

# Tour Diary

## MONDAY 15<sup>th</sup> AUGUST

### RINEX TECHNOLOGY

Our first engagement was a dinner at Soprano's Restaurant with a presentation to be given by Rinex Technology, a SEPWA sponsor. Ashley Swayn, from Rinex gave an overview of the history of their company, what they have to products they have to offer at present and where they see the future of precision technology heading in the future. If it is as they predicted, we may be farming from the office within another thirty years with a fully automated and computer operated farm.

Rinex is Australian owned company involved in offering guidance systems that was established in 1995 and according to Ashley, they are currently the world leader in precision systems. Ashley spoke about auto steer, auto spray and the variable rate technology systems. Currently the guidance systems have 0.5 precision but in the near future, the precision will be about 0.2 – 0.5 ,, with more precision GPS guidance.

As a company, Rinex offers a compatible technology and service (affordable), fully upgradable systems (adds on in future), is user friendly and a flexible system and with after sale service. They cater for all business types as they have a base level system which is cheaper but limited applications and a high level system that is more costly but versatile, better data management, storage memory.

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## TUESDAY 16<sup>th</sup> AUGUST

### CBH METRO GRAINS CENTRE

Tour Guide – Matthew Mews, Manager of MGC

The weather unfortunately wasn't the best for the tour however we all gained a better appreciation of what and where our grain could end up after it leaves the farm gate and local receival point.

We were driven around past the sample hut, over the weighbridge and to the grid where we were able to get out and see the large unloading conveyor belts on which grain after passing through a huge magnet that extracts any metal is directed to a specific silo or grade.

We moved on to the container loading shed where they have purposely built the infrastructure to make for fast and easy loading. The large containers are filled with grain ready for the buyers. Malting barley containers have a special bag liner to protect the malt quality. The containers are able to hold 28 tonnes of grain.

The Centre has a massive dust extraction system that is able to collect the majority of the grain dust which is then taken away. Fortunately the Centre is on the same power grid as the Airport so theoretically it should never be off power.

The facility was built in 1997 and has a holding capacity of 212,000 tonnes and due to its close proximity to the Airport had a height restriction of 43mts. They handle approx 560,000 deliveries of grain over the harvest period, 2% of that from the Esperance port zone. An additional 3% from Esperance is delivered over the rest of the reason, which equates to 250-300 thousand tones.

To handle the size of this operation, which includes eighty nine (89) segregations (which can also be blended to meet customer requirements), plus the construction of a Lupin de-hulling plant, takes some co-ordination, not to mention the loading of grain and malt into the food grade containers, which was an eye opener for all. Container exports are growing and they look like using 15,000 containers this year. Shuttle trains capable of moving 12,000 tonnes per day are used to transport grain to the Kwinana Port.

It was interesting to note that MGC also cleans grain and transfers it by conveyor to Joe White Malting, located next door, who utilises the capacity of the MGC to ship out malt in their containers.

Quality control was seen to be at a premium throughout the tour, with this being the first time of many, that this was observed during the many visits to the various businesses. MGC is certified for organic grain handling. Wild oats and metal are the biggest sources of contamination. Incredibly 20 x 44 gallon drums of steel are removed from incoming grain each month and wild oats after they have been processed, can look like cockroaches which would be a disaster for some customers.

### **JOE WHITE MALTING**

Tour Guide – Mike Tempone

Following a coffee break, the group was split into two, with one staying at the Australian Grains Centre, and the rest going to Joe White Malting. Joe White Malting is owned by ABB, and is currently under going expansion.

The bulk of the barley put through the plant currently is sourced from within the Kwinana port zone, however with the expansion they may be forced to look further a field to get their required tonnage. Their grains of preference are Gairdner and Stirling Barley, and they are not yet convinced on the malting ability of Baudin.

Mike showed us where the barley was received from MGC, its distribution into the slurry tanks, where water is added to take the moisture content to forty percent (40%); from there it is transferred to the germinating bins. During this process light material, i.e. husks and radish, is floated off what is suppose to be cleaned grain. From here it is kept at twenty degrees Celsius (20°C) over a four day period to begin the germinating process. It is then dried to a moisture content of four percent (4%) which removes the shoots. This is performed over six (6) days, with the idea to alter the starch in the barley, to get the malt flavour.

After the tour of JWM, a few interesting things must be noted. Firstly is the close working relationship between JWM and CBH. Did CBH miss the boat by not purchasing this facility when the opportunity arose, and why is it that an interstate competitor in ABB, can work closely to CBH while from the outside, there still seems to be issues with the relationship with AWB? Something to think about!

### **AUSTRALIAN GRAINS CENTRE**

Tour Guides - Roslyn Jettner and Ian Sproul

The AGC was purpose built, to research the quality of the grain received and marketed by the CBH group, and to develop new technology to give a more precise sampling process at the silo. t.

AGC also works in with the Department of Agriculture, to develop new varieties, testing includes chemical residue, pearling quality, wheat contamination, germination and analyzing new varieties for their malting properties before varieties are released. They also extensively test grain samples to ensure that customers receive a superior quality product and work in with their customers, to help them gain a better understanding into the best ways to malt our barley's.

This gave the group a greater appreciation of the work that is going on behind the scenes, to not only benefit the growers, but also the end users.

Once again, quality control and traceability, a huge issue, with AGC holding samples from every CBH stack, so that if there is a query over the quality of any grain from within any stack, the representative sample can be rechecked. They have a 20kg sample from every CBH stack in a coolroom, these can be kept for at least 12 months so if there are any quality problems with the stack the 20kg sample can be checked.

AGC are evaluating new methods of sampling equipment which are more accurate but they are having trouble with the cycle time of the test. This allowed the group to raise issues that they have with the current sampling and QA processes, which were well received by Ian and Ros, and although they agreed that there are bugs within the systems, they are hoping that with some co-operation from all areas of the industry, they will be able to overcome these in the not so distant future.

## **SWAN BREWERY**

Tour guide – Melody

From seeing where the grain is received, through the malting process, it was off to the Swan Brewery, to see the final steps in the malting process, how they make it into beer.

Owned by Lion Nathan, we were able to see the process from where the malt went through the fermenting stages, with the length of time spent in the fermenting tanks, determined by the type of beer it is to be made into, right through bottling and packaging.

The old adage of the tour leader can make or break a tour, was evident here, as most of the tour party felt a more experienced leader would have given a deeper, more informative insight into the brewing process.

However, this did not stop the group from taking much enjoyment in working out that there is a total of four (4) grains of barley per 375 ml can of beer, plus enjoying the samples of end product put on by Swan.

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## ***WEDNESDAY 17<sup>th</sup> AUGUST***

### **STATE AG BIOTECHNOLOGY CENTRE**

Wednesday saw us head over to Murdoch University, to visit the State Agricultural Biotechnology Centre, giving the tour party their first contact with people involved in plant breeding. They explained how they are integrated in the breeding system with public and private resources. Also, with great emphasis they explained how the work they are doing is not to breed GMO's (Genetically Modified Organisms), and they went to great lengths to continue to remind us of this throughout the presentation.

The method that the scientists at SABC use is DNA markers to identify specific traits within a variety of crop. This is then traced through several lines, over a period of time, to ensure that the specific gene is carried to what will be the variety that is released to the farmers. Work is being carried out to identify and develop wheats that are resist to Septoria's and rusts, plus frost and salt tolerance.

It was very interesting to insights into plant breeding and to see how much DNA testing is done and to see which gene is in what plant as certain genes tell them if the plant is or isn't tolerant to salt, water logging or can be used for breeding.

We then were able to take a tour through their laboratories where they showed us all the expensive machines that they use through out these processes.

I would think that most of the group walked away from SABC, with a different outlook towards plant breeders, however it is vital that they don't get wrapped up within there own creations but keep in contact with the farming sector to ensure the work that they are doing is along the same lines as what is required within the industry. The pleasing aspect of this is that they too recognise this point and are keen to make ties with groups like SEPWA, so as to keep working in the right direction.

## **ALLIED MILLS**

Tour Guide – Paul Anderson

From Murdoch, it was off to Allied Mills in Fremantle for a tour of their premises. Allied Mills is owned by Grain Corp and Cargill's, processing some 60,000 tonne of wheat per year, with the main types of wheat coming from varieties within the Hard one (1) and (2), APW and ASW classifications. This gave the tour group an excellent insight into what is involved in the milling process of their wheat, with the plant manager Paul keeping the group entertained.

Allied Mills sell the bulk of their flour to Bakewell Pies and Mrs Mac, 5000 tonnes and 14,000 tonnesto Buttercup bread. They also premix flour, which is ready to add water and yeast to make bread, to Woolworths, Coles and local bakers.

It was interesting to see how efficient they have become over time, especially due to the age of the mill, one hundred (100) plus years. To make one tonne of processed flour, 1.3 to 1.4 tonnes of wheat is required, with the total waste per tonne of wheat being approximately one percent (1%). This is achieved through value adding their waste produce and dust, by selling to companies that make stock feeds.

They also add thiomen to the bread to help alcoholics with their diet and for Indonesia, they add 6 ingredients for their diet, including folic acid. The main quality concerns for Allied Mills is water absorption and low moisture, they can manipulate the protein quite easily by adding gluten.

Through the milling process the wheat that is received at 11.5 percent protein makes flour that will have a protein of 10.6 percent, equating to a 0.9 percent loss. Allied are having increasing issues with the water absorption of the newer varieties of wheat, preferring the older varieties e.g. Halberd and Spear.

Low moisture in the wheat is another issue along with the general cleanliness of the wheat when it comes into the mill. Due to the location of the mill, they have limited storage on site, and rely on grower's to store some of the grain on farm, which is compensated for in their pricing structure.

It was interesting that their trade secrets are highly protected, with no cameras allowed on the tour; I thought all milling processes were similar! This was an excellent tour, as it really emphasised the fact that we are involved in a food industry and quality issues are of an extreme importance.

## **PREMIUM GRAIN HANDLERS**

Tour Guide – John Orr

With the rain starting to fall steadily, it was off to Premium Grain Handlers with a smile on our faces. Unfortunately, due to the rain, we were not able to look around the site, however John Orr, manager of PGH, outlined the history of the company and what they thought the future held for their markets.

PGH was originally started by John and Henry Little, ten (10) years ago, with the idea of providing different types of grains to niche markets. They deal in Oats, Lupins, Barley, Wheat, Coriander, Faba Beans, Chick Peas, Dun Peas, White Peas, Green Peas, and Lentils.

All these grains are sourced directly from the grower's, and being sent to all parts of the world, but mainly Europe, the Middle East, India, and they are major suppliers to the Asian region (Thailand, Malaysia, Japan etc), as well as domestically, with orders tailored to the requirements of the customers.

This was highlighted by the fact that they have their own field pea splitting plant; however it is not in constant use as other countries are happy to split their peas when they get them and also our domestic market is not very big.

PGH will tailor orders to customers preferences and they also have an alliance with Thomson and Redwood Mills, that they can offload export deals that fall through as well as other produce when required.

In talking about future market trends, John mentioned that Lupins may see tough times in near future due to the Brazilian soy bean production and that maybe green peas are worth looking into as they can be grown here (as opposed to purple peas). He said the main growth is in feed grains (on farm storage is worth looking into) for premium prices.

This was an interesting insight into a different marketing alternative, with most of the group paying close attention and would be well worth going back to look over during fine weather.

## **CHALLENGER TAFE AQUACULTURE**

Tour Guides -Debra, Bruce, Greg and Sam

With the rain still falling it was off to Challenger TAFE, to look at a neglected government building which had been turned into an aquaculture research and projects facility.

The Government backed project is running two main lines of fish. Mulloway and Snapper, with some small time breeding of Black Brim and Sea Mullet for the restocking of the Swan River. Research breeding was also being done on Barramundi and Yellowtail King Fish. King Fish are for sushi market.

Mulloway – 1 spawning tank with 2 females and 1 male. Mulloway spawn in summer. Juveniles are then grown through to a marketable size of 500 – 700gm which takes around 7 months. Brings \$9/kg.

Snapper – spawning happens all year round. Juveniles are then grown to a size of 500 – 700 gms which takes 18 months. Brings \$10/kg.

The facility houses 11 growing tanks which are a size of 22t. Juvenile fish are grown up on algae (special types) until they can handle pellets. Pellet sizes from 6 – 9mm. Juveniles or larvae are fed high density algae which is in 4 different species until they are 20 gms then weaned onto pellets. 1500 fish in one tank.

The facility is housed 50m from the sea. This enables them easy access to sea water. They have a bore setup out to sea which filters through limestone for natural filtration. All the water is kept at 19 dec C which is ocean temp or thereabouts.

Challenger Tafe also have a wheatbelt development at Northam. The site was developed to see if they could utilize the salt water. Water is pumped from underground then settled for a few months in a pond. The project is aimed at seeing if commercial aquaculture is possible in salt affected farmland.

SIFTS (Semi Intensive Floating Tank System) were put into ponds to house fish. SIFTS are tanks that use rotational force with water to centralize waste. Waste is then sucked up with an air lift pump which also maintains oxygen levels. Tanks are 2.5 metres deep, 10t in size and cost \$13,000.

It was good to see something that was outside the square. We learned that breeding or growing fish is intensive and requires a lot of attention. However, allows diversification for the farmers that have salty affected areas and time on their hands.

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## **THURSDAY 18<sup>th</sup> AUGUST**

### **BUREAU OF METEOROLOGY**

Tour Guides - Neil Bennett, Manager of Weather Information Services.

Glenn Cook, Climate and Consultancy

Thursday, with the weather fining up, it was off to West Perth, to visit the Bureau of Meteorology where Neil and Glenn gave an interesting insight into the way in which forecasts are put together. Firstly, they do have windows in their building, and yes, they do look out of them, all be it, at Parliament House.

They made it clear that the accuracy of the forecast decreases each day out from when it is made, which they pointed out that the ten (10) day forecasting sites, the first five (5) days would be reasonably accurate, the second period is really only as good as a guess. Try the web site [www.ecmwf.int](http://www.ecmwf.int) for rainfall forecasting. The bureau has a lot of confidence in this site out to 4 – 5 days and uses it regularly.

Forecast accuracy – 1<sup>st</sup> day 90%, 2<sup>nd</sup> day 85%, 3<sup>rd</sup> day 80%, 4<sup>th</sup> day 75% - 10 day forecast (50 – 60%) over 10 days poor accuracy.

The main satellite used is Japanese – stationery a 3600kms high – continues to feed/secondary satellite 900kms high 2 pictures daily, cloud imagery then overlay lightning data. There is also free information exchange between countries and the USA Navy with Australia.

Neil hosted the visit to the Tropical Cyclone Centre, this is manned 24/7 only as required during tropical cyclone and severe thunder storms whereas the regional forecast centre is manned continuously with a chart produced every 3 hours.

The daily weather reports are currently typed out manually and distributed to the media but will soon be computer generated from on screen symbols and readings, simply by using a mouse click.

One of the more interesting aspects was that most of the charts are still drawn by hand, with the hope that the new system that is being developed would be fully automated and more accurate, and that due to the expanse of the Indian Ocean to the west of us, from where the majority of our weather comes from, it makes forecasting difficult due to the lack of permanent automated weather stations, this is why forecasts can change within a short period of time.

Glenn spoke about the longer term forecasts and outlooks. The 3 month outlook is based on pattern matching and comparing it to past events, this has a poor accuracy. The European model has the best accuracy modeling computer.

Overall in Australia, the BOM has a \$220 million budget. More funding is required to for more accurate forecasting, it costs about \$1million for a radar centre of which WA needs more as well as funding for sea based weather stations to be located in the Indian Ocean to give a

clearer picture of incoming conditions and fronts. Overall, this was a worthwhile tour, which could have had more time allocated to it.

## **NUFARM**

Tour Guide – Dave Cunningham

Down the freeway, to Kwinana we headed, for the next segment, a tour through the Nufarm production plant. Following the morning tea provided, Dave Cunningham split the tour group into 4 groups to speed things up. Each of the groups looked through the laboratory, manufacturing plants, filling stations and storage sheds, before a short presentation about research and development.

Nufarm imports the primary products from France and China, they are byproducts from other industries. When the raw byproducts arrive at Nufarm they are then reprocessed into the materials they require. This may take a couple of steps and all the way through they are measured and quality controlled. At Nufarm they produce, package, warehouse and then freight their products to strategic suppliers.

Nufarm work under very strict environmental codes of practice as all the water that falls on the site is collected in big tanks and treated to EPA regulations, before it is then discharged off the site. All the companies along the Kwinana strip come under the strict code of the EPA.

One of the main things to be seen throughout this tour was the emphasis that they placed on the traceability of each of the products within the system, plus once again those two words heard regularly throughout the trip, Quality Assurance. Nufarm have to keep within extremely tight guidelines, which they recognise and are therefore always seeking to improve their program.

The development of filling stations at Esperance, Merredin and Geraldton are examples of this. Bulk quantities of product are freighted to these sites where it is then filled into envirodrums, which means it is getting to the customer, farmers, quicker and avoiding freight and handling of enviros. In the future they are looking at moving to a fully enclosed system where by they retrieve and clean envirodrums, as well as investing further into research and development, particularly with the increasing cases of herbicide resistance developing throughout the state.

All of the groups asked questions, mainly about envirodrums, the colour of the drums and the quality of the spears, along with what new chemicals were on the horizons. This was another company that was protective of their plant, with no cameras, mobile phones or electrical devices allowed on the tour. Mind you they did put a good spread on for lunch. Another good tour that was well received by the group.

## **SUMMIT FERTILISERS**

Tour Guide – Murray Browne

The final tour of the day was just down the road at Summit Fertilizers, another of SEPWA's sponsors. Following a brief rundown on the history of the company from Murray Browne, we had a tour around their facilities.

The reason behind the founding of the Summit Fertilizers in 1988 was to provide farmers with an alternative fertiliser company in the state. They sold 5000 tonnes in 1989 to well over 400,000 tonnes a year today. There are four other Summit sites in the state – Esperance, Albany (on leased ground from the ports involved) and Geraldton and Bunbury.

All of their base products are shipped into Kwinana port and brought by truck to the depot. Trace elements are added as required to make up the range of products that they provide to producers. Summit was the first company to apply Impact to granular fertilizers for farmers.

Triple Super and Urea are two of their main products and Summit do work with international companies to get better products. Summit are also keen to develop their liquid fertiliser range and hopefully get this up to full production soon.

A pusher bale is used to push product up in piles of up to 17 mts. There are 4 load out points and most product is loaded out through the tower, they also use a drum mixer 8-9 tonnes at a time. By February a roof will link the two sheds for more storage. Summit can also blend at 4 tonnes a batch and also do insecticides on granulized fertilizer. According to Summit farmers can expect a 3% price rise to cover costs of next season products.

A group photo was taken with all of the farmers on the touring party proudly wearing the jumpers supplied by Summit for the tour and the others wearing SEPWA vests. For this we thank Summit for their contribution to the tour, and appreciate the time given to us to tour their facilities.

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## **FRIDAY 19<sup>th</sup> AUGUST**

### **DEPARTMENT OF AGRICULTURE**

The final day of the tour was Friday and this started with a trip to the Department of Agriculture in South Perth, to meet with some of the major players in the plant breeding business.

Rob Loughman spoke first, outlining how integrated breeding research and technology was getting, with several of the research bodies around Australia, combining resources and sharing information to produce improved grain varieties. These included the University of Sydney, Dept of Ag, Wheat CRC, the State Ag Biotechnology Centre, GRDC, the Aust. Winter cereals molecular marker program and the CRC for molecular plant breeding.

Robin Wilson gave an outline of the wheat breeding program, explaining the method used by the Department of Agriculture, which takes some 11 years, but are speeding up this process by using Doubled Haploid technology, marker assisted selection and single seed decent. The recently released wheat variety Eagle Rock was developed with this program.

Dr Reg Lance then led us through the barley breeding program, which uses the same technology as the wheat breeding program to improve the malting and agronomic performance of the varieties. The strategies they use include zone breeding priorities, crossing programs and cycle times with DH and SSD/

He then gave a summary of the new varieties that are still in the development stage. They all seemed to want to show how well their breeding and research is going and they were all very passionate about the work they are doing.

An interesting point with some slides was the rust nursery, which for biosecurity reasons are at Carnarvon and in Manjimup, surrounded by forest. Carnarvon's site was irrigated and showed amazing growth. The rust inoculum is grown in glass houses in Perth and then spread to both these sites to induce rust conditions.

Sue Broughton took us on a tour through the Double Haploid Laboratory, giving us the opportunity to have a look at the work in progress. Using the Double Haploid technology new breeding lines can be produce four years worth of crossing in one year. Plants are generated from haploid cells and the chromosomes doubled artificially to restore the normal chromosome numbers. When walked through the process step by step, it was easy to gain a better understanding of how the system works.

After this it was off to the wheat and barley testing laboratories, where testing is performed on each of the early generations of newly developed lines before they progress further through

the program. This aids in the identification of varieties that have undesirable traits early in the program, so that duds are removed

The machine used for this (N.I.R. technique) uses Near Infrared Absorption rates and at 2 mins per scan at about 100 gms of seed can determine the following in wheat and barley:

Wheat	protein	Barley	protein
	Hardness		hot water extract
	Flour colour		grain brightness
	Water absorption		grain hardness
	Flour quality		moisture
	Flour yield		% husk on grain

It was then onto the barley quality room, which was malting lab (micro) with the ability to test 100 samples per week (a very miniature Joe Whites), here they tested for:

- Protein content
- Uniform size
- Colour (brightness)
- Hot water extract content (this measures the amount of sugar and nitrogen which can be extracted)
- Fermentation test
- Enzyme levels (DP test)
- Viscosity

Then to the physical dough testing lab where dough was made and tested to see if flour quality meets the criteria for biscuits or bread.. A farinograph was used for testing for water absorption and strength. An extensograph was used for testing resistance and extension.

A biscuit flour will only absorb 50% of its weight of water and a good quality bread flour will absorb 62% of its weight.

The tour ran out of time but overall this was a very informative tour, which highlighted the passion possessed by all those involved and the time that it takes to develop new improved varieties.

## **UNIVERSITY OF WA GERmplasm ENHANCEMENT AND EVALUATION PROGRAM**

Tour Guide – Christe Grime

Following a quick lunch, we headed over the river to Shenton Park, to the UWA Field Research Station to look at the Barley Germplasm Introduction, Evaluation and Enhancement program. Christe gave the group a run down into the introduction of germplasm into WA and how she intends to ensure the security and longevity of the germplasm collection. She discussed the various types of barley that are stored in the collection with the range of head types – 2,4,6 row heads, grain shapes and colours.

From the storage facility, we examined the field plots to see how the new introductions in to the collection are assessed for photoperiod sensitivity and disease resistance. Powdery mildew was running rampant and a wide range of genetic resistance was being demonstrated between the various lines. All this information on resistance is passed on to the breeders. From these plots selected lines form the double haploids program are tested.

The other area of interest was the lines of barley that carried the globosium genes, which help to express the round seed shape, vital for the improvement of the pearling qualities of the new barley varieties.

## **CLIMA**

Tour Guide – Margaret Campbell

The next section of the day was at CLIMA, to look at alternative oilseed crops. This was an eye opener, as they are mainly looking into an alternative to canola for around the state, with the end uses including biodiesel, cover crops, and food quality oils.

The first we looked at was linseed. This has food quality oils as well as being suitable for a wide range of other end users including cosmetics and industrial uses. Difficulties include harvesting and lower yields than canola.

At this stage the production of biodiesel is viable but based on tallow rather than vegetable oils. The canola oil is too expensive relative to tallow at this point in time. To replace the entire petroleum based diesel used in Australia with Biodiesel we would need to grow canola over the entire cropped area of Australia every year.

Crambe shows potential as an industrial oil for Australia as it has a tolerance to waterlogging, a range of herbicides and it is relatively easy to grow.

The Indian Mustards have a good agronomic package for the wheatbelt of WA and also has a good potential for the production of biodiesel, however there is still some fine tuning required.

Camelina or False Flax has reasonable potential for WA and if established as a crop has a considerable market in Europe as health food and food oil. Camelina is frost tolerant, competitive with weed and is a low maintenance crop. Harvest time is critical due to the size and weight of the seed. Various other mustards show a range of potentials for WA as cover crops, forage crops and oil crops.

Unfortunately we ran out of time for a full run down on all of them but overall this was something different to look at, providing the tour participants with some food for thought as to how these might be able to fit into their current farming system.

## **COGGO**

Tour Guide – Geoff Smith

A short walk across the grounds, the group met with personnel from Grain Biotech Australia, Canola Breeders of WA and COGGO.

Geoff Smith from COGGO spoke to the group, outlining that the Canola Breeders come under the COGGO banner. COGGO is funded from voluntary contributions made by growers, which helped start farmer trials. Formed in 1996/97, COGGO was one of the groups behind the push for End Point Royalties, which saw money returned to the breeders.

Paul Fox, General Manager of GBA, Chris Moore, Wheat Breeder and Vynka McVeigh, Breeding Operations Officer, took us through GBA trials, showing us new varieties for future release. GBA were responsible for the breeding of the variety GBA Sapphire, which has been widely adapted along the South Coast, and have got some yet to be released varieties in the SEPWA trials this year, with GBA 03.09.CS of particular interest, as it is being aimed for the Western Soft Wheat market, that AWB are targeting for the Esperance Port Zone.

The following list includes some of the other varieties that were observed that are due for release in the next few years;

- GBA03.11.29 – Wyalkatchem maturity, AH/APW target quality, possible release 2008
- GBA03.11.26 – Westonia maturity, AH/APW target quality, possible release 2008
- GBA03.09.AH – mid-season maturity, AH/APW target quality, possible release 2007
- GBA03.99.7B – related to Sapphire, mid-season maturity, AH/APW target quality, possible release 2007

Several varieties of wheat are being grown south of Gibson to test for rusts and other diseases. While being shown these new varieties, the breeding process was explained, which was a rerun of the mornings tour of the Department of Agriculture, however it was a great way to reinforce this point to the touring party.

Participants also had a look at the glasshouse at the double haploid breeding program where they are using maize pollen to help breed new varieties, this speeds up breeding from about 10 yrs to 7 yrs.

### **CANOLA BREEDERS OF WA**

Tour Guide – Milton Saunders, Field Operations Manager

At Canola Breeders WA, Milton explained the process of how new varieties of canola are bred. CBWA was established in 2001 through an alliance of COGGO, the Export Grains Centre, a research investment company of GRDC, and UWA, with NPZ Lembke, a German plant breeding company, joining twelve (12) months later.

CBWA are responsible for the development and release during 2004 of the varieties, Trigold and Trilogy, and has a new variety, Boomer ready for release in 2006. During their breeding process, any variety that shows any signs of being susceptible to Blackleg is removed from the process immediately. Mick Curnow has canola trials on his property at Esperance.

Some crossing of varieties is done but only small amount with the seed sourced from Germany. Plants are put into a shade house singularly and bags placed over plants when flowering to stop them from cross breeding.

Once again, they use double haploid technology to speed up the time frame for the establishment of new varieties. Overall, it was a great opportunity for the members of the tour to meet with and express their concerns to plant breeders, which may hopefully help them to breed better varieties in the future.

### **AWB Ltd**

It was then off to the centre of Perth to the head office of AWB for the final official engagement of the tour. Matthew Rigg, Paul Ryan and Simon Gilfillan spoke to the group on the future outlook and market directions, hedging by future contracts and some information on changes to the harvest paperwork.

### **FOOTY**

The finale of the tour was watching the Fremantle Dockers play against St Kilda under lights at Subiaco Oval. The tickets were generously given to us by Summit Fertilizers, for which we are extremely grateful, even more so since the Docker's were able to sneak home with a win.