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Rust risk - *diminishing* Aphid risk - *nearly over*

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Food for thought

After doing a lot of driving around the WA countryside this year including a trip to Victoria, sadly there are an awful lot of poor crops and pastures around. I usually like to encourage you rather than kick you up the pants ☺, but sometimes a little prodding is needed, I think, and so this newsletter has a few kicks ☺.

My intention is to encourage you to farm better and be a lot more profitable. I hope you can take a moment to read this newsletter and contemplate a few things you can improve on and not be offended or dismissive of some of the thoughts I have written.

Seen the countryside?

More than usual, driving around WA this year has disappointed me just how badly so many of you farm. Sorry. Have a look when you are driving around. See how many pastures are fence to fence capeweeds, brome grass, radish, and are starving for nutrition ☹. Many pastures are so starving I've seen people feeding out hay in late September. This is crazy as these same areas have had an excellent rainfall season.

Have a look how many tabletop crops there are? Very very few ☹. The majority by far, despite a reasonably good rainfall year for many, have crops full of weeds, are starving for nitrogen

The photo to the right has had similar rainfall to another farmer who looks like achieving over 7t/ha. Is rainfall the problem? Nope. Just really bad agronomy.

let alone all the other nutrients, are patchy and thin with lots of root diseases and nematodes, and have lost more than half the leaves from leaf diseases.

In the same area that someone looks like achieving over 3t/ha canola and over 6t/ha cereals, over a very wide

area you will see 90% of paddocks of other farmers looking like only yielding around 1.2-1.5t/ha canola and not much over 2.5t/ha cereals ☹. Rainfall differences are not the reason.

In the northern WA wheatbelt where I saw a "few" paddocks of wheat looking like 4+t/ha, most paddocks are half that yield potential, and have a lot of weed problems.

Prompts for the coming month

- 1) Order some CHYB-166 RR canola from Canola Breeders of Australia (www.cbwa.net.au) or Coggo.
- 2) Spray empty silos/sheds with appropriate insecticides before harvest.
- 3) Harvest Buloke barley ASAP.
- 4) Can swath lupins with sprayline instead of crotopping if they are tall enough.
- 5) Watch for smut and bunt in wheat. Pickle all wheat varieties next year if you see one infected head.

There is so much more to farming than rainfall. Rainfall for 90% of you is "not" your most limiting factor to profitability. There are so many mistakes made in farming and these are far more important to your profitability than rainfall. You are not using what you are given.

Farmers like Robert Ruwoldt (Victoria) are a breath of fresh air. He does what I would be doing, only even better





30" row spacing. Beautiful stubble on the ground. Great weed control. Excellent canola.☺

what I can see.

A pre-warning: In the rush to get some CHYB-166 RR canola into trials this year in WA, the bulk up was apparently not as thorough in rouging out some plants as is happening in this year's bulk ups, and these rogue plants in this year's trial seed are sterile.

They have grown all year but will be producing no seed, so it is likely that this variety's yield results will not be as good this year as it was last year. However, this is a great variety compared to the other RR options at the moment in Australia. We may need to ignore this year's trial results as it isn't going to show the variety at its true yield level that it would if it were pure seed.

Biological farming

Adding bugs to soil is like adding a drop of fresh water in the ocean and expecting it to make a difference. Only if they are applied to the seed or roots could they have a chance to influence a plant, which is what we do when we inoculate legumes with rhizobium.

There are billions of bugs just waiting to eat whatever bug you add to the soil.

It is very true that the more bugs there are in the soil, the better the soil health. Earthworms are great indicators of soil health. The main thing these bugs and earthworms need is food and water. Their food begins with plant residues (stubbles) on the soil surface and roots in the ground. Burning or removing stubble is removing long term fertiliser and food for your soil bugs.

Nature works from the top down in soil so it is against the way nature works when you think you are helping break down residue by incorporating it. This is the wrong thing to do.

We want stable soil aggregates (stable lumps of soil when in water) and these only form in the absence of cultivation and compaction and require long term organic carbon input. It relies on fungi and earthworms to bring stubble below ground so that it eventually turns into organisms and slow release organic carbon compounds.

than I ever could☺. No sheep, no-till, no compaction, using technology wherever it improves efficiency, measures and monitors all inputs and results, loves and knows how important residue is to profitability (soil health), uses diverse rotations as much as he can, and achieves the most amazing yields on such little input.

Like I said, he's a breath of fresh air. I have never heard him complain about needing one more inch of rain. He makes most of his profit in droughts !! However, his crops look like shattering a few profit records this year☺.

It is not soil or rainfall why Rob and other great farmers are doing so well. Their neighbours have the same soil and rainfall !!!!!

It isn't just because of their machinery or that they tramline, or that they use more fertiliser than others etc... It is their attitude to doing everything well for the health of the soil for profitability.

Later in this newsletter I have written a little summary of the different groups of farmers I see. Please do not feel intimidated. I am just longing for everyone to improve ASAP and want to make you think and encourage you to improve your profitability. Life is just

too short to keep on struggling unnecessarily with farming. Life is hard enough as it is.

You can achieve so much more profit than you think is possible. Don't stay the same. Improve and learn. Hopefully when you read later in this newsletter about the groups of farmers I see in Australia, you will see some clues where you need to give more attention.

First new generation RR hybrid canola

The first new generation RR hybrid canola (CHYB-166 from Coggo and Canola Breeders WA—www.cbwa.net.au) is apparently going well in the bulk up and so more seed than originally expected is likely to be available for sale. This is great news.

I strongly recommend all canola growers grow this one as much as they can and one of the excellent Clearfield lines like 46Y78 (an outstanding variety), 45Y82 (quicker than Y78 and visually looks excellent in trials) and 46Y83 (2% higher oil than Y78).

Your local seed agent should be able to order CHYB-166 for you. It is the best RR canola for next year (2010) from



Carlos Crovetto calls these “monuments to stupidity”. And I thought I was blunt☹. “The stubble is food for the soil” is his mantra.

Mycorrhiza fungi appear to be crucial in forming fertile well structured soil and require live plants to be growing as much as possible. This group of fungi help plant roots take up water and nutrients the plants are unable to, and they secrete **glomalin**, a glue type protein that helps form the very valuable stable aggregates in the soil.

Inside these aggregates is a home to millions of bugs that could not survive in the soil without these glomalin formed stable aggregates.

Cultivation encourages bacteria to break down the residues for a faster release of nutrients, however this releases a lot less nutrition in total and prevents long term stable soil aggregates from forming. A lot of the nutrition in the residue is oxidised (same as a fire) and is lost to the atmosphere, which is part of the smell you experience when you cultivate a

soil.
You never obtain long term fertility when you cultivate. You have no hope of achieving amazing yields with low inputs if you cultivate or compact the soil.

The only time nature cultivates a soil is in a catastrophe – landslide, erosion etc...

When you see the best long term no-till farmers doing as many things right as they can, their yields and profits are amazing, but there are very, very few of them. **Their soil is the closest you can get to biological farming I reckon.**

Organic farmers cultivate. That is never good for the soil and their yield performances are woeful compared to the best cropping farmers.

Anyone selling you a bug or fungus to improve soil health is only trying to make themselves a millionaire at your expense. They are snake oil peddlars to me.

The research and comments from people like Jill Clapperton, Kristy Nichols, VVSR Gupta and Margaret Roper show and say over and over you just need to grow organic matter, leave it on the surface, and grow different types of organic matter as much as you can.

Their science is sound and is reality. When you see the soil of the few long term no-till farmers who have the passion for keeping every gram of residue they can on the soil without compaction but with as much crop diversity as they can, and of course no livestock ever on the paddocks, then you see what biological farming is about.

When you see someone achieve 4.5t/ha on 155mm of rain when neighbours had dead or woeful crops, that is the power of soil health. Yet so many of you still do not learn how these great farmers achieve these results and ignore reality that they are doing this.

When I give talks, I mention the “yeah but” syndrome where such successes are dismissed with excuses why it will not work where you are☹.

I find this very sad especially when I see so many of you struggling for profit and then listen to these peddlars of false hope selling all sorts of bugs, crushed rock and other muck and mystery products.

In one sense, farming is very simple. You stick a seed in the ground and it will grow as well as it possibly can. Your job is to remove as many obstacles and hindrances as you can while making as much profit as you can.

Croptopping – 80% leaf drop on lupins.

When lupins are at the 80% leaf drop stage, there is very little to no yield loss



Left is about 60% leaf drop and right is >95% leaf drop. Left needs about another week to be around 80% and right could have been croptopped 1-2 weeks earlier.

when spraying it with paraquat or glyphosate products (croptopping). By this stage almost all seed is only losing moisture and no more goodies from the stems and leaves are going into the grain.

But this stage is also the stage you can swath lupins. If they are tall enough (above 50cm tall is ideal but as low as 40cm is still effective), you can swath them and use a sprayline on the swather (windrower) to also control the weeds that are there. It saves driving over the crop causing more yield loss if you were croptopping.

Never give weeds a chance to set seed if you can help it. If you get a chance to crop top, take it ☺.

Remember that a **yellow leaf is counted as a dropped leaf** when trying to decide if 80% of the leaves have dropped.

Dead tips in canola

You may have seen the symptom in canola this year like in the photo below. This is calcium deficiency, but it is



almost “never” because the soil is deficient in calcium.

Calcium is needed in the growing tips of all plants and when canola flower buds elongate rapidly in early Spring when the soil is either waterlogged or too dry, the plant cannot extract enough calcium (Ca) from the soil fast enough to satisfy the crops demands, and so the growing point dies.

But researchers have tried many times over the decades to spray calcium products on canola to cure this problem, but it is rare as rare to get a yield response. This is because it is an environmental problem rather than a nutritional problem. The deficiency is only transitory. The other branches usually compensate.

I have never recommended any crop be sprayed with calcium. I believe it is a nutrient to be ignored in almost all cases in broadacre agriculture.

Fipronil in empty silos

Fipronil (found in Cosmos and Regent) is an insecticide that is very safe to mammals, but is deadly on nearly all hard shelled insects. The label rate for termite control is 0.06% solution (eg 12ml Cosmos per 10L water) sprayed until the surface reaches the point of run off, and this gives five years control.

If you used the same concentration around and in “empty” silos, not only would you have no termites or ants around, but also no earwigs or beetles or weevils or borers. These latter insects can still enter silos via vents, but if all surfaces and cracks have fipronil in them, it will kill these insects for many years.

Half that rate but more water will work well for a year or three:-).

This may not be registered for some subscribers so don't let grain come into contact with the spray. Let all surfaces and cracks dry for weeks before putting grain in treated storage

areas.

You should still be using sealed silos and cooling technology to give other grain insect control options, and perhaps other options that are still being tested such as using spinosad on the grain at 1mg/kg grain.

Pod abortion in lupins

This used to be a major problem with older lupin varieties. Excessive vegetative growth often resulted in significant pod abortion on the main stem. This is now rarer with Mandelup and especially with the newest, highest yielding variety “Jenabillup”.

However, pod abortion is not just genetic. Cloudy weather during flowering will often cause pods to abort that were forming at that time, presumably because the plant couldn't give them enough energy to fill. Usually the later branches will pod more to compensate so it is not a significant problem as long as sunshine comes soon after.

Another main cause of pod abortion is manganese deficiency. Narrow leaf lupins (*angustifolius*) are more prone to manganese deficiency than other crops.

The most visual sign you will see is seed that has split. It looks like the seed coat is too small for the seed contents. Another visual symptom is at the end of the season; some plants are still green with no pods on them.

When you see split seed, your paddock will usually have aborted seed and pods, but obviously seeing split seed at harvest is too late to stop it.

The cure is manganese down the furrow at seeding (work on around 2kg Mn/ha in a liquid stream and then reduce accordingly over time), or spray when the pods are about 2cm long on the main stem, and again when they are ~2cm long on the lateral branches.

The two main spray options are 4kg/ha Manganese Sulphate or 500ml/ha Mantrac + 0.2% wetter or Li700 + 1% AMS.

If you see manganese deficiency in

your cereal crops in a paddock and are planning to sow lupins in that paddock, you should plan on using manganese without waiting to see if it is a problem or not. It will be a problem in the lupins.

Where it is more difficult is when you never see manganese deficiency in cereals and are sowing lupins on the paddock. Firstly check to see if pods are aborting too easily (some abortion is normal because the plant cannot fill all the pods it produces).

If the soil is a deep acidic sand and the lupins are aborting pods too easily, then it would be prudent to spray it with manganese ASAP.

You can also do a tissue test when the main stem is flowering by cutting the plants at ground level and pulling all the branches and leaves off so you are left with the centre stick.

Send a handful of these off for testing. If there is 20mg/kg or less of Manganese, your crop is deficient and will need spraying with manganese. Testing the seed is not reliable.

Also check the seed at harvest time. If you see any split seed, you know you will need to use manganese next time you sow lupins on that paddock (or soil type).

Another source of pod abortion is a disease often called the black pod syndrome. This is still an unknown disease complex that is being researched this year, but Jenabillup is tolerant to this syndrome which gives its substantially higher yield over other varieties.

And the final cause of pod abortion can come from viruses like Bean Yellow Mosaic Virus (BYMV — also thought to be implicated in the black pod syndrome).

This is where the flower buds die back into a shepherds crook shape and then the stem dies back down the plant aborting the pods and then usually killing the plant if infected early enough. This virus is transmitted by aphids in narrow leaf lupins.

Guidance without satellites (a simple shielded sprayer)

In September I took a group of farmers (mainly from WA) to see a few excellent no-till farmers in Victoria. One of the very interesting farmers was Leigh Bryan near Swan Hill. He was using some guidance equipment on his home



The Eco-Dan controlled shielded sprayer of Leigh Bryan. In photo above, the arrows point to where the spray bar is moved left-right by the Eco-Dan unit. Simple shielded spray modules below that swivel on the bar. Simple and cheap.



made shielded sprayer that amazed me.

He was using an Eco-Dan unit to move the spray bar instead of satellites guiding the tractor. I don't know how it sees the rows so well but it appeared to work really well. It of course relies on the rows being sown dead straight in the first place ☺, and uses light to see the ridges or plant rows, therefore at night you will need to supply a light source to help it out.

And Leigh's idea of using large poly pipe that swivels freely as the shielded spray unit is a wonderfully simple idea ☺.

Eco-Dan equipment is sold in Australia through GPS-Ag.
(www.gps-ag.com.au)

The future of shielded sprayers

If you had this equipment on the farm, I would be using it here and there, and probably more so when we have robotic tractors, but I think the attractiveness of them will diminish a little with the advent of GM crops.

As I have been telling my clients, I believe this was our last year of weed "problems". From now on, we will find weed control become a lot less difficult with the advent of GM crops and the availability of new novel herbicides, and hopefully with much cheaper propyzamide (eg Edge, Kerb).

Shielded sprayers are slower and I thought the technology was not good enough yet to have a 120' boom with shielded spray units on, but perhaps it is closer than I thought with products like Eco-Dan, provided the large boom is divided into sections with their own Eco-Dan unit and every shield has a cut-off sensor to prevent it spraying over where it has already been sprayed.

Bare and non-wetting sand

Planting millet after harvest on bare and non-wetting sand adds diversity (if it germinates and grows☺), can temporarily fix non-wetting soil (for 2-3 years in my experience) and all crops like growing after it.



French White Millet

The downside is that because millet is a host of fusarium head blight (Scab), it could infect the following cereal, so if that disease is in your area and you usually receive rainfall while wheat is flowering, then I would be a little cautious in sowing a cereal after the millet cover crop. Sow canola or a legume instead.

This millet technique is for paddocks that are sandy, are non-wetting, and find it hard to grow enough stubble to protect the soil from wind erosion.

Immediately a paddock has been harvested, sow ~10kg/ha French White or Shirohie millet 1-2cm deep. Because you would be growing it as a cover crop, you would normally not apply any fertiliser unless the paddock was very infertile.

If the plants get to about 60cm high, you can then spray them out with glyphosate and let them rot down. In my experience, where millet has grown is the first area to wet up with the first rains and are the best paddocks to sow first.

You could of course let the crop grow through to harvest, but it is unlikely to be successful unless it rains a lot all summer (you would normally need to

sow millet in September to get it to mature before winter in southern areas).

If broadleaf weeds dominate, you can use options like a little Ecopar (pyraflufen), Affinity (carfentrazone), MCPA, 2,4-D or Lontrel (clopyralid).

Millet will not be a problem in next year's crop because it doesn't grow much during winter and is easily damaged or controlled with grass herbicides, propyzamide, SU's and IMI's.

Snippets

1. Typical rate of glyphosate in the sprayline while swathing is 1L/ha of 450g/L product. Can add 5-7g/ha Ally (600g/kg metsulfuron) or 15-20g Logran BP or 50-100ml Ecopar (20g/L pyraflufen) or 250-500ml Pyresta + 0.5% Hasten (or similar) + 1% AMS + 0.2% Li-700 if broadleaf weeds need more oomph.
2. Instead of croptopping lupins, if they are taller than 50cm (approx), you can swath them with a sprayline at the same time as croptopping. Saves driving over the crop causing more damage, and will be less susceptible to shattering losses.

3. Insects in canola swaths can be a headache at harvest. Harvest in the heat of the day as much as possible to reduce the numbers of insects on the plants, but spraying insecticides over the top is not a great idea with the insecticides we currently have available. The risk of residues being in the crop is very high. The



Bronzed field beetle. One of the insect problems in canola windrows.

lower risk time to spray insecticides is do it in the sprayline so that the insecticide is more on the ground and very little on the windrowed plant material. All insecticides will kill the good bugs as well, which in themselves can be a harvest problem such as ladybirds.

A mix of 150ml each of chlorpyrifos and cypermethrin is deadly and cheap.

4. The risk of rust problems is decreasing with each day that passes now, and the aphid risk is also diminishing as conditions dry up and predator numbers increase rapidly.
5. **Rancona** seed dressing. This a new one in Australia that will initially be registered only for smuts and bunts on cereals, but seeing what other diseases it is registered for in other countries looks like it will be an interesting product, if the price is right. It contains 20g/L ipconazole and label rate will be 1L/tonne of grain. It should be available by December 2009.

Adjuvants and resellers

I read some thoughts recently in another consultant's newsletter about adjuvants and resellers that I thought hit the spot and so I asked for permission to reprint that article here in this newsletter ☺.

The following article is courtesy of Tony Good from his MS&A newsletter (issue 249: 16th September 2009 – www.msanda.com.au).



I showed photos of this paddock in the December 2008 and February 2009 newsletters (it was in barley and averaged 4.5t/ha on 155mm rain). Now it is lentils. Awesome lentils. Perhaps 4t/ha or more? I am hoping to be sitting on the header to enjoy the fruits of this excellent farmer's labour ☺.

Adjuvants

There has been some discussion about the use of generic adjuvants after the bulletin two weeks ago. Let's face it, with some notable exceptions, most generic adjuvants are of similar quality to the proprietary products – what should do you do when you are *switch sold* by a reseller?

Think of this analogy. You have just purchased a new \$300,000 machine with extended warranty. It goes in for a service and comes back from a dealer service with non-genuine filters. The mechanic says "non-genuine filters were fitted because they were \$5 cheaper". He goes on to tell you that he has never used them before but they should be okay because the sales rep said they were, and by the way if the machine breaks down you have voided the warranty. What would you do?

Think of this – you have a crop worth \$300,000 with some weeds, the label states the need for a specific adjuvant, say Uptake. You request Uptake but the reseller supplies a different adjuvant. He says "Use this adjuvant it is the same as Uptake. It should be okay because the company rep said it was, and by the way if the herbicide does not work you have no recourse".

What would you do?

Is it worth the 15 cent/ha (approx) saving? If you are OK with being *switch sold*, at least ask the reseller to warrant the switch by writing on the docket that the generic replacement is the same as the product requested.

It is now noted that some resellers list a generic product and the proprietary product in brackets alongside it on invoices. You would presume they are assuming this responsibility.

Editor: Resellers, please take note of those last two paragraphs. There are legal ramifications when you "switch sell" to your clients and say it is the "same" as the requested adjuvant, when usually they are not.

20 years no-till

Here's a little spiel that has been going through my mind for a few months and with the passing of two friends recently, the thoughts of life being fleeting kept playing on my mind while looking at thousands of crops and pastures that were performing way below what they could be doing.



A very common sight this year in WA. Sometimes it is from the ryegrass being resistant, sometimes the adjuvant didn't work, sometimes the version of Select (clethodim) didn't work. Whatever the cause, they must not be allowed to set seed.

And then I realised it was 20 years this year since no-till began in Western Australia and we still have so far to go. The bottom 90% of farmers are so far below the top 2%. So many of you can make a lot more profit if you would only implement better agronomy.

So I have described a few groupings of how I see cropping farmers in Australia.

The “best” no-till farmers (these are a very rare species):

These farmers achieve amazing yields and profits. They love their stubble, understand stubble is food for the soil, do not let sheep or anything eat their stubble or compact their soil and do not bother making snake oil sellers rich (eg sellers of soil bugs, humic acid, crushed mineral rocks to name a few).

They have a long history of fixing nutrition problems quickly, constantly measure their fertiliser inputs to see if they can cut back or need more, and use technology quickly that helps them farm more efficiently like tramlining, variable rates, shut off technology on their boom and seeder etc...

They are very quick to control weeds and will always, always control a patch of weeds even if it means putting

Roundup over that patch (ie they hate weeds with a passion). They know and learn about new herbicides better than most because of their passion to control weeds, they understand more than most about good soil biology and know about mycorrhiza, nematodes, root diseases and love seeing healthy roots.

You almost never hear these farmers say they need a good rainfall year. They accept that is out of their control and they concentrate on what is in their control.

These farmers have seen enough amazing benefits of what they have been doing to not be afraid of droughts. In fact, they usually make the most money in a drought because they have good crops while others have none or minimal and prices are at their highest.

Almost all of these farmers have high levels of on-farm storage and will not sell their grain if they do not like the price.

The “good” no-till farmers (these are a little more numerous):

These achieve good yields and

profits, but almost never achieve amazing yields and profits.

They try to keep their stubble but often let sheep and cows graze it in summer, are slower to control weeds and do not feel uncomfortable seeing a few weeds in their crops.

They are usually good on nutrition and are comfortable using highish rates of phosphate fertilisers every year, but are slower to add enough nitrogen or fix trace element problems when needed, are slower to use technology that helps them like autosteer, variable rates and most of them still do not see the value of tramlining nor understand the problems compaction causes, and sadly have a little too much pride in buying new big toys.

But like the “best” no-till farmers, they are good organisers in keeping equipment serviced and ready to roll, and they like to grow a variety of crops for longer term profit rather than grow another cereal on top of cereal just for short term profit.

The “common” no-till farmer (the majority):

These use a no-till seeder, but have the most weeds, usually the lowest profits, are prone to have three or more cereals in a row because they need immediate



Chickpea pod.

cashflow, regularly have crop failures from weeds, diseases and poor nutrition, and think it is not worth it to bother with tramlines, variable rates etc...

This group dream of having a good rainfall season to get them out of trouble, but when it comes, the best farmers make even more profit and purchase more land before they get a chance to.

They have no passion for stubble retention (calling it trash) and if they go and see one of the "best" no-till farmers, they usually walk away saying it won't work for them because of soil type, location or rainfall differences☹.

It continues to puzzle me how we can see someone do amazing things, but come up with excuses why it won't work on my place, when instead we should be asking questions trying to learn what that good farmer is doing that we are not.

Summary: We have a long way to go. There is more to farming than rainfall. Most paddocks are farmed very poorly in Australia and so much of what we know is the right thing to do are still not done. We keep looking skyward thinking rain is our saviour while others are achieving double the yield with the same rainfall, but we come up with excuses instead of asking why they are successful and we aren't.

I hope that in ten years time, we will see the majority of crops being table-top and being close to the potential and everyone is a lot more profitable than they are now. It is up to you.

Cheaper herbicides

For the past two months we have access

to very cheap glyphosate products (\$3.70-3.90/L for 450g/L products), and trifluralin around \$5/L. I don't know how long this will last but those prices are pretty hard to ignore after the high prices we have had to endure recently. I'm tempted to stock a few thousand litre shuttles in the shed☺.

Weed blow outs and next year

In the next newsletter I will list my suggestions for weed control strategies to help you make sure you have enough of the right herbicides ordered for next season. With this years weed blow outs in WA, there are going to be many very difficult problems you will need to carefully plan around.

In the mean time, do whatever you can this year to stop weeds setting seed.



The picture to the right is showing the parasitic wasp larvae doing their work on an aphid colony. All those bloated bronze coloured aphids have a wasp larvae inside feasting, and the arrows at the top show where those larvae have turned into adult wasps and flown away to continue the cycle.



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