



Reflections on the first decade and directions for the future

BRA has completed its first decade – and it’s been an exciting ride. We come from beginnings as a small group of committed people who once identified a unique opportunity. Over the years we’ve become a larger group which has met challenge after challenge. As we’ve built the pyrethrum industry in Tasmania and sold Tasmanian pyrethrum to the world, we’ve surmounted obstacles with innovative solutions over and over.



Ian Folder -- Managing Director

We’ve been lucky to have the support of customers who believed in us, and we’ve been fortunate to have been able to build long-term relationships on every level of the industry.

Most importantly of all, BRA’s successful first decade has been a heroic team effort. The talent and adaptability of our team is some of what we’ve summarised in the following pages. There have been many milestones along the way, and we also review these here.

Looking to the future, our challenge is to meet and exceed the expectations of our customers. To achieve this, we’ll drive some exciting sophistications in the production and market development of pyrethrum and pyrethrum-based products.

In the next five years, we aim to increase our sales by 25 to 30%, and in the next decade we predict a 65% production increase over present levels.

Meanwhile, development of BRA’s other botanicals is still clearly

within the company’s sights, with excellent agronomic success in the development of echinacea, as well as promising progress on the development of the antimalarial plant, artemisia.

We’ll continue to work with our strong blend of R&D and solid production techniques, backed by effective marketing, and staffed by an incomparable team, to deliver the success that’s come to be expected of BRA – over the next decade and well into the future.

Tasmanian grower sets new world record yield



Above: Tony and Ruth Shadbolt share their delight in their high yielding crop, pictured below.



A nine-year-old record for the highest yielding pyrethrum crop ever achieved was smashed this year by growers Tony and Ruth Shadbolt at North Motton near Ulverstone. The Shadbolts’ crop yielded 87.1 kg pyrethrins per hectare, more than double the industry average.

BRA field officer Ian Charleston puts the result down to getting all the key ingredients just right. “There was good plant establishment, good weed and disease control, and irrigation at the right time in the spring,” says Ian. “The crop received five irrigation applications of 25 mm between September and early December.”

Grower Tony Shadbolt says he also made an extra effort to clean up any escaped weeds so they did not go to seed to cause problems in subsequent harvests. “We did some hand weeding as well as boom spray herbicide application,” says Tony. “I’m over the moon. This is an unbelievable result.”

Manager Agricultural Businesses for BRA, Tim Groom, is also delighted with the record. “This is a fantastic result in a very difficult growing season, and it’s a record we’ve been chasing for some time,” he says. “Research and development, combined with the careful management as demonstrated by the Shadbolts, has proven that the current average crop yield had huge room for further improvements.”

The previous world record pyrethrum yield was in fact broken twice in the 2007 harvest, with growers Johan and Natalie Wolfert of Kindred also passing the previous world mark.

Tim Groom says that research and development has been strongly supported by BRA and its growers, with the valuable financial assistance of Horticulture Australia Ltd.

As part of the BRA Pyrethrum Olympic Challenge, both of these growers are eligible to win a trip to China in 2008.

A decade of milestones

BRA's first decade has been a time of overcoming hurdles and marking significant milestones along the way. None of this could have been done without the dedicated, outstanding people, both within BRA and outside, who worked together to make the pyrethrum industry in Tasmania possible. Below we look at some of the momentous achievements of the last decade, and hear from the people who made them happen.

Field Production

The world record beating yield by Tony Shadbolt in the 2007 harvest was no fluke. Years of consistent focus on pyrethrum field production and yield maximisation have culminated in results like this. It's a long way from the early days of pyrethrum in Tasmania.



Megan and John Hill

Crucially, early trials conducted at Hills Transplants showed that pyrethrum yields, at least two and a half times average commercial yields were possible, and it was this finding that really kick-started pyrethrum growing in Tasmania. "This small trial provided me with the confidence to direct my efforts towards maximising the yield of our existing plant material," remembers Ian Folder, who was then Tasmanian Operations Manager with CIG Pyrethrum. "I used this plot as a reference point to both growers and CIG management to indicate what could be achieved."

The next milestone in field production was undoubtedly the development of direct drilling technology for pyrethrum crop establishment. Instrumental in developing direct drilling onto a commercial scale were Matthew Greenhill and Brian Chung and their team. This important development, made in 1997, dramatically reduced costs of getting the crop into the ground. "It was the key improvement for increased yield and decreased crop establishment costs," says Brian.

In ensuing years, there were disease and weed management issues to overcome. Weed control for pyrethrum, especially for direct drilled crops, was a totally new challenge as there had been no work on this area of production anywhere in the world. Here, together with its own field production and research

John Hill, one of the pyrethrum industry's pioneers remembers: "We worked with the early tissue stock, growing pyrethrum plants and multiplying them here." John was first involved with pyrethrum in the days of CIG, when for several years, he grew an annual 20 million pyrethrum seedlings at his business, Hills Transplants, near Devonport. "These were the days when there was a small empire of people working on pyrethrum splitting operations every season," says John. "It was one of the first attempts to develop an agricultural industry in Tasmania that was high value/low volume: we faced all sorts of difficulties, not least of them problems with disease control. But pyrethrum was a huge pleasure to be involved in, and a huge challenge at every turn."

staff, BRA relied heavily on outside experts, like Julian Shaw and his team from Agronico, as well as Phil Frost and his colleagues from Serve-Ag. "Weed control was crucial," says Julian. "With our experience in onions, peas and beans, we were able to rapidly develop a herbicide weed control system. It took years, and we had a few weedy crops, but it was a huge success."

Diseases like sclerotinia and phoma were also a difficult obstacle in early days. Julian Shaw and Agronico were instrumental



l-r: Jason Hingston, James Hills and Julian Shaw of Agronico.

in helping identify the problem, while researchers like Frank Hays and Sarah Pethybridge came up with solutions to disease problems. Advances in the harvesting and crop handling formula, largely driven by the Manager of Planning and Logistics Bill Casey also meant that a well grown crop was being handled with increasing knowledge and

skill at harvest. At present, Kristin Groom's plant breeding program is also in progress and will contribute to increased pyrethrum yields in the very near future.

For R&D to be able to make a difference in the field, important research findings have had to be implemented. Here, dedicated growers in conjunction with BRA's field staff have been the key. Field production staff like Stuart Coles, Ian Charleston, Denis Phipps and Mark



Stuart Coles

Raspin have worked closely over the years with grower representatives like John Rich and Scott Langton. It's been an important symbiotic relationship, and one to which world-record breaking grower Tony Shadbolt can attest: "The model for pyrethrum growing has improved so dramatically over the years. We've have great guidance from the researchers, and all the people behind the scenes, and that's what has made it possible to start setting these records."

Post harvest processing

One of the first major decisions made in the earliest days of BRA was to design and build a refining plant. In these initial stages, extraction was conducted off-site and BRA's crude pyrethrum extract was sent offshore to the USA for further refining. Commissioning the pilot refinery was a big leap of faith. "It was quite a dare," remembers John Boevink, now retired from BRA, but then Director of Manufacturing. "We conceived of it in the laboratory, built it and made it work. It was a huge milestone for BRA."

Refining on-site had great economies and increased efficiency, but the plant really came into its own when it was developed from one to two columns, and then the full complement of six-column CO₂ refinery that was completed in 1999. Helen Faber, who took over extraction and refinery management from John Boevink in 2004 explains. "This is now the biggest CO₂ pyrethrum refinery plant anywhere, and it's become more and more efficient over the years."



Warren Maney, who oversees the extraction plant.

A second crucial development in post

harvest processing was the construction of a hexane extraction plant at BRA's Ulverstone site in 2001, with the support of an AusIndustry R&D Start Grant.

"Extraction is now in its sixth season on site at BRA, and volumes have increased enormously," says Warren Maney, who oversees the plant. "The process has also become increasingly efficient time and energy wise, and we expect to keep on improving. In the future we hope to use the plant a lot more, such as for the extraction of other plant-based products." Coupled with the new pelletiser, built in 1999, this has made for efficient, streamlined on-site handling of the post-harvest product. Volumes are now bigger than ever, as pelletiser worker Neville French explains. "We now put through 180 tonnes a day, in three shifts of 60 tonnes. If the pellets are good, the extraction is better. It's an integral part of the process."

One of the latest processing innovations is the 2005 development of the post-refinery filterpress. "As the name suggests, this filters the product to remove residual impurities, giving a



Pelletiser worker, Neville French

better quality end result." At the start of 2007, a major overhaul of the refinery plant is also underway. "We're upgrading the heat exchanges and renovating almost everything except the columns, with the aim of increased safety, better production throughput, improved process control and some simplification," say Helen and refinery colleague, Martin Anderson.

It's been a long haul, full of risk-taking and achievement, but post harvest processing at BRA has really come of age. It's taken foresight, skill and teamwork to make what was once a pioneering plant into a sophisticated processing operation.

Sales and marketing

That BRA exists at all is owed to the fact that a group of believers and risk-takers could see a sales opportunity which they thought they could fulfill. "The fact that Tasmanian pyrethrum was able to find a niche in the worldwide market had a lot to do with the cyclical nature of African supply," says Ian Folder. "We saw the market opening there and we went for it." The rest is history.

As BRA has come of age, the focus of the business has been increasingly on marketing the product. While research and development are still crucial, and there remain improvements to be made in production; the now stable and growing supply of Tasmanian pyrethrum has made selling the end-product a new priority.



Product Development Manager - Brian Chung

"This slight change in focus in recent years has been a real challenge for the industry," says Product Development Manager, Brian Chung. "This new emphasis is as big a milestone as some we faced in the nuts and bolts of producing pyrethrum in the early years."

One of the biggest tasks on the desks of the sales and marketing staff is the registration and re-registration of the pyrethrum in overseas markets. This is a process that's very expensive and taken many years, with requirements being rigorous, and specific to each market. BRA is a member of an industry task force that has just achieved successful re-registration of pyrethrum in the USA. BRA is also working towards meeting the EU directives for the product, and completing member country registration in Asia. "Very good progress has been achieved

now," says Brian Chung, who is assisted by Kristin Groom in these processes. "The European re-registrations are imminent, and we are working on the Asian requirements case by case. We've already had success in Singapore, Israel and Korea and we're still working on the registration of new products in Korea, Taiwan, India and Malaysia."

The sales and marketing division has also bulked up on staff, with the transfer of Matthew Greenhill into this side of the business as Operations Manager, while also spending a large part of his time on product development. "We're now looking into developing our own customer-focused formulation, PyZap, for use in public health and horticulture," says Matthew. "We're also developing a product for integrated pest management in cotton. We're on the verge of some pretty good discoveries with pyrethrum, with the prospect of developing several new formulations for non-traditional applications."



Operations Manager - Matthew Greenhill with Jytte Close.

The focus on consolidating markets, and on commercialising new products both domestically and internationally is an important new part of BRA's present and future direction. "It's an exciting time," says Matthew, "and a big learning curve for us all."

BRA goes green

In these days of global warming with the need for energy efficiency becoming so acute, BRA is doing its best to go green. The company has completed its own energy audit, and with the help of a new Tasmanian Government initiative, CleanBiz, BRA is set to get even more environmentally friendly.



Maurice Kerr

Under the stewardship of Senior Chemist Maurice Kerr, all the company's processes were put under scrutiny for energy usage.

"We went through and did the sums on the extent of our use of electricity, petrol, diesel, heating oil and LPG," explained Maurice.

BRA applied to join the CleanBiz program, and was one of just 10 companies in Tasmania to be accepted. Now, with the help of a CleanBiz facilitator, BRA will be able to review its production processes and put into

place changes in production that will reduce energy and raw material use, reduce waste and find uses for by-products. A change to the pelletiser is already underway which will produce better pellets for more efficient extraction, with a resultant reduction in energy use.

"This all goes towards being more aware of our CO₂ footprint, and our contribution to global warming, to give overall eco-efficiency," Maurice added.

Focus on safety awareness

BRA already has an excellent safety program in place, and recent work by the Safety Committee, with Operations Manager Matthew Greenhill at the helm, will ensure the company stays that way.



Safety Committee members (l-r): Dwayne Strochnetter, Trish Bourke, Glenn Molendyk, Warren Maney, Mark Raspin, Denis Phipps and Matthew Greenhill.

The Safety Accountability Program (SAP) looks at where injuries may occur, assesses risks, and implements controls," explains Matthew. "This way we can deduce the engineering controls required, or assess what personal protective equipment is necessary. We also look at manual handling duties, with a view to injury minimisation."

Although the program has been in operation for about three years, accounting for BRA's excellent safety record, recent improvements have made the scheme even more rigorous for all employees and contractors.

"BRA has a very good safety record which complies with relevant safety legislation standards," says Matthew. "This program will ensure that BRA's employees continue to work in a safe environment."

Role transitions and new faces

BRA has thrived through its first decade by being adaptable, and that's precisely the quality that's been shown by many of the company's staff. Many employees have moved fluidly from their initial roles to new ones – and there's also a new face on the scene.

Manager of Product Development, Brian Chung, a horticulturist by training, joined BRA soon after its inception as R&D Manager. Brian has moved with the trend and now works in the Sales and Marketing team in the crucial role of product registration and new market development.

Kristin Groom, who joined the company three years ago, now works closely with Brian, having made the transition from academia with a PhD in pyrethrum breeding. Although she has a major role in registration work, Kristin still manages pyrethrum breeding for BRA.



Kristin Groom

The transition for Matthew Greenhill has been similar. Initially employed in field production, Mathew has broadened his role to encompass sales, product and market development together with a number of cross-department functions such as OHS and site management.

In the chemical processing field, Helen Faber has made a major change from Laboratory Manager to become Manager of Chemical Processes: now overseeing all extraction and refinery processes for pyrethrum.

Dwayne Strochnetter, a laboratory chemist, has undertaken



Dwayne Strochnetter

training in the shipping of dangerous goods, and is now responsible for the documentation and dispatch of all shipments from the Ulverstone site to overseas clients.

Finally, the newest addition to the BRA team in Hobart is Group Financial Controller Collette Usher. Collette has a strong background in the financial departments of agricultural and engineering companies and she's welcomed to BRA.



Collette Usher