Episode 58

00:00 – 00:11

(Music)

00:12 – 01:10

Hello, and welcome to Ear to the Ground, a podcast brought to you by Farming Connect, supporting Welsh farmers to adapt and thrive. I’m your host, Aled Jones, and this is episode 58. Agricultural inflation has become a big issue in farming over the past 12 months, with substantial increases in input costs, in particular fertiliser and feed prices. That has led us to invite James Daniel of Precision Grazing to join us on the podcast, to explore how livestock farmers can implement rotational grazing this spring, potentially on just part of the farm, to maintain or increase production whilst reducing the use of nitrogen fertiliser and purchased feed. This could be one approach to try and insulate your business from ever increasing input costs. Whether you’re listening to this in the lambing shed, on the tractor, or over a cup of tea, I hope you enjoy our conversation with James Daniel.

01:11 – 01:16

(Music)

01:17 – 01:40

Well, James Daniel from Precision Grazing, welcome back to Ear to the Ground podcast. You were with us on the very first episode of our podcast which was recorded back in September 2019, and we are now on episode 58. It’s great to have you back. We are recording this episode on the back of some pretty stormy weather of late. What’s it like down with you in Cornwall there?

01:41 – 02:00

It’s great to be back. That first episode seems a long time ago now. We’ve fared pretty well through the weather, thank you. It’s been particularly windy down where I am at the moment in the very west of Cornwall. But thankfully, we are used to wind, so no damage sustained to date.

02:01 – 02:08

It’s been pretty mild this winter on a whole, so I imagine you’ve noticed that grass growth levels have maintained pretty good so far?

02:09 – 02:25

Yes, they really have. It’s the winter you’d hope for, but never planned for. We’ve seen fantastic pasture growth across most parts of the country. It’s going to be really interesting to see what spring has in store for us.

02:26 – 02:33

Now James, tell us a bit more about your background and the story behind Precision Grazing.

02:34 – 06:29

I’m from a family farm in Cornwall. I’m actually from the inner town of Otterton, which is on the corner of the Devon border. We ran a suckler beef herd and a breeding ewe flock. When I was very young, we would lamb sort of January/February time, then as I grew up a bit, we started lambing a bit later, and as I went away to university (I went to study at Harper Adams), we sort of dropped out of the sucklers, because keeping them on the farm required a lot of investment in both housing and slurry storage, and I think we also started to realise that the numbers weren’t quite stacking up. The feed that we were buying in was costing us more than the liveweight gain we were getting. Sheep became easier to handle for my parents, especially as I was away in university. Sheep numbers grew whilst as I away, and obviously I went away to study engineering, because like a lot of farmers’ sons, the machinery side of the business was certainly my interest. The livestock systems we had were pretty hard labour at times, so a chance to drive a tractor when you are young is often more interesting than doing something with sheep. I came out of Harper Adams having played a lot of rugby, but managed to get a good degree, and I actually went to work for AGCO, and I was covering the UK and Ireland. After a couple of years, I ended up sort of finishing work on a Friday night in Scotland, and suddenly I was back home helping on the farm back in Cornwall, having driven through the night to get there. It sort of became pretty obvious that I would eventually end up farming, and after two or three years working away, I came home. There were 300 acres at home at the time, and it’s pretty hard to support two families on that farm, so we looked at the business and sort of said “well, if you are going to be here, what are you going to add to the business in order to justify your place on the farm?”. It’s been interesting. We certainly managed grass on the farm; we are very lucky – it is a very traditional tidy farm, and we are recognised in the area as being good farmers – well-presented stock, very tidy fields, and doing everything traditionally right, but pasture management was something we tried to do, but never had any control over. Like a lot of farms, we would go from no grass to lots of grass, more than we needed, and we made bales that we didn’t need; we put fertiliser on because we had no grass, then we would end up with lots of grass and wondered why we had put the fertiliser on. Although it frustrated us from year to year, we never at the time had an inkling that we could maybe do something about that frustration, because it was just what everyone did. Everyone moaned about not having enough grass and then having too much grass. But eventually, with me trying to come home, it gave us an opportunity to look at the business, and we sort of said, “well, if you are going to bring something to the business, better understanding of pasture management will be pretty useful, because maybe that’s where we can have some benefit, and you can have some benefit”, and it was also an opportunity for me to get off the farm, travel, and see a bit more, especially a bit more farming. We thought at the time as a family that I should go to New Zealand, which I was pretty happy about. I went off there in 2015, and through a good friend and a really good contact, Matt Smith, I ended up on a farm in New Zealand. I guess that’s where my interest and journey in grazing management began.

06:30 – 06:36

James, tell us a bit more now about the business, who’s involved, and what type of work you’ve been doing over here in Wales.

06:37 – 07:15

The business is myself and my colleagues – Rhys Williams and Sarah Morgan. Rhys is based up in the Llŷn Peninsula, and Sarah is based in Shropshire. Between the three of us, we work in Wales, and in particular very closely with Farming Connect, where we deliver the Prosper from Pasture programme, which this year has well over 200 members. We also help to facilitate and run the Pasture Project, which includes 45 farms (beef, sheep and dairy) across Wales measuring weekly, and the results are shared via social media and email for the benefit of Welsh livestock farmers.

07:16 – 07:36

Picking up on the situation at home, clearly, you and your family recognised pasture management as an area you wanted to improve. Was it with the view of increasing the stocking on the farm, or was it just to try and make the existing operation on the farm more efficient? What was the thinking behind improving the pasture management?

07:37 – 08:15

I guess it was a combination of factors. It was one we saw we were spending more on spraying fertiliser than having a surplus anyway, and making bales we didn’t need. There was definitely an interest in getting some control around that expenditure. It was adding an extra cost to the system, a cost we didn’t need, and there was probably a piece around livestock performance. It was a combination of factors. I’m not sure if we considered productivity increase as being a reason, but certainly cost reduction was an interest at the time.

08:16 – 08:36

The timing of your visit to New Zealand was perfect, wasn’t it? It came at a time where you were looking at the future of the farm. What did you learn from that visit? Did you identify that possibly, the farms out in New Zealand were embracing this style of pasture management, in terms of rotational grazing that is, and were some years ahead of us, do you think?

08:37 – 11:09

New Zealand was and still is a very interesting place to visit. The leanness of farm operations was really interesting. The farm I managed was a place called Burley Farm in Manawatu near Palmerston North, and that was owned by a couple - Harry and Chloe Whear. That, I guess, was at the top end of a New Zealand system. The farm ran sort of 1,150 head of cattle. It was a dairy beef system, so rearing calves, rear them on those cows, and take them through to finish. Half of the calves were bulls, so it was running dairy bulls through to finish, and the other half were dairy cross beef. The farm ran lots of groups, because the only way to manage the bulls as they got past 12 months old was to split them up to small groups (20-25 bulls per group), and that way, they were really calm and pretty friendly to work with. That was achieved on the farm by running a sort of lane-based system, which they call Techno Grazing, and then using a polywire to split those lanes into cells. You would have an eight-lane system, eight groups of 25 bulls all grazing next to each other, and then a single polywire in front of them, which you would move every couple of days to give them a new allocation. This farm was a very interesting place to come into, having not done any grazing management before and only moving electric fence for a winter forage crop for sheep. This was an environment where we came in and you are moving fences every day. There was only one labour unit on the farm to manage that number of animals, but that was completely possible in a normal working day just because of the infrastructure. There were lots of water pipes with connections underground, lots of electric fences, really good stock grazers and a really good stock yard, whilst in the UK, you would walk in and you would admire the size of the sheds and the amount of machinery, but I started to realise in New Zealand that you would walk in and you would admire the pasture management and the infrastructure, which enabled that. That was what I found different in New Zealand – the spend on-farm was on investments that gave return, a very decent return, mainly fencing, water and pasture management, rather than a couple of assets, which may look good and were good traditionally, but weren’t giving a return to the business.

11:10 – 11:33

You returned from New Zealand equipped with all this knowledge, experience and inspiration, I guess, as to what’s capable of being achieved using the right management practices, and you later set up Precision Grazing as a consultancy business, because you saw a gap in the market, potentially, of sharing that knowledge and helping other farms to adopt a similar system.

11:34 - 13:05

Yes, that’s right. I came back and I started working with some neighbours, and we did a small project, a sort of innovation funded project run by AHDB at the time. We worked with three neighbours, and we took one field from each farm and we divided that field, or I divided that field, into paddocks, and we had a control field which was grazed next door as to the farm’s usual system. Effectively, we had one field where the animals were moved every two to three days to a new paddock, and we had another group of animals, which many were set-stocked. In the course of the grazing season, so this was 2016, we found that the fields where we had introduced the grazing management system (where the animals were moved more regularly), were producing 25-50 more liveweight/ha than the control field. The value of that financially just in liveweight gain alone was £500-£1,000/ha. What was really cool with that was that they were the same animals – the genetics hadn’t changed; it was the same pasture and the same manager, but different management. That management change alone in one year had dramatically increased the productivity of that land within the first season, which in farming is pretty unheard of. There are very few things we can do in farming that have an immediate effect in the same season.

13:06 – 13:19

Clearly, you saw the benefits, but what were the thoughts of your neighbours? Following that experiment or trial, have they fully embraced the rotational grazing practice?

13:20 – 14:18

It’s an interesting one. I’m pretty sure I’m correct in saying that anyone I’ve worked with since starting this business, anyone that has started has never stopped. Sometimes they’ve changed the way they do the system because it might suit their lifestyle goals better, or their personal ambitions. The farm businesses that were involved in 2016 are very much still doing some form of grazing management, but the trial we did in 2016 was deliberately at the top end of what’s possible to get the biggest benefits. Stock was moved every two or three days, but where those farmers would have evolved is, they might be doing sort of grazing management across the whole business, and not just on one area, but they’ve dialled down how often they move their grazing stock to make it a bit more manageable; they might move stock twice a week now on average on the farm, rather than moving them four or five times a week as they did in the trial.

14:19 – 15:21

But generally, the principles are still the same; it’s about the frequent movement of fresh paddocks and plenty of rest time, and we’ll come on to talk a bit about some examples and some scenarios that you have been working on, James, in just a moment. But before we go into that, let’s reflect a little bit on where we are now in terms of Welsh agriculture and all the changes that lie ahead. We know that the BPS is going to be phased out over the next few years. We are in a situation at this very moment where fertiliser prices have gone through the roof, with feed prices equally as high. That’s driving a lot of farmers to think about changing the way they manage their farms in terms of cost control in particular, and rotational grazing is a way, a management tool of achieving that and improving productivity. What are your thoughts about the current challenges we are facing, and why now is a good time to think about change?

15:22 - 18:08

For all the businesses I’ve worked with, and my colleagues in Precision Grazing have worked with, it would be true to say that the reason for variation between farms is not the altitude, genetics, or pasture type – it’s all down to management. Much more relevant now than it was when I started the business in 2016, but the reason for variation in environmental impact is down to management as well. Personally, I think this is really good, because if a business can change the management, change how it manages the enterprise/enterprises, they can have a really good impact really quickly, and it can have that impact not just across profitability, but also across the environment as well, which we really need to think about the two being combined at the moment; we can’t just increase profitability and save costs unless we know we have a neutral and positive impact on the environment. The opportunity at the moment (and it always has been, it’s just not true of this year), is very much in the hands of the business owners – the farmer and the family; if they want it enough, then they can have it! I guess what we’ve seen previously in other years is that farm businesses have been maybe in a more comfortable position as the level of support has been slightly higher or more certain, and input prices have been lower. At some point, especially since about 2016, input prices have been low enough, so using fertiliser has provided a profitable return for the business, maybe not for the environment, but at least for the business. Where the cost of inputs has risen to now, using them for most businesses won’t have a profitable return. A £1 spend on an input like fertiliser or feed won’t provide any financial benefit – which is good in some ways, because what it’s going to do is hopefully make more people more willing to change their management in order to capture the benefits. It’s always been there; there’s just never felt the need to take. It’s hopefully a good opportunity; the carrots have never been greater in terms of the ability to reduce costs for the business whilst maintaining production, or in some ways, you could say that the stakes have never been greater either in terms of the need to change to maintain business viability. Whichever way you fancy looking at it, the outcomes will be tremendously good for both the business, and also for the wider environment. It could be, and should be, a really big win-win for everyone.

18:09 – 18:39

You are right to highlight the environmental benefits of the system. I wonder, on the farms you’ve been working with, have you been linking your work around grazing management and identifying the relationship between the carbon footprint? Have you been working with other companies who are looking at the carbon auditing side of things? By adopting a system where by your reducing your inputs, that clearly must have a positive impact on your carbon status, whatever that is, and the journey to net-zero.

18:40 – 22:32

Yes. In terms of the industry and where the industry lies, it has changed really quickly. In the six years I’ve been involved, and I guess from a consultancy angle, I’ve seen a tremendous change. When I first started the business, I could see the productivity and the profitability benefits to the farm. They were so obvious and so quick to enable an increase in production per ha whilst maintaining the same inputs. Within a couple of years, the awareness changed. We started to see pressure in New Zealand from people and organisations looking at stocking rate on-farms, and some of the businesses I visited started to become under pressure from their regional councils, which is the equivalent to county councils in Wales, saying, “you need to reduce your stocking rate because we believe that too many animals is a bad thing”. You would have this incredible sort of paradigm where you would have maybe a farm managing nearly organically, with good grazing management, supporting a higher number of stock than a neighbour, who had a different management, and who was maybe predominately set stocking and using a lot of fertilisers, and the regional council looking at that one-dimensionally and saying, “well, you’ve got more animals, and therefore you must be polluting more”, and actually, if you did a nutrient balance between the two businesses, it was the neighbour with fewer animals but more inputs that had the worst balance. The need to provide evidence around what is the benefit of this management change? – is it the number of animals that we should be regulating for, or is it how the animals are being managed, started to kicked off then. Precision Grazing has been involved in some trial work and some studies that has not just looked at the carbon footprint, but looked at the magnitude or the range of wider benefits that comes with a change in grazing management. They might include an increase in biodiversity, increase in water storage and infiltration rates, and reduce nitrogen leaching. In a farm business, we see two benefits. The first one we see is, if you change grazing management, you can maintain productivity whilst using far less towards zero artificial inputs, and those artificial inputs, as you rightly say, have three costs – a financial cost, an environmental cost (through leaching mainly), and then they also have, if you like, a separate carbon cost for the business. By reducing those inputs of feed, fertiliser and fuel, you are immediately changing not only your business’s carbon footprint, but also the business’s profitability, and also environmental impact. They are very quantifiable. What we are also seeing, although evidence is still in very early stages at the moment, and perhaps the regret I have is not doing soil organic matter samples from the day we started, but we believe that grazing management will have an impact, and will have the ability to increase the rate of carbon stored in the soil, and we are starting to see more evidence been gathered in support of that. That’s a fantastic potential for the business in terms of what that might have in future value, and in terms of future role for farming, but what we know in the immediate short-term is, if we can improve the grazing management, we can reduce feed, fertiliser and fuel, and the financial, environmental and carbon saving for the business is more than enough to wire a change in direction.

22:33 – 23:45

The carbon storage potential is a really interesting area to keep an eye on, and I understand there is work and a way to try and development a soil carbon code, which might have some more formulas and more metrics to try and measure, because in theory, the more organic matter you have, the greater the carbon storage qualities of that soil. Back to the point you made earlier about the relationship between the livestock on the land and the storage capacity of the farm, and it’s the combination of the two that you need to consider when looking at the carbon footprint and the environmental footprint of that business. Coming back to the here and now and the very real challenges that farmers are facing this spring, with the prices of feed and fertiliser driving them to look at other ways possibly of reducing costs, and making sure they’ve got sufficient grass in front of their stock, talk us through some of the scenarios and some examples that farmers could implement on the farm. If they are new to this, and haven’t got an existing infrastructure in place and all the sophistication that can surround it, how can you start from a very simplistic basis to see the benefits, and then work and build from there?

23:46 – 29:27

That’s a really good tactic to take. Part of the reason for this podcast and its timing was, as you said at the start, input costs have gone up dramatically, and they are not likely to come down within this season, and therefore what can a business do now? What can it change and implement this year and this grazing season which would add a positive benefit to the business? We could suggest changing the genetics and have a more feed-efficient animal, but it’s going to take five to six years to get through a sheep flock, and it’s going to take 10+ years to get through a herd of cows. These options can still be considered as part of a longer business strategy, but what can we do this year? What we can do this year is change the grazing management for the farm, or for a single group of livestock on the farm. What we know from theory and very much from practice is that if animals are moved more often, and if we reduce how much they spend in a field or paddock, and we have enough fields or paddocks, that will dramatically increase the productivity of the land. It’s the same pasture, the same animals, the same manager, as I was saying earlier, but the land becomes more productive. How does that happen? Well, it happens because we really start to work with nature. The role of the ruminants, if we sort of step back and ask, “why ruminants, and what’s their role in nature?”, is that they are an integrated part of the carbon cycle, and they keep plants, our perennial plants, our natural grasslands, our permanent pastures, in a vegetative state. They keep them mainly in green leaf, and when they are in that state, and when they are actively growing, their rate of photosynthesis is maximised. They are getting and taking as much energy in from the sun, and they are converting as much carbon dioxide as possible into new growth, into roots, and putting it into the soil, which is energy for the biology, and obviously using that as feed for the animals. The role of the ruminants, if you like, is to keep all of our plants vegetative. If we weren’t here, then this would be happening naturally. If humans weren’t here and predators were, herds of ruminants, herds of cattle would be roaming the landscape, moving into an area, and because they are in a group, they are protected from predators. So, moving into an area, grazing, trampling and dunging on that area, and obviously having to leave. They can leave because there weren’t any hedges or fences, and when they left, they left as a group because of that threat from predators. This is what would happen if we weren’t here, and that system, as it happens, was in perfect balance and perfect harmony. Farming, in some ways, has disrupted that, because we’ve kind of forced animals to stay in one place for too long, and when animals stay in one field for too long, they start to overgraze, and overgrazing means they are eating the plant before it’s had the chance to fully recover, and that dramatically reduces its energy reserves, and its photosynthesis potential, or its potential to photosynthesise, and that leads to an increase in weed species, and reduces productivity. We can change that; we can change that very quickly. The way to change it is to say “for one group of animals on the farm, we would like that group to have access to, as a minimum, four fields/four paddocks”, and ideally, that should be six to eight fields/paddocks. If we look at a typical farm, especially in the spring time, what we quite often find is that 90% of the farm’s being grazed, and because 90% is being grazed, we could say that only 10% is being rested, and therefore the farm’s being overgrazed. What we would like to do, if we think about that minimum scenario where we would like four fields or paddocks per group of animals, in that scenario that would mean that only 25% of the farm was being grazed, and then 75% of the farm was being rested. It’s the bit that’s being rested that’s able to capture more energy, which enables the plant to fully recover, so that the next time they are grazed, they grow back really quickly. If we can implement that management change, nearly ever farm could increase their production of DM/ha easily by 1-3 tonnes in a given year. The reason or the benefit of doing that could be, most relevant this year, is if farmers are using nitrogen to increase grass growth, well by changing the management, they could directly offset the need to use nitrogen on that land or on that farm at the same rate. 100kgN or 300kg of fertiliser grows about a tonne of feed in good conditions, but what we are saying is, changing the grazing management could produce 1-3 tonnes of feed, which is the equivalent to 300-500kg of fertiliser, which, ironically, is far more than what most beef and sheep farmers are using anyway, and would be the same as, if not more, than what most dairy farmers are using. The ability to change the grazing management on part of the farm this year can suddenly produce some of the feed that was missing by reducing the nitrogen rate across the rest of the farm.

29:28 – 29:51

Therefore, what you’re saying is, the ‘quick win’ this spring is to try and implement this system on a very basic level. As you alluded to earlier on in the conversation, as long as you maintain the principles of moving regularly and allowing enough rest, you can adjust the timing, somewhat, to fit in with the farming system or the lifestyle you have. Am I right in saying that?

29:52 – 32:45

Yes. The state we are in is, we are aiming to work with nature, and if we work with nature, we’ll be more profitable, productive, and have a neutral – and probably a more likely positive – impact on it. To work with nature means that we need to avoid overgrazing, and therefore we need to move the animals to a new pasture at a minimum once a week, but ideally twice a week. The more often we move animals to new pasture, the higher our potential productivity level. The exciting thing is, the increase in productivity comes from simply working with nature, so it means we are making better use of the sunshine we get, which is free, and our most natural soil fertility, and the rainfall, which hopefully Wales is going to get ample amounts this season. It’s not like we are putting a lot of stress on the system; it’s not like we are having to add extra inputs to support productivity. By moving animals more often, by reducing the amount of time they spend in an area, we, or the business can start to tap in to all this extra grass, which was always there, but it’s whether they choose to make use of it. That is phenomenal because it’s really hard in business to potentially adjust a system when inputs are so volatile at the moment. If you knew fertiliser prices would be as they are today two or three years ago, the business could have made adjustments, such as improving genetics over a five-year period, or change the system, but we didn’t, and so managing volatilities is a real challenge for all business, and not just agriculture, for the foreseeable future. Therefore, what I’m saying is, it’s possible for a business to do this simply by tapping into its grazing management ability and potential, and the grazing management can always become a flex on the system, and you could say, “well, if we want to maintain our stocking rate this year, we really need to move our animals twice a week, because we can’t afford to use nitrogen fertiliser because of the price it is, and therefore we need to drive our production ‘organically’ through our grazing management”. With that change, if we do it well, we can also do things like extend the grazing season, which could reduce the winter housing period by two or four weeks for a lot of businesses, and sometimes more, and that reduces the amount of silage we need for the winter, the use of machinery and fuel; it has a magnitude of knock-on benefits as the business starts to adopt this, but it’s pretty much the only tool businesses can take or use this year which could protect them from the inflationary rises of input costs.

32:46 – 33:27

What’s stopping more farmers from doing this? Clearly, you’ve explained really well about the benefits, how it can be done, and what are the positive environmental and financial outcomes of adopting a grazing management practice such as this. But do you get farmers saying, “look, it’s going to involve a lot more infrastructure investment and I will need more fences, water troughs, and I will need a lot more structure put in place before I can successfully do it”? Do you feel that’s a bit of a barrier sometimes? And actually, you can dip your toe into this rotational grazing practice without incurring too much infrastructure expense.

33:38 – 37:04

Yes. Each business and each person is different for their reasons in not always wanting to adopt what maybe on paper seems so obvious. I think consultants in the industry are maybe guilty of making it seem harder than it is, and part of the reason for doing this podcast was to sort of hopefully simplify it and say, “yes, you can spend money on infrastructure, and yes you can put fences up and have all the water troughs, but for most businesses who especially want to dip their toe in and to get the impact that the business might need to get this year to offset or to reduce its need for inputs, none of that has to happen!”. What we need is four fields/four paddocks per group as a minimum, and ideally six to eight. If we looked at a farm and the farm was in a situation where in the spring most of the animals are in most of the fields, what we would ask the farmer is, “are there any groups of animals which you could combine?”. Let’s say you’ve got two groups of yearlings that normally go out, and they have two fields each, so you’ve got two groups and each have two fields. But if we combine those two groups into one group, we would have one group with four fields, and that automatically would increase the productivity of that land because they can move to a new field each week, whereas before, they were basically being set stocked and just flicking backwards and forwards between the two fields, or maybe the gate was open. That could be done without any capital investment being made, just a management change. What we need to be a little bit careful of is group size – how big is too big, and the limiting factor for that normally is either the handling system on the farm, or the water system. Keeping an eye on water availability is where some farms may be limited, but that may be a limit on part of the farm; it’s rarely a limit on all of the farm, so the easy ‘wins’ in 2022 are to look at the farm and ask, “where’s my most productive pasture? Where have I got good water supply, and how can I run my groups or manage my animals so that I can ensure that at least two of my groups have access to these four fields/four paddocks?”. If one of the fields is quite large and couldn’t be grazed in a week, then we would split it in half. That investment is interesting, isn’t it? Most businesses or a lot of businesses would happily spend £10,000-£50,000 on fertiliser each year, whereas we say investment in infrastructure like water pipes and troughs, you can do a hell of a lot for £10,000. But you only have to do that once. Let’s say we spend £10,000 in one year, and in doing so, we could reduce our fertiliser bill by 50%. That fertiliser bill has gone up. Suddenly we were spending £10,000, but this year we might spend £25,000-£30,000, and actually by spending £10,000 on infrastructure, that could reduce that fertiliser bill by more than 50%. That £10,000 spend could bring them £15,000 in savings in year one, and year two, three, four, five and so on, and over ten years, that £10,000 spend could save them £150,000.

37:05 – 37:32

When you put it that way, it’s quite striking. The return on investment from that capital expenditure is incredible, and the cost-saving element. Do you need to measure the grass? I know this is something you do as a part of the grazing management, but if you’re just starting out, do you need to invest in kits and start measuring using the appropriate plate measurer or whatever, or can you simply start using a visual assessment?

37:33 – 40:37

If you can put the infrastructure in place (one group in four paddocks, or six to eight paddocks/fields), then you don’t need to measure as such. The great thing about grazing is it’s very visual, and every farmer listening to this is already managing pasture; they’ll know when grass is getting a bit long and a bit too much mature for the stock they want to graze there, or equally they know when they haven’t got enough grass. As long as you’ve got experience with farming and with livestock in general, then once you start putting this sort of system in place (e.g., you close the gate and you keep them in one field, and after a week you move them), you will immediately see regrowth; you’ll see grass jumping out the ground, especially later on in the spring – you will see that immediate lift in productivity. All that happens next is keeping an eye on the management. With four paddocks, you’re going to move every five to seven days. The limit with four paddocks is, although it’s much better than having them in a single field, it doesn’t give you many options around management, but that doesn’t mean you shouldn’t start and try. Most people as they start to do it will get addicted to it; it’s very addictive, because it’s very visual, and because you get instant feedback, and if you move them once a week every week, you’ll see how the grass is growing back, and you’ll see what they are getting into, and if you move them twice a week, it happens more often. Quite often, people will start with four paddocks per group, and what they’ll say is, “yes, it’s working really well, but it’s not quite perfect. It’s annoying me that they are still leaving areas of the field not grazed. I can see that they are still overgrazing parts of the field they really like, or they are eating too low or they are re-grazing before I get the chance to move them!”. It will leave most people wanting more paddocks, and they will want to move the animals more often because it becomes slightly addictive. What they see is, as they move animals more often, and as they reduce the ‘on time’, they eliminate overgrazing, and the productivity increases. As you start to do that, you want to do it across more of the business, particularly if you want to increase stocking rate, or if you want to take out most of the fertiliser, and then that’s where the role for pasture measurement comes in. If you really want to drive the system, then measuring and having that extra element of control enables you to make decision proactively; it gives you the ability to look ahead two or three weeks, and say, “I can see my pasture growth dropping, and it probably means I should make a decision”. That, I guess, is the next level up. A management change can be tremendously beneficial to the business, but to tap in into the extra 25% benefit, and to really take the business forward, then pasture measurement can become a really powerful tool, particularly proactively around the use of inputs and enabling decision-making.

40:38 – 41:00

If you’re thinking about adopting this, would you always advise having a chat with a farmer who has been doing this for some time? Somebody possibly in the same area as you with a similar altitude, landscape and soil type. Is it always useful to just compare notes practically with somebody who has been doing it, so you can learn from them?

41:01 – 43:36

It’s always useful going to see people who are running a system that you aspire to run, particularly if they are in your local area; they will already have overcome the challenges that you might be facing. That’s the value of discussion groups, and we see that really being reflected in the rate of change, with people who are members of things like the Prosper from Pasture programme with Farming Connect; they will progress much quicker than someone who isn’t involved in those discussion groups, because they’ve got access to support and advice from people out there doing it. However, it’s not an excuse not to start, because it is visual; people listening to this will already be good livestock managers, and also know what grazing heights they need to be aiming for from their current practice. Starting and having a go is probably the most important piece. You will ask better questions once you’ve started and had a go. It’s easy sometimes for it to be overcomplicated by someone else, when it really doesn’t need to be. The impact on business is really positive, and we can make it as technical as we like, but it doesn’t come away from the first principles – one group per four fields/paddocks, or ideally, six to eight, and move them once a week, or slightly more often if you’ve got more paddocks, and you’ll get 56% of the potential benefit; to go and get the next 44%, that will always be available to the business, it’s just up to the business whether it wants to use and take it. In New Zealand when I was out there, there was a saying – “the bigger your overdraft, the more often you move your stock”. The shorter the ‘on time’, the higher the pasture productivity, and higher the stocking rate that business could stand, or the fewer inputs that business needed. The way I see this going is, it’s not probably about farms necessarily carrying more stock; it’s about farms using far fewer inputs to support the stock they have; that is the route to profitability, and that’s the route to environmental benefit. Some business will increase stocking rate in the future, and we’ll figure that out later on, but in this season, and certainly in the short term, that’s the opportunity and the reasons I put forward for Welsh livestock farmers to adopt this now.

43:37 – 43:53

You’ve been crunching the numbers, looking at the potential for Welsh farmers to adopt this in terms of minimising inputs. Tell us exactly what calculations you have been doing to demonstrate potential.

43:54 – 48:17

Various organisations have put forward their plan for the future in terms of how they think we are going to feed the growing population, and how they think land should be used. Wales is pretty unique in its set-up compared with other countries in the UK. The available land area is mainly permanent pasture, but with farming, 60% is permanent pasture, 20% is rough grazing, and 15% is arable or in a cropping rotation. We know that permanent pasture has got a tremendous benefit in terms of stored soil carbon and biodiversity. If we take those land areas, and if we combine them with some of the results from the Welsh Pasture Project (which Precision Grazing runs for Farming Connect, which involves 45 farms measuring pasture), the average yield/ha for pasture under a grazing management system was 7 tonnes of DM/ha, and that was the average across beef and sheep farms last year. If we multiply the area of permanent pasture by 7 tonnes, then add in a couple of tonnes/ha for the rough grazing, and we suggest that a third of the arable area should be in a fertility building ley being grazed by livestock, and that would contribute a few more tonnes of DM as well – and on average, I reckon that the agricultural land in Wales could produce 9 million tonnes of DM, or about 5.7 tonnes/ha. If we compare that to the number of animals in Wales at the moment (there’s just over a million head of cattle and just under 9 million sheep), then that demand, again very roughly, is about 5.6 tonnes of DM/ha. My suggestion is, if grazing management was adopted across Wales, and the animals were more evenly spread out across all of the land, then Wales could grow all the food it needs to support the animals it currently has, and therefore it could effectively eliminate the need for any fertiliser, purchased or imported feed. The cost and environmental savings of that would be significant. The benefit of that as a story, as a marketing piece for Wales and for Welsh produce, could be tremendous. We know where we are heading in terms of a nation, and Wales, especially in terms of a country - it will never be the lowest-cost producer of food, but it could quite easily produce the feed of the highest quality with lowest environmental impact, or the most positive environmental impact. Changing the grazing management in order to eliminate the need for purchased inputs will bring tremendous cost saving and environmental benefits, not only to Welsh farming, but to Welsh society as well, and in terms of things like water quality, air quality and so on. It would have to be very simplified, because it would mean a uniform distribution of animals across all the farms, and, Aled, I’ll let you figure out how to achieve that one, but it really shows how grazing management as a tool can support the viability of the industry. We can combine that with the growing evidence around the carbon being stored, both actively in these systems in terms of growing plants, and also long-term storage in the soil – it really does highlight the need to protect the landscape and farming, and to deter the threat of other industries and land use changes such as forestry, which is very singular in its benefit. It may store some carbon, but it has a zero biodiversity and community gain, whereas a thriving agricultural industry producing highly nutrient dense food with a positive environmental impact supports more than just climate change. It enables community; it enables economy and education. There’s a fantastic potential in the country at the moment if policy makers can get their heads around it.

48:18 – 49:40

James, thank you ever so much for joining the podcast. I think you’ve painted the bigger picture fantastically well for us, explaining the challenges, and clearly there are some very real immediate challenges facing farmers this spring, but you’ve also offered some potential solutions through the grazing management. A couple of things that have struck me are, farmers can dip their toe in the water by starting from a very simplistic base and not be put off by the potential of converting the whole farm into a rotational system – you can start with a part of the farm, see the results, and build from there. But ultimately, I think one of the messages that comes through really strongly in this podcast, James, is that management is the key, and that is something which is 100% within the farmer’s control, and not being driven by external factors, such as what’s happening in terms of pricing and inputs. Those are factors which are largely beyond the farmer’s control, but if you can focus on doing things on the farm which you can manage, then that is absolutely key to seeing some of the results. I’m sure on the back of all the work you’ve been doing with Farming Connect and the potential there is within Welsh farming to maximise their fantastic ‘world-beating’ ability of growing grass, then we are going to be seeing a lot more of these practices going forward. James Daniel of Precision Grazing, thank you very much once again for joining the podcast.

49:41 – 49:42

Thank you. It’s been a pleasure.

49:43 – 50:19

If you would like more information about the support available through Farming Connect, then please contact your local development officer or the Service Centre on 08456 000 813. And there we are, we have reached the end of yet another episode. We’ll be back in two weeks’ time with plenty more to talk about, but in the meantime, don’t forget to hit ‘subscribe’ on whichever platform you use to keep notified of all new episodes of Ear to the Ground. On behalf of the team at Farming Connect and myself, Aled Jones, thank you for listening, and goodbye for now.