**GRDC Podcast-NVT Breeder-Lentil\_Lupin\_Sorghum\_1.mp3**

[00:00:05] **Introduction** This is a GRDC podcast.

[00:00:11] **Sally Maguire** Hello, I'm Sally Maguire. Welcome back to GRDC's National Variety Trials or NVT new variety podcast series. The NVT program aims to assist Australian grain growers in varietal decision making by providing comparative information of commercially available grain varieties, including on yield performance, on disease resistance ratings and on grain quality. In this four part series, we are hearing from a range of breeders across seven crop types, with each one providing information on newly commercialised cultivars in the NVT program that will be available to growers for the first time in the upcoming season. Today we will be covering lentil, lupin and Sorghum. To kick us off, let's hear from Dr. Larn McMurray from Grains Innovation Australia, who will take us through two of GIA's lentil varieties.

[00:01:05] **Larn McMurray** GIA Thunder is a broadly adapted imidazolinone or IMI tolerant small round red lentil that offers growers high and stable yields across all lentil growing regions. GIA Thunder has been evaluated in NVT trials for three years and has been the highest yielding variety in each year across all trials in Australia. NVT predicted yields from 2020 to 2022 found that GIA Thunder averaged 11% higher yields than GIA Lightning and 13 to 14% higher yields than all other IMI tolerant lentil varieties across all NVT sites in Australia. GIA Thunder is a mid-flowering and mid-maturing variety with better vegetated frost tolerance than GIA Lightning and other IMI tolerant varieties. The IMI and soil residue sulfonylurea herbicide tolerance of GIA Thunder is similar to existing IMI varieties. GIA Thunder's rated resistant to the Nipper virulent strain of ascochyta blight and moderately resistant moderately susceptible to the Hurricane strain. The same is for GIA Lightning, but it has an improved botrytis grey mould rating of moderately resistant moderately susceptible over this variety. The small size grain and uniform grey seed coat of GIA Thunder is well suited to the small premium round grain lentil markets, with its seed size similar to other currently accepted small varieties. GIA Thunder is licensed to PB Seeds as an End Point Royalty of $5.94 per tonne, including GST, and was developed by GIA for its high yields and broad adaptation across all lentil growing regions of southern Australia. GIA Metro is the world's first dual herbicide tolerant lentil, combining both imidazolinone (IMI) and metribuzin herbicide tolerances. This unique herbicide combination will expand lentil production through broadening weed control options, particularly on light textured soils prone to damage from the application of Group 5, previously Group C, herbicides. Metribuzin is now under permit for post-emergent application to GIA Metro only at the three to six plant growth stage. Grain yield is significantly lower in GIA Metro than existing lentil varieties in the absence of weed pressure or where weeds are controlled effectively without crop damage from Group 5 herbicides. But as GIA Metro provides an alternative in-crop herbicide to IMI due to superior control of some broadleaf and Group 2 herbicide resistant weeds, GIA Metro can be an option where weed competition and all current herbicide options prohibit economic and sustainable lentil production. GIA Metro's a late flowering and mid to late maturing variety suited to early sowings and environments with favourable seasonal growing conditions. The IMI and soil residue Sulfonylurea herbicide tolerance of GIA Metro is also similar to existing IMI varieties. GIA Metro has good levels of resistance to ascochyta blight disease and is rated moderately resistant moderately susceptible to botrytis grey mould. GIA Metro is a large, lens shape red lentil with a grey seed coat. It was bred by GIA using a metribuzin trait from a project funded by GRDC and SARDI, with seed available from PB Seeds and an End Point Royalty of $8.25 per tonne, including GST.

[00:04:07] **Sally Maguire** Moving on to lupin and joining us next is Australian Grain Technologies' breeder, Dr. Matthew Aubert, with an announcement about their new varieties of lupin.

[00:04:17] **Matthew Aubert** We're here to announce that we're releasing two new lupin varieties. So Australian Grain Technologies, or AGT, has been breeding lupins for about eight years now. When we took over the lupin breeding program from the ag department back in 2016. So I'm here to talk to you about the two new releases. The first one is a variety called Gidgee. In the Lupin breeding program we have a naming convention after WA gold mines, so Gidgee is a large gold mine in WA. So this new variety is a high yielding alternative to Jurien, which is the most commonly grown lupin variety in WA. It's high yielding, it has a very good disease package like Jurien has, so you're going to be covered for most diseases if you choose to grow this one. It's a quick variety, like most other modern lupin varieties. It's got the maturity of Jurien, so if you're used to growing Jurien, you're going to be used to growing Gidgee. It has a slightly shorter plant type, so it's more like a Barlock size lupin. It's also a key distinguishing trait compared to Jurien is that it's tolerant to split seeds. So split seeds is a recently discovered trait in lupins, where the seeds split during seed development within the pod and Jurien is particularly intolerant to this, so Gidgee is tolerant. So, where you've seen splitting in your Jurien, you won't be seeing that in your Gidgee. The next variety that we're releasing is one called Rosemont. Again, Rosemont is a large WA gold mine. This one is similar to Gidgee in the fact that it's high yielding. It's not as quite high yielding as Gidgee is, it's a couple percent lower, but it's a good all-rounder for across the regions. So it'll be performing well in north, central and south, whereas Gidgee will perform well in the north and central. So Rosemont again has a very good disease package like Gidgee and Jurien, and is very tolerant to split seeds as well. It's key distinguishing factor against Gidgee is that it's slightly slower maturity. So it's still considered a quick but it's a good four days slower, so it's more like that Barloock and Coyote maturity that growers might be aware of. Another key trait for it is it's quite a tall plant type, which is a bit different to some of the other more modern varieties of lupins and has very good early vigour. So we're deciding to release these two varieties because we believe they will fit into different farming systems and they might like that taller plant type and early vigour for what they might need. So both of these varieties are going to have an EPR value of $4.50 and grain will be available in limited quantities next year in 2024 and more widely available in 2025. So both Gidgee and Rosemont have been in the NVT for a number of years. So Gidgee has been in there for I think this is its third year in the NVT and Rosemont, it's its second year in the NVT.

[00:07:15] **Sally Maguire** And now to sorghum. First, let's hear from Ben Vercoe from Pioneer.

[00:07:21] **Ben Vercoe** So the first hybrid I've got to talk about is our newest hybrid in A88. So A88 has been an outstanding performer for the last two seasons in which it's been entered into the grain sorghum and NVT trials. It's yielded 110% of the average trial mean across all NVT trials in 2021 and 106% in 2022. A88 has been in hot demand from grain sorghum growers across all growing regions since becoming commercially available in 2022. Adapted to all dryland and irrigated growing conditions, A88 gets out of the ground quickly due to its early seedling vigour. This early growth sets up a robust medium height plant with medium tillering that contributes to yield from both the primary head, as well as the tillers. As with other Pioneer Seeds grain sorghum hybrids, A88 produces excellent pollen quality and quantity, with an even seed set across a primary head and tillers. At harvest, A88 dries down well, standability is very good and the large grain means fewer screenings and higher test weights. A88 is an admirable addition to the stable of A-series grain sorghum hybrids produced and distributed by Pioneer Seeds. A14 is another excellent new addition to the Pioneer Seed' grain sorghum line-up. This medium maturity grain sorghum hybrid has been in NVT trialing for six years with consistent performance, including yielding 107% above the average trial mean in all regions for 2022. Growers on the Liverpool Plains have found A14 to be a consistent yielder in their area, as have others throughout northern New South Wales. And now more growers in Queensland are also seeking A14 for its ability to deliver high yields year on year. A medium height plant, A14 exerts a large primary head, under certain conditions it will tiller and when it does, these tillers mature evenly with the primary head. In line with other Pioneer grain sorghum hybrids, A14 has good quality and quantity of pollen to promote good grain set and with a Midge resistance rating of seven, this protects the filling grain. At harvest, A14 will deliver large and bright red grain to support its reliable yield. A14 is a welcome inclusion to the stable of A-series grain sorghum hybrids produced and distributed by Pioneer Seeds. Interested growers are encouraged to contact their local Pioneer Seeds representatives for more information.

[00:09:58] **Sally Maguire** Still on sorghum. We're now joined by a senior plant breeder at Advanta Seeds, Dr Solomon Fekybelu, who has four sorghum varieties to take us through.

[00:10:09] Dr **Solomon Fekybelu** Viper IG is a quick hybrid. It Is developed mainly for three applications. The first one is to maximise opportunity for double cropping. Sometimes we have plenty of moisture left from previous winter crops that can be easily used by a quick hybrid like Viper IG. Alternatively, we can grow by variety early in the season so that the paddock would be ready in time for the next winter crop. The second important application is about planting windows. From time to time we might need the optimum planting window for many sorghum hybrids. When the rain happens later in the season, Viper IG can be used very safely. The third important application is to minimise the risk of crop failure. Viper IG has been part of the NVT for the last four years. The results from NVT, as well as our own trials, clearly shows that Viper IG has very good performance in tough environments. So Viper IG is now a good option to minimise crop failure risk in those tough growing conditions. The most important feature of Viper IG is its agro technology, which means it's resistant to IMI herbicides. If you are growing sorghum immediately after growing Clearfield winter crop, Viper is the best option to manage herbicide residue. The agro technology also allows in-crop application of registered IMI herbicde to manage certain difficult winter species. In summary, Viper IG is suitable for all sorghum growing regions – its particular development is to expand planting windows, minimise the risk of crop failure, and help manage certain difficult weed problems because of the IMI herbicide technology. However, it's also important to note that Viper IG is non-tillering. To maximise productivity, it's recommended to increase seeding rate, especially when it's grown in good seasonal conditions. Acclaim is released after extensive evaluation across all growing regions for the past several years. It has been also part of NVT for the last four years. So results from NVT, as well as our own trial series, clearly demonstrates that Acclaim is very performing consistent hybrid. Acclaim is designed to maximise productivity without sacrificing reliability. It has medium maturity and tillering ability coupled with high level of tolerance to moisture stress, which might occur both before flowering and after flowering. This feature allows Acclaim to develop preferred type tillers to maximise productivity when the season allows. Acclaim is not just a high yielding hybrid, it combines impressive features of agronomy characteristics. It has a very good standability, medium height, large grain, midge rating of seven. Acclaim has also head exertion and very good plant architecture which allows clean harvest. In summary, Acclaim is suitable for all sorghum growing regions. It can deliver a fantastic yield under both dryland and irrigated conditions. It is great to combine reliability under half growing condition with the capacity to respond well to better growing conditions. The Stirling is developed as a medium quick maturity with high yield potential so that it will have the flexibility to finish more quickly if the season gets tough or deliver good yield by growing normally if the season allows. This flexibility is made possible due to its high level of tolerance to pose moisture stress to stress which might occur any time during the great period. The sterling also features very good combination of characteristics, including medium height, excellent standard with teeth, good image rating, good criticise. The Sterling is released after rigorous testing sorghum growing region. It has been also part of liberty trials for the last two seasons. The result from all trials as well as any repeated trials, clearly shows that Sterling is a very reliable, superior performing hybrid. In summary, the Sterling is suitable for all sorghum growing region, both for early and late planting windows. It's primarily developed for dryland conditions. However, under hiring full of treated condition, it can deliver competitive unit better than many. Longer. Seasoned Tigres maestro is designed to have higher yield potential obstacles as the opportunities for higher you can be captured. Maestro is medium slow me due to this medium learning capacity that allows the club to produce more and. Every great maestro has also built in tolerance to moisture stress, which can occur at any time during the growing period. This meets reasonable performance even in less than ideal conditions. Maestro has been part of the individual traps for the last two years, so he's not a fool. And it clearly confirms our own results, which is that poor performance in many environments. Over the years, Maestro has caused the very combination of agronomic characteristics, including good stand ability, large grade three, colour grade and media rating of seven. In summary, Maestro is open for more sorghum growing environments. Obviously, under irrigation it has a potential to deliver frequent high yield as long as the management practices are optimised, even under dryland condition. Excellent can be to maestro is plant in deep soil with good moisture proper.

[00:16:03] **Sally Maguire** Today, we've heard from different breeders across three crops -sorghum, lupin and lentil. And just a reminder that the National Variety Trials or NVT program is completely independent, funded and managed by GRDC to provide growers with reliable information to assist in variety choice. As well as individual plant breeder websites, all the information about the varieties featured in this podcast can be found at nvt.grdc.com.au. I'm Sally Maguire. This has been a GRDC podcast. Thanks for listening.