the contractors to determine the direction that this important segment of the industry was heading. This survey was compiled by the Institute for Rural Futures at The University of New England.

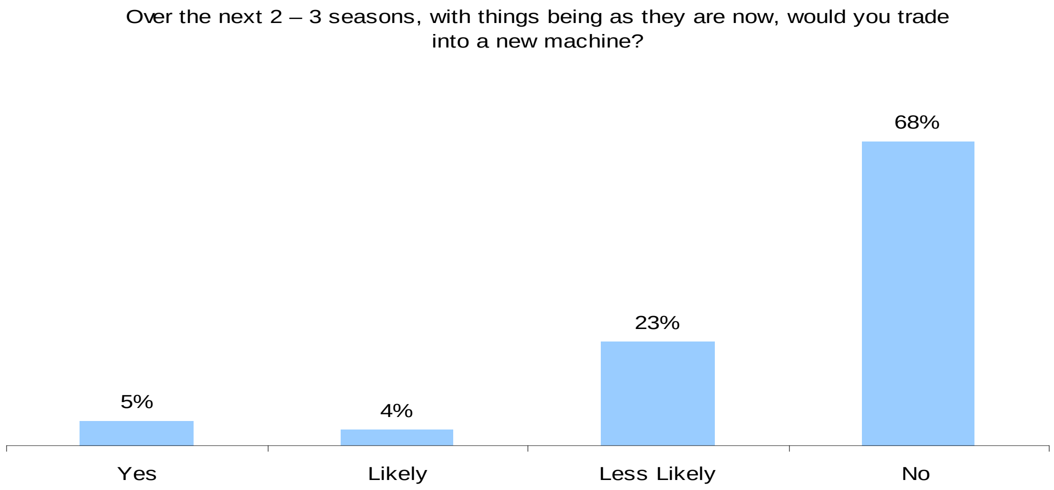
1. How long have you operating



With 59% of respondents falling in the 6 – 15 year range and then a further 30% in the bracket that have been operating longer it clearly shows that there is a very low number of new entrants into this industry. Simply put the number of operators exiting this type of business is greater than the numbers of new entrants. So the average age of the operators is getting older – the skills base is aging – these older participants will retire.

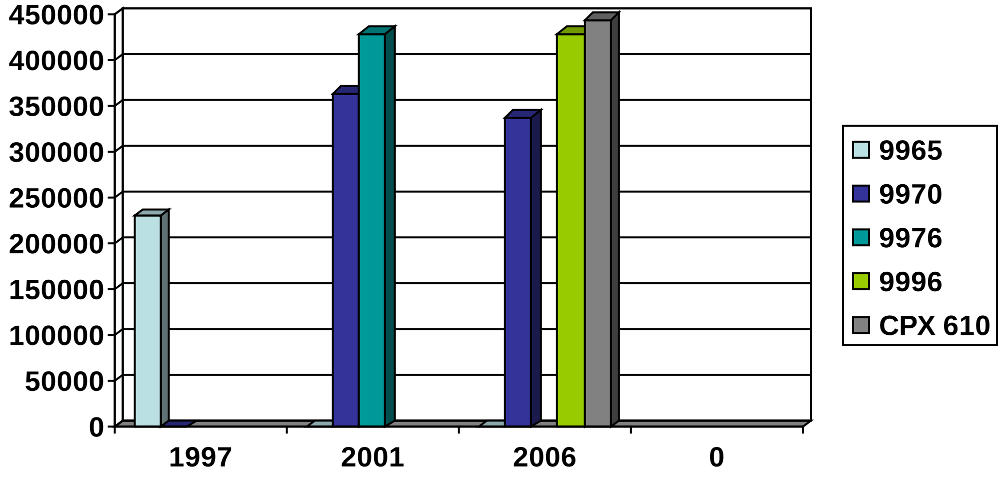
2. Upgrading, will it happen

Upgrading of machinery is a normal part of most farming operations planning cycle. In the business of contract picking, upgrading of machinery is also part of the normal planning cycle. For the Australian cotton crop this is the reinvestment back into the fleet to keep the capacity to pick the crop, in the time frame demanded by the industry.



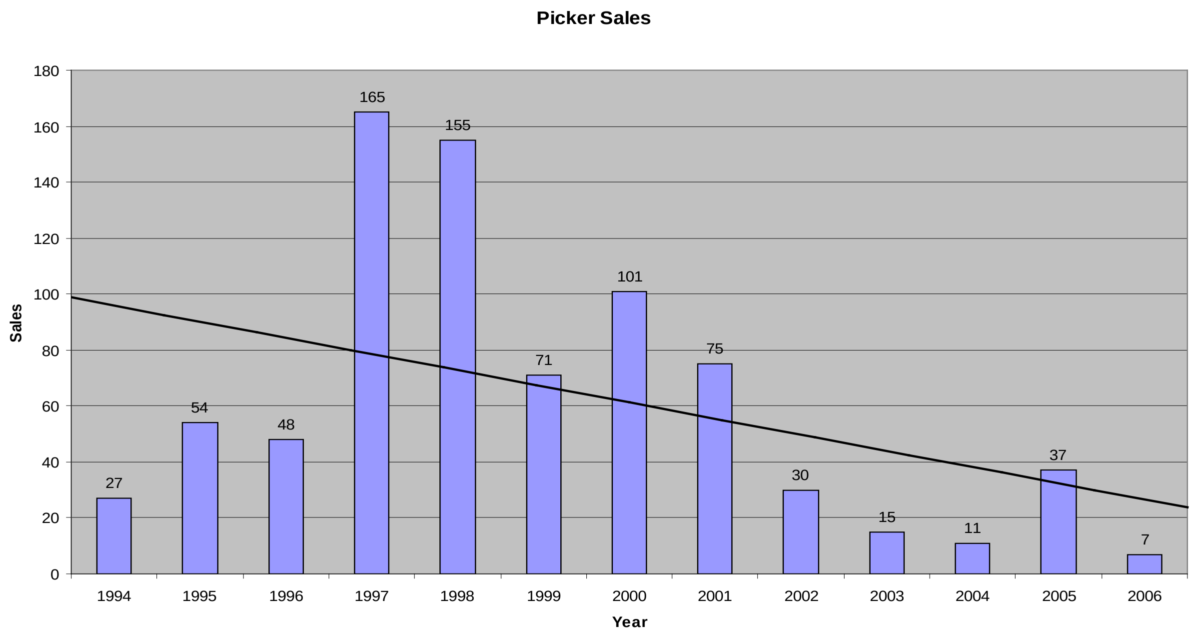
There is a clear intention here, and that is that 91% of respondents do not intend to trade up to a new machine, they will not reinvest! Some of the key reasons for this attitude are

- Replacement cost of machinery too high
- Overall size of large capital investment too high
- Poor ROI
- Labour market issues (lack of available labour, and poor skills base)
- Mounting compliance issues with OHS and Oversize movements.
- Picking window too short – limiting earnings capacity of investment

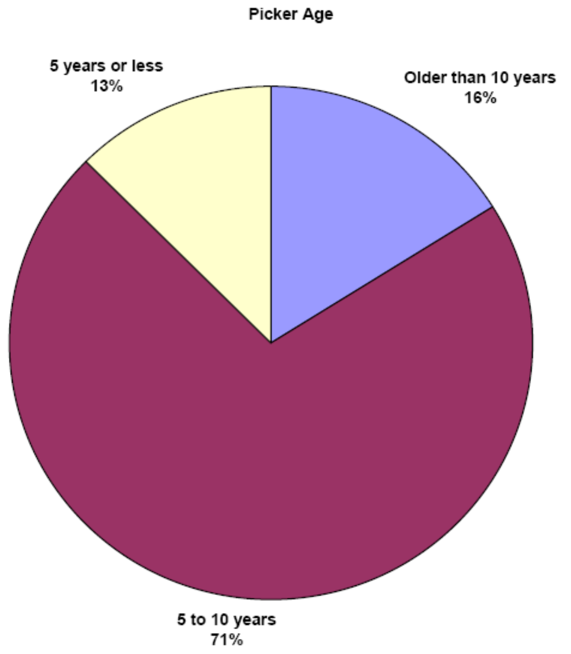


With a new picker costing upwards of $430,000, two new module builders at $220,000, a new boll buggy at $65,000, then two tractors, two vehicles and a service truck to support this, another $100,000, an investment of more than $800,000 would be expected by a new entrant.

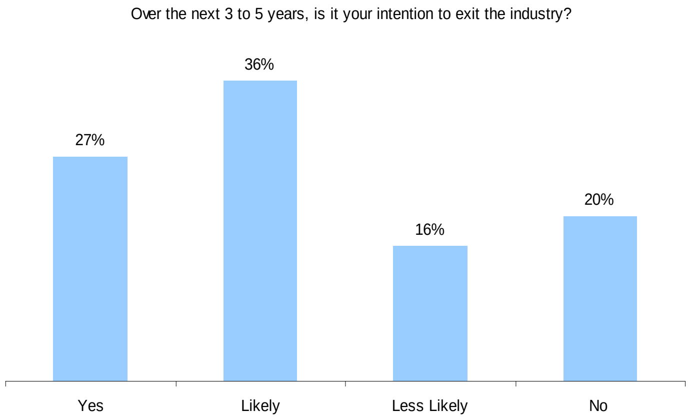
We know this up grading is not happening as the sales for new machines is a direct result of the upgrade cycle and this is not happening. The trend line for picker sales clearly shows the resistance to purchase new machines by the current operators – grower and contractor alike.



These purchases also give a picture of the age of the fleet, and the message here as shown by the pie chart below is that the age of the fleet is getting older. With little reinvestment back into the fleet the 5years or less portion diminishes and the older than ten years increases.

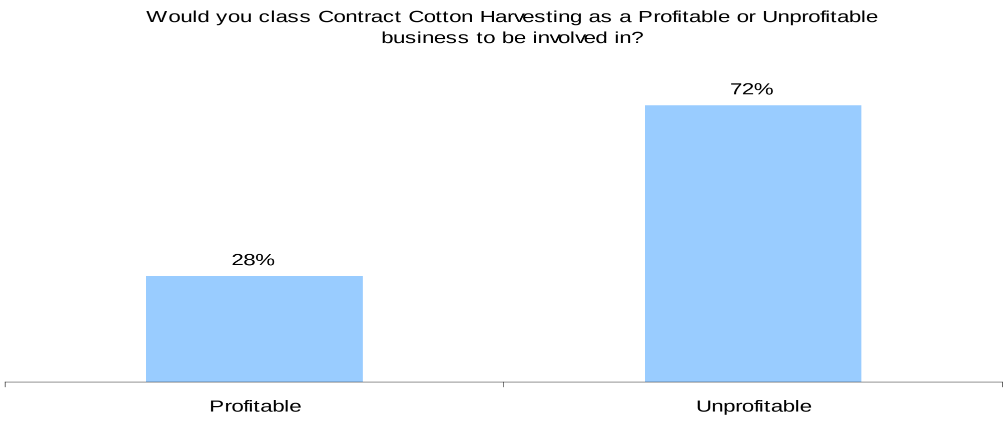


3. Who will stay in the Contract Picking Industry
With little intention to upgrade, the age of the machinery getting older, the earnings capacity of the investment decreasing, it is clear that economics is forcing change.



Again a clear trend is showing, and that is that a large portion (63%) of the respondents have the intention to exit the business of contract picking.

4. WHY
What is the primary reason for this intention.



In summary the contractor trend is not to reinvest into new machinery, for exactly the same reasons the growers moved away from owning the machinery in the first place

- Difficult to justify costly capital reinvestment
- Problems with poor values of assets – liquidation problems
- High operation and maintenance costs – cash flow issues
- Labour market issues
- Mounting compliance issues
- Diminishing earnings capacity of investment

The present

The key points here are that investment is not happening, not by the grower, and decreasing by the contractor. The equipment upgrade is not happening. Operators have slowly been exiting over the last 3 – 5 years. But presently picking capacity has been able to equal industry expectation as the reduced planted acres of the last 3 – 4 years has camouflaged equipment and capacity drain.

The Future Trends

Increasing crop yields through improved plant breeding, improvement in GM traits, improvements in general agronomy and adoption of new technologies are an expectation of the cotton industry. Large amounts of industry money are reinvested to ensure the Australian Cotton industry maintains its viability to compete on the world market. These same gains also create a smaller window of opportunity to pick the Australian crop. It is good to have the crop ready for harvest as quickly as possible, but the reality is each machine can only be in one spot at one time. The Australian picker fleet is aging, but more importantly, currently there is limited equipment upgrade happening and future upgrades being unlikely. Also there is little actual improvements to be made in machinery capability, as improved yields are matching gains in this area. The ongoing labour market issues will continue to prevail and when the dams do fill and the large cotton crop is planted this issue will be a problem for all employers in the industry. The ongoing compliance issues will only increase not decrease.

The challenge for the future will be to manage all these issues to maintain the ability to get the crop off in the time frame expected by the industry. In addressing the question "trends in picking capacity" the table below highlights **the picking capacity for the Australian cotton crop is still exclusively a function of the number of machines available**. There are a number of secondary issues that relate to performance of picking capacity for example age of machine and quality/availability of labour.

Harvest	Crop	Total	Yield		4 Row Picking Units	13 year life span			Bales /	ha/
Year	Area ha's	bales	Bales/ha		New	7.5% Scrapped	Total		Machine	Machine
A	B	C	D	E	F	G	H	I	J	K
							920			
1994	285,000	1,476,000	5.18		27	69	878		1681	325
1995	213,000	1,476,000	6.93		54	66	866		1704	246
1996	321,000	1,853,000	5.77		48	65	849		2182	378
1997	396,000	2,676,000	6.76		165	64	950		2815	417
1998	438,000	2,932,000	6.69		155	71	1,034		2835	424
1999	553,000	3,227,000	5.84		71	78	1,028		3140	538
2000	452,000	3,202,000	7.08		101	77	1,052		3045	430
2001	512,000	3,404,000	6.65		75	79	1,048		3249	489
2002	404,000	3,010,000	7.45		30	79	999		3013	404
2003	220,000	1,650,000	7.50		15	75	939		1757	234
2004	195,000	1,531,000	7.85		11	70	880		1740	222
2005	314,000	2,900,000	9.24		37	66	851		3409	369
2006	318,000	2,700,000	8.49		10	64	797		3388	399
2007	195,000	1,700,000	8.72		10	60	747		2275	261
2008	260,000	2,250,000	8.65		20	56	711		3164	366
2009	320,000	2,900,000	9.06		20	53	678		4278	472
2010	400,000	3,600,000	9.00		20	51	647		5564	618
					30	49	628		0	0
					40	47	640		0	0
					50	48	630		0	0
					20	47	613		0	0
					50	46	635		0	0

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Column A = Year of harvest Column B = Crop ha planted Column C = Total bales harvested -227kg bales

Column D = Australian crop yield - bales/ha. Column F = New units sold into paddock, Column G = Losses to system with 7.5% attrition rate, Column H = Running total, Column J = Bales thru-put / machine, Column K = Ha / machine

The harvest of 2000 was a 3.2 million bale crop, historically large for Australia. Based on 1052 available 4 row units to harvest this crop the thru put per machine was 3045 bales for 430 ha of area picked. Compare this to a previous harvest , 1996, where 849 4 row units averaged 2182 bales thru put for 378 ha picked. Now compare to the harvest of 2005 where 851 4 row units (similar machine numbers to 1996) had to handle a thru put of 3409bales per machine (more than the 2000 harvest), for 369 ha picked (less ha per machine than both 1996 and 2000). We currently have a situation where the volume of cotton to be picked per machine is increasing, but the area and time to achieve this is decreasing. When the economic viability of these machines is considered, irrespective of who owns them, this trend is significant when the important question of how will the next 3.5 million bale crop be picked if the industry has an expectation of high average yields, wants the crop off in 6 -7 weeks total and expects the machines to do the job to be there?

Consider –
How has the contractor been paid historically – on a flat per acre basis?
The higher thru put per machine means increased repairs and maintenance cost. With an aging fleet, fatigue, because machines are being worked hard at maximum capacity, becomes a major problem (Peel Valley Wee Waa, reported 15 transmission rebuilds for the 2006 harvest).

High volume thru put means less acres per hour, so less acres picked per machine as the operation has to slow down to process the pure physical volume of product. As the operation slows down the labour and operational cost increase and affect the profitability of the operation in a negative way. This decreases the return to the operator, puts more pressure to them pick more acres per day, puts more pressure on the labour force and the negative spiral continues. The operator now has less time to achieve a sustainable outcome in terms of total work done for one season. This again puts pressure on them to do longer hours, puts more pressure on the work force and again the negative spiral continues. This does not create a business environment that enables long term sustainability and as such operators are not looking at this industry as one to reinvest in because it offers only a poor reward for risk taken in terms of financial return and providing for the family and future of the operators.

The industry position?
In considering the position of the cotton industry over all, a few key questions have to be raised?

1. When we return to full water status – will there be wall to wall cotton plantings. Historical trends say yes.
2. Can the industry afford for this crop to sit on the bush?
3. Is the grower prepared to take a longer period to pick the crop?
4. Can the grower afford to take a longer period of time to pick the crop?
5. What is the risk to crop quality down grade
6. Where will the labour force come from?
7. Will the grower move back into the market place and reinvest – no?

This where there is a clear issue for the cotton industry. At some point in the future we will return to a full dam scenario, with good water allocations for a few years. Under normal forces of supply and demand this would be enough to create the demand to purchase and trade machines as has happened in the past. But there is very strong buyer resistance by all parties to do this as shown by the data and survey results. With 70% minimum of the Australian crop being picked by the contractor their clear resistance to equipment upgrades will have a big impact on future picking capacity. As the older operators retire the industry looses knowledge and experience. There is not the younger generation coming through due tho the prohibitive cost of entry and prospects of poor returns anyway.

The Australian Cotton Pickers Association
In forming the Australian Cotton Pickers Association, the members recognised the issues they as business operators faced and needed to get industry representation to start to work their way through them as a professional body. The industry survey compiled by the Institute for Rural Futures at the UNE has bought the issue of machinery trends out into the open. In addressing this, the ACPA realised that the issue of profitable business enterprises and sustainable equipment upgrades go hand in hand and ultimately affect picking capacity. From the profitable business side of the equation, supply and demand in the marketplace plays a major part in determining rates for the contractor. One area of this that the ACPA has addressed for the benefit of the industry is to have put forward a yield based payment scheme that ensures a sustainable return to machinery for operators as the yield of cotton increases. An example of this yield based scheme is attached.

Australian Cotton Pickers Association

Yield based payment scheme Calculator

A	B		C		D	E	
Gross kg of Seed Cotton Picked / acre	$$ earned by increment @ 3.00 Cents per kg		Total Price / acre Including a BASE $77.50 farm gate price		Yield in Bales / acre @ 38.9% Turnout	Cost / bale to grower	
1,450	$	43.50	$	121.00	2.48	$	48.70
1,500	$	45.00	$	122.50	2.57	$	47.66
1,550	$	46.50	$	124.00	2.66	$	46.68
1,600	$	48.00	$	125.50	2.74	$	45.77
1,650	$	49.50	$	127.00	2.83	$	44.92
1,700	$	51.00	$	128.50	2.91	$	44.11
1,750	$	52.50	**$**	**130.00**	**3.00**	$	43.35
1,800	$	54.00	$	131.50	3.08	$	42.63
1,850	$	55.50	$	133.00	3.17	$	41.95
1,900	$	57.00	$	134.50	3.26	$	41.31
1,950	$	58.50	$	136.00	3.34	$	40.70
2,000	$	60.00	$	137.50	3.43	$	40.12
2,050	$	61.50	$	139.00	3.51	$	39.57
2,100	$	63.00	$	140.50	3.60	$	39.04
2,150	$	64.50	$	142.00	3.68	$	38.54
2,200	$	66.00	$	143.50	3.77	$	38.06
2,250	$	67.50	$	145.00	3.86	$	37.61
2,300	$	69.00	$	146.50	3.94	$	37.17
2,350	$	70.50	$	148.00	4.03	$	36.75
2,400	$	72.00	$	149.50	4.11	$	36.35
2,450	$	73.50	$	151.00	4.20	$	35.97
2,500	$	75.00	$	152.50	4.28	$	35.60
2,550	$	76.50	$	154.00	4.37	$	35.24
2,600	$	78.00	$	155.50	4.46	$	34.90
2,650	$	79.50	$	157.00	4.54	$	34.57
2,700	$	81.00	$	158.50	4.63	$	34.26
2,750	$	82.50	$	160.00	4.71	$	33.95
2,800	$	84.00	$	161.50	4.80	$	33.66
2,850	$	85.50	$	163.00	4.88	$	33.37
2,900	$	87.00	$	164.50	4.97	$	33.10
2,950	$	88.50	$	166.00	5.06	$	32.84
3,000	$	90.00	$	167.50	5.14	$	32.58
3,050	$	91.50	$	169.00	5.23	$	32.33
3,100	$	93.00	$	170.50	5.31	$	32.10
3,150	$	94.50	$	172.00	5.40	$	31.86
3,200	$	96.00	$	173.50	5.48	$	31.64
3,250	$	97.50	$	175.00	5.57	$	31.42
3,300	$	99.00	$	176.50	5.66	$	31.21
3,350	$	100.50	$	178.00	5.74	$	31.01
3,400	$	102.00	$	179.50	5.83	$	30.81
3,450	$	103.50	$	181.00	5.91	$	30.62
3,500	$	105.00	$	182.50	6.00	$	30.43
3,550	$	106.50	$	184.00	6.08	$	30.25

Other key areas that the ACPA are getting involved in are in further educating members in the true costs of machinery ownership and business sustainability, and trying to simplify the areas of OHS and compliance into something that all contractors can easily manage and use during the season when it most counts. This last area is a big task, and amongst operators, of key importance – up there alongside profitability.

Summary

Picking capacity for the Australian cotton industry is still a function of numbers of machines available for the job. These machines are owned by growers and contractors alike with contractors accounting for the major share of the machines, picking in excess of 70% of the crop as the capacity currently exists. Grower picking machinery has diminished over time as they have contracted out this operation rather than reinvest. Contractors are now doing the same – that is not reinvesting, as shown by the lack of picking machine trades, and so there is a strong resistance by the market overall to purchase new machines as part of the normal upgrade cycle. The current pool of machinery is getting older. The low water years currently experienced have ensured picking capacity has not been compromised, but has been masking the lack of equipment upgrade and the drain on the system as operators have been exiting, and continue to do so.

With the return to a full water year, and it will happen, all indications are that neither the grower of the contractor will purchase new machinery to meet the increased demand, but rather, the crop will be picked with the current machinery, over a longer period of time – the cotton will stay in the paddock for a longer period of time like it used to.