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News

Spring 2017

AICL Specialty Fertilizers
Where needs take us

Strength in unity is the driver behind five ICL organisations, Everris, Fuentes, Nu3, Novapeak and F&C, coming together as a new leader in specialty fertilisers. Together, we now share one name – ICL Specialty Fertilizers.

The strength of our new brand provides worldwide value for growers through operational and supply chain optimisation, and world-class research and product development – backed by ongoing innovation, new products and technologies.

You can be assured of getting the same high-quality, tailor-made advice from our field experts, fulfilling the evolving needs of growers and farmers in an ever-changing world.

Eric Lin, Business Director Asia Pacific
John Walsh, Country Manager
Australia & New Zealand



War of the Weeds

Greater weed control through Integrated Weed Management

Figure 1 Weed seeds in tubestock will likely spread around nurseries after potting up.



We developed the world's first controlled release fertilizer 50 years ago. This sowed the seeds for five decades of innovation.

Four generations of Osmocote, each with its own unique features, have grown up over the last half century. We share 50 years of growing together. Our growers have been our inspiration since day one. Because we share your passion for growing excellence from generation to generation.

Our commitment? You can count on us. We're ready for a future of growing together for generations to come.

Herbicides have revolutionised weed management. Before Rout, weeds were primarily managed by physical and cultural practices such as hand weeding, mulching and by increasing competition in growing beds.

Of critical importance was, and still is, preventing the introduction and spread of weed seeds. While revolutionising weed management, herbicides were designed to complement the original physical and cultural practices rather than be the sole method of controlling weeds. The term we use is 'Integrated Weed Management', where several practices control weeds simultaneously.

This article explains how integrated weed management can provide nurseries with more comprehensive control including the roles and effective use of pre- and post-emergent herbicides.

Sanitation is the primary goal

A number of management practices can help to prevent the introduction and spread of weeds. The main principles are:

- Prevent the introduction of new weed species to the nursery
- Prevent the spread of seeds within the nursery
- Control weeds prior to flowering and seed-set.

Prevent the introduction of new weed species

Entry points for new weeds include weed seeds hiding in plugs and tubestock (Figure 1). If the nursery buys in production material it is essential to know whether there are existing weed pressures at suppliers.

Weeds and weed-seeds can be introduced via product transfers between nurseries (even within the same business). For product transfers it is common practice to hand-remove established weeds before transfer or sale but weed seeds already present in the media will likely remain. NGIA recommendations are to remove 2cm of media around the top of the pots (NGIA, 2003)¹.

Seeds can be introduced on shoes of site visitors and staff, especially contractors who may work at multiple sites. Foot baths at sign-in stations and the entry points of growing structures can remove seeds before they are introduced. However, it is rare to see foot baths in production nurseries. Ideally site visitors should have direct access to report to the office without needing to wander past growing areas.

Prevent the spread of seeds within the nursery

New plantings made with fresh media should not have weed growth. If they do it indicates that weed seeds are being spread within the nursery. There can be multiple sources. Recently we have seen a number of nurseries with heavy weed pressure around the margins of growing beds (Figures 2 and 3). These weeds provide a source of new seed that can quickly infect growing areas. Seeds may be spread by wind or water movement or may attach to staff footwear and be spread to new areas in the nursery. Weed control in growing areas will simply not be possible if weeds are allowed to proliferate in other parts of the nursery.

Other areas where we often see heavy weed pressure include mother plant beds, especially when they are located in the back-corner of the nursery and are 'out of sight, out of mind'.

Reuse of pots should be avoided unless they are cleaned and sanitised thoroughly. This is true for plug production, tubestock and for potting up larger plants.

Control weeds prior to flowering and seed-set

Frequent hand weeding is the last line of defence to remove weeds before they set seed and add to the nursery seed bank. The seed bank can be significant, with many species being able to generate thousands of seeds from a single plant and, for some of the most significant species, within weeks of germination. Therefore, it is very important to control weeds before they flower.

Getting the best value from herbicides

If sanitation is the most important part of a weed management program, then herbicides are a valuable second line of defence.

Herbicides are designed to reduce germination rates, reduce weed numbers and help control weeds prior to flowering. They can make sanitation easier but are not designed to replace other sanitation practices.

Herbicides can generally fit into two groups

- Knock-down herbicides
- Pre-emergent herbicides

Read more of War of the Weeds on page 3 ►

Mastering weed management

How Plantrite Nursery in Western Australia has developed a best-practice program for delivering the cleanest of plants



David Lullfitz with Joska Stroobach of ICL

With eight hectares of plants on a 40-hectare block in Bullsbrook, Western Australia, Plantrite Nursery stands as the largest supplier of plants to the revegetation industry.

Penny and David Lullfitz started the nursery in 2007 with a focus on forestry tubes, and since their move to Bullsbrook in September 2013 the nursery has continued to expand.

In addition to forestry tubes for revegetation, Plantrite currently supplies to commercial landscape projects and has an extensive retail range. Pot sizes now range from forestry tubes to 63-cell trays and 140mm pots.

Delivering quality plants without weeds

“Our motto at Plantrite is ‘Quality Plants, Trusted Service,’” David says, “we deliver on our promise, and good weed management is an important part of that.”

“We are proud to deliver good quality plants, that are clean and do not have weeds in them.”

But how does David achieve this?

As we toured the nursery, David outlined the key principles and processes that drive Plantrite’s approach to weed management – and these are summarised below.

Controlled propagation on-site

With the majority of propagation taking place on-site, there is minimal risk of getting weeds from other nurseries through plant deliveries.

Cuttings are taken either from potted plants in the nursery or from the nursery’s stock garden.

All plants in the stock garden are planted through weed mat, limiting the amount of open soil. This, combined with drip irrigation watering located under the weed mat, makes it extremely hard for weeds to emerge and develop.

Starting clean

A clean start is very important, so all propagation is checked for weeds and hand weeded on a regular basis, leading to the team at the potting machine ensuring there are no weeds in the plugs as they pot them up.

Plants are watered straight after potting, while still on the trailer, so any loose media that otherwise may blow off or run off the pots with the initial watering, is kept at the potting shed, rather than becoming a source for weeds in the nursery.

As areas in the nursery become empty, they are cleaned through sweeping and blowing off leaves and soil, and if needed, spot sprayed with herbicides.

The team mainly works with new, clean pots and trays, but in situations where pots or trays are re-used, Plantrite’s standard practice of 30 minutes steam sterilising at 70°C guarantees a clean start by eliminating pathogens and weed seeds.

Hand weeding and spraying

Part of the team spend an hour each day hand weeding, with a focus on weeds that are close to flowering, to prevent seeds from developing.

Paths, firebreaks and empty areas are sprayed regularly using a 5 litre pump spray for smaller areas and a 250 litre spray trailer with a fold-out boom for larger areas.

The choice of contact or systemic herbicides is driven by weed type, and a pre-emergent herbicide is always included and applied as appropriate.

Planning and responsibilities

Production manager Joerg explained how they have divided the nursery into three areas, each with a supervisor responsible for all tasks, including weed management.

Each area is again subdivided into smaller areas with a strict routine of applying Rout pre-emergent herbicide every eight weeks.

Newly potted plants are marked with clearly visible blue labels – indicating that Rout must be applied within one week after potting.

Applying Osmocote for weed reduction

Working with Osmocote Exact and Osmocote Pro as the fertiliser source, the team has changed application methods to effectively reduce weed development.

In the tubes and 63-cell trays Osmocote Pro is incorporated, and in the 140mm pots Osmocote Exact is dibbled in the plant hole.

In both cases there is less fertiliser available for weeds trying to develop in the top layer of the media.

David has noticed a considerable reduction in weed development since the team changed application methods.

Core work practices for weed-hygiene

David and his team have implemented four quality and risk-management practices that underpin the day-to-day operations and weed-hygiene principles.

- All media is stored away from the growing area on concrete, with the media ideally used within a few days so as to limit the risk of weeds starting to grow.
- The composting and tip areas are away from the nursery and sprayed with herbicide when weeds emerge. Composted material is taken away from the nursery and media is never re-used.
- Plants in the 63-cell trays and most forestry tubes are grown on benches, away from the ground making it easier to keep the surroundings clean of weeds.
- Older plants, which are more likely to have weeds developing, are combined together in one corner of the nursery making it easier to manage and minimise the risk of weed infestation to new plants.

Rout®

Tried, True, Tested

Application made easy

These tools assist in determining the correct rate and distribution, increasing accuracy and efficiency of application and creating handy reminders for application times.

The Rout shakers, Rout calibration trays and Rout application tags are available free from your local ICL Distributor.

Rout shakers

Rout shakers enable easy application around sensitive plants, avoiding granules catching on foliage.

Rout calibration trays

Rout application-rate calibrators quickly assist in determining correct rates & distribution.

Rout application tags

Rout application tags provide simple and easy reminders for application times.

ICL HandyGreen spreaders

ICL HandyGreen spreaders apply Rout to larger areas quickly and evenly.

Incorporation on the left and dibbling on the right both contribute to a reduction in weed development.

Notes on dibbling with Osmocote

The dibbling method offers growers and nurseries a major cost advantage. They use about 20% less fertilizer per pot than top dressing or incorporation, while still ensuring their crops have superior health and uniform growth.

Dibbling has a number of other advantages:

- Fertiliser will not be lost if a container is knocked over or flooded by watering
- Weed growth is reduced as the fertiliser is near the root ball, not on the surface.

Only Osmocote, Osmocote Plus and Osmocote Exact have the safety characteristics to be used without danger of burning the plant in the dibble hole.



5-minute interview with David Franklin

A growing past supporting technical sales

David Franklin has been with the ICL technical sales team for ten years. Prior to 2006 he worked as a grower in Victoria. David's wealth of practical growing experience provides added depth to the knowledge and skill he brings to his role with ICL.

What is different?

As a grower I always enjoyed the process of growing plants. In some ways what we do is no different to any other manufacturing process, but most growers will tell you there is a certain earthy satisfaction in doing what we do. No plant is the same and nor is the environment and or climate in which its grown, I think for me that's what I find different and challenging at the same time.

What is the same?

For me the industry is still the same in that it is full of people who love what they do. Personally when I learn new ways of doing things from different growers or have the opportunity to solve a problem that's what I've always liked about the nursery industry. While I miss that personal sense of achievement of growing my own crops, it's rewarding to feel you're using your experience to help make a difference to someone else's business.

What major changes have you witnessed?

Over my time in this role easily the most significant change I have seen is the growth and dominance of the large chain stores. I think every grower has had to come to terms with the shift in how green life is sold. Don't get me wrong there are still many independents doing a great job retailing a unique offering to the plant loving public, but the driving force selling our product to consumers are the big box stores. Because of this shift, I think all growers who operate in this space have had to focus more on efficiency and productivity to remain relevant and profitable.

Opportunities and threats?

As some pests and diseases have become more challenging to control with fewer chemicals in the armoury, growers have had to become more skilled at nursery hygiene and adopt a more sustainable Integrated Pest Management approach.

Meanwhile other areas of production have simplified. We are very lucky these days to have quality media suppliers who can make the production process much more efficient by producing customised, crop specific media that allows growers to focus on growing. For an industry that has historically focused on an older demographic to remain relevant we must now look to access and drive interest in the next generation. I feel strongly that this remains our greatest threat to long-term sustainability whilst also providing the industry with the best opportunity for growth.

How do you relax?

I play, watch and listen to music, it's become a very important part of my life and helps me unwind, I love nothing better than sitting back with a nice cold beer and watching good musicians doing their thing. I'm also lucky in that these days I get to travel and holiday with my smoking hot wife of 27 years. Hopefully soon I will have the pleasure of grand kids too!

War of the Weeds

Greater weed control through Integrated Weed Management

...continued from page 1

Knock-down herbicides

Knock-down herbicides, those that control established weeds, are rarely used in nursery growing beds where there is a high risk of damaging nursery stock.

However, products containing glyphosate are regularly applied to non-growing areas such as paths and around the outside margins of growing structures.

Most knock-down herbicides will not provide residual control. As a result, if staff availability or weather conditions prevent re-application, weeds can quickly get out of control, flower and set seed.

Pre-emergent herbicides

Pre-emergent herbicides such as Rout and Sierraron 4G have been designed for use in nurseries; Rout in container growing areas and Sierraron 4G around the margins of growing beds, driveways and other non-growing areas. They are broad spectrum (control a large number of species) and have significant residual effect so that weed control can be maintained during busy periods or when environmental conditions prevent the regular re-application of knock-down herbicides.

Getting the greatest efficacy from pre-emergent herbicide applications requires staff to apply

- the right product
- at the right rate
- at the right time, and
- with the right placement.

Always read the label

Each herbicide has efficacy against specific weeds and a comprehensive list of weeds that a product is known to control can be found on the product label. The product label also specifies species of nursery stock the product can be safely applied to (without risk to the plants). The label may also give other important instructions that will help growers decide whether it is the right product to use. For example, some products are not suitable for use within indoor structures such as glasshouses and polytunnels.

All herbicides need to be applied at the correct rate, which is shown on the product label under 'Directions for Use'. Under applying herbicides can provide poor control and potentially accelerate the development of resistance. Over application is unnecessarily expensive, could potentially have environmental or health and safety implications or may even damage nursery stock in extreme cases.

Calibration for correct application

ICL provides granular-herbicide calibration trays for Rout and Sierraron 4G and we run training sessions with nursery staff to help growers ensure that the correct application rates are applied. The calibration trays are not compatible with other products, even those containing similar active ingredients, because of significant differences in the bulk density between products. We also strongly discourage growers from mixing different brands of granular herbicides together, which usually results in the incorrect application rate of both products.

Achieving the correct application rate of liquid pre-emergent herbicides usually requires the use of calibrated boom sprayers and can be very difficult to achieve with a standard backpack sprayer.

Application of Rout for pre-emergent control of weeds

Pre-emergent herbicides, as the name suggests, need to be applied prior to weed germination. Oryzalin, one of the active constituents in Rout, will help to block plant cell division. Once a weed has germinated and contacts Rout in the media the Oryzalin will prevent further development of the seedling. Application to established weeds may have some localised effect but is unlikely to inhibit growth sufficiently in weeds that have already germinated prior to application.

Finally, Rout needs to be applied evenly across the surface of media to provide control across the whole pot surface. This can be achieved either with a hand-shaker or with an applicator such as a handy-green spreader that will spread Rout across the whole bed. The Handy Green Spreader works well for small plants where most of the media surface is exposed.

The spreader is not suitable for re-application to larger plants as they will prevent Rout from evenly covering the media. For best results, Rout should be applied after watering newly potted plants to help 'bed-down' the media. Rout should be applied after foliage has dried so that granules do not stick to leaves or alternatively foliage can be gently rinsed.

Some growers report differences in efficacy of pre-emergent herbicides depending on who has applied the product, which demonstrates that achieving the correct rate and product placement is critical to achieving good, long-term, weed control. Please contact your local ICL Regional Manager to organise a training session for staff in your nursery.



Figure 2 Even though pots are currently clean (Rout was applied) heavy weed pressure around edges of growing beds will provide a continuous source of new seed.



Figure 3 Weeds surrounding growing areas, or in any other places in the nursery, provide a source of seed that can quickly infect growing beds and spread to other areas.

How long do Rout and Sierraron 4G last?

For environmental reasons, both Rout and Sierraron 4G use active constituents that are biodegradable. In the weeks following application, the concentration of the herbicides will slowly degrade until their concentration becomes too low to provide ongoing weed control. Some weed species are more sensitive to the herbicides than others and the least sensitive species will be the first to emerge some weeks or months after application. In warm and wet conditions degradation rates are faster, but on average Rout would normally require reapplication after 2-3 months. Sierraron 4G may provide control for up to 6 months depending on the situation and rate applied. As per the Rout label, a high number of weed seeds can shorten the effective period of control, which highlights again that pre-emergent herbicides should be included within a broader Integrated Weed Management program that limits the spread of seeds and not as the primary or sole method of weed control.

Final Remarks

Weed management is an ongoing challenge for many nurseries. Our best advice is to formulate a plan of attack that includes as many different control strategies as possible. Herbicides are an important part of most nurseries integrated weed management strategy but should not be used as the sole method of weed control. Preventing the introduction and spread of weeds will be far less expensive than trying to control an established weed problem. When herbicides are used, be sure to follow the label directions for best efficacy. Regularly calibrate Rout and Sierraron 4G applications using the free ICL calibration tray and feel free to contact ICL if you would like to organise a training session with staff in your nursery.

1 Neal, J (2003) Understanding and managing nursery weeds. Technical Nursery Papers Issue 11, 2003. NGIA Ltd, Epping.

Maximising quality & productivity

For Southern Woods, simplification and optimisation demonstrated that less can be more

Located in Christchurch, New Zealand, Southern Woods supplies a wide range of trees, shrubs and grasses, with key markets being farmers, foresters, councils and landscapers.



With the business expanding, a strengthening demand for New Zealand natives, and a product range of over 500 plant species, there was an increasing need to maximise quality and productivity.

Headed by nursery managers Nilan Gooneratne and Nilantha Chandrasena, the Southern Woods team identified the need to simplify and optimise what had become an overly complex range of fertiliser mixes.

To achieve this, ICL Regional Sales Manager Nicola Rochester was asked to assess and advise on a new tailored nutrition program that would ensure delivery of healthy crops in preparation for Spring.

Bringing technology to precision nutrition

Nicola worked with Nilan – and ICL’s precision nutrition tool, AngelaWEB2.0 – to calculate a fertiliser program using a wide range of inputs that included growing media, pH, Electrical Conductivity, water sources, fertigation systems, climate, and the plants’ specific nutritional demands.

“Once I saw the graphs from Angela Web – you could see that it was achievable to get a more stable release pattern so that we could eliminate topdressing in the Spring”.

Trials were conducted on NZ Natives using Osmocote Exact 8-9 Month and on Eucalyptus & Acacia where the product of choice was Osmocote Pro 8-9 Month.

Overall Nilan and Nilantha were very happy with the results “Over time, the controlled released nutrient in Osmocote produces a stronger and stockier plant”.

The result of rigorous field testing and on-site experience by ICL Specialty Fertilizers technicians around the world AngelaWEB2.0 is a sophisticated software programme designed to help optimize plant quality and grower returns.



1

1 Nilantha Chandrasena examining trial *Chionochloa rubra* plants. With stronger roots and greener at the base, the trial to the right has been grown with Osmocote.



2

2 ICL’s Nicola Rochester with Nilan Gooneratne describing *Eucalyptus* as stronger growth not leggy.



3

3 “This is the best I’ve seen these *Dodonea*. They are exactly how I would want them to be going into winter. And I am confident they will be as ready as they’ll ever be heading to Spring” said Nilantha.

9 Nine steps to precision nutrition

With a focus on maximising yields, increasing productivity, reducing nutrient wastage and saving management time

AngelaWEB2.0 software integrates a range of inputs from plant type to day-to-day operations. These are the steps an ICL advisor will carry out to provide you with a unique nutrition program tailored to the needs of the plants in your nursery.

- ① The type and variety of plant is entered along with growth patterns and phases, plus specific cultivation requirements.
- ② The types of growing media are then entered together with the growing media’s pH and Electrical Conductivity (EC) to create the basic foundation for assessment and planning.
- ③ Data from detailed analysis of water sources and how they will be applied is then input.
- ④ Types of fertigation systems, the number and volume of mixing tanks, and fertigation control systems are assessed and taken into account.
- ⑤ Assess climatic and seasonal influences.
- ⑥ The plant’s specific nutrition demands are now displayed as well as options to create individual or combined fertiliser and fertigation programs.
- ⑦ Day-to-day operations, market drivers and opportunities, and business and production processes can be factored in.
- ⑧ The software then calculates a fertiliser program to suit the specific requirements of the nursery. Graphs show EC levels and percentage of plant nutritional needs fulfilled at each growth stage.
Controlled Release Fertiliser and Water Soluble Fertiliser simulations can be included.
- ⑨ As the season progresses and certain elements change (such as water sources) the existing data can be easily retrieved, quickly updated and a new optimised fertiliser program created.

With Osmocote, we’re growing together

Around the world, ICL has celebrated 50 years Osmocote and we would love to hear your Osmocote story.



We developed the world’s first controlled release fertilizer 50 years ago. This sowed the seeds for five decades of innovation.

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Our commitment? You can count on us. We’re ready for a future of growing together for generations to come.



USA: Making the switch to Osmocote in 1973

“We were so impressed by the results – that made it really easy for me to talk Takashi into buying it. He could see the difference that Osmocote made.”

Alfonso Ramos,
T-Y Nursery, California USA



FRANCE: Adapting to an ever-changing horticulture market

“Osmocote guarantees uniformity in our production. I brings us peace of mind.”

Patrick Morgue,
Nursery Patrick Morgue,
Drôme, France



NEDERLANDS: Top quality plants continues to be our aim

“Osmocote provides consistent quality, good support and innovativeness.”

Wouter Van den Oever,
Nursery M van den Oever,
Son en Breugel, Nederlands



UK: A local reputation for an unbeatable selection of plants

“You hear that our stuff is better than our competitors’. And one of the things that’s down to is Osmocote.”

David Mills,
Clockhouse Nursery
Forty Hill, North London, UK



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