



THE ULTIMATE GUIDE ON HOW TO

EARN MORE PROFITS FROM YOUR PASTURE

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A TYPICAL DAY ON YOUR FARM...

You rush in early to work. You know there's a lot to do. And you begin to work your way through the most urgent tasks.

- You don't know which paddock you will graze next, but you'll figure that out soon.
- You don't know your animal feed intakes, but you tell yourself that the animals look healthy enough.
- You don't know how much profit you'll make this year, but you promise to look into that as soon as possible.
- And you don't know which paddocks need fertilising or irrigation, and in what quantities, but you'll soon call a few friends and ask them their plans.

You're constantly fixing things that are broken. And you're tired before you even manage to get to the important stuff, but it's already evening.

Soon you will repeat all of this again tomorrow morning. The important work can wait. After all, it has been waiting for a few years now.

Are you tired of playing this day in and day out? Season after season? Year after year?

No one likes the feeling of going flat out to nowhere. Do you want to maximise the potential of your farm? Are you ready to take a deep breath in and regain control of it?

Over the next 15 minutes, this e-book will show you specific areas to improve both production and profits. But more importantly, you'll also notice that if you put this system to work, you could eliminate most of your frustrations.

Because, if you're like most livestock farmers, I suspect that you're probably struggling with one or more of these four frustrations:

#1 Lack of Control:

You don't have control over your time. Instead of owning the farm, the farm owns you.

#2 Lack of Accountability:

Your staff don't seem to follow through. And you end up re-doing most work again.

#3 Lack of Profits:

For a few years now, the farm hasn't been nearly as profitable as you would like it to be.

#4 Nothing's Working:

You've tried various ideas, strategies and even a few quick-fixes. But nothing is working.

For the next 15 minutes, give us your undivided attention and we'll show you four steps to systematically improve profits and eliminate your frustrations.

EARNING MORE PROFITS

Unlike jumping on a trampoline, building steps is a slower and less exciting way to reach higher ground (in our case, higher profits). But, it's a long term-investment that works.

Similarly, the 4 steps outlined in this guide aren't the quickest or most exciting ways to earn more profits. But, these 4 steps are a more sustainable and long-term approach.

This guide isn't written based on any fancy theory nor does it offer you any silver bullets. It's based on hard facts, research, real experiences and what has worked for our farmers.

Yet only one in ten people that download this guide will give it the attention it deserves and take action. Because most people will simply skim through the guide, read a few lines and save it for later.

But we both know this might never happen. Because we've all done this before, haven't we? We all have many to-reads and to-dos that we never got back to.

Feel free to skim through this guide if you need to. All I'm saying is that this guide will work only if you put it to work for you.

And more importantly for your sake, we hope that you are that one person who takes action.

Let's begin.

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STEP 1:

PASTURE GROWTH

- Thinking like your pasture
- Why the S-curve is your friend
- Accurate, Frequent & Cost-effective Data

THINKING LIKE PASTURE

Pic 1: Ryegrass tuft growing



Humor me for a moment. Imagine that you're a tuft of ryegrass growing in your pasture.

What are your primary objectives? Like all other plants you too want to survive and set seed.

So along with making food, you will also store a part of your energy as carbohydrate reserves in your root system.

This will help you regrow quickly, in case you get eaten up or trampled down.

Now imagine getting eaten up by a cow. You don't get fully eaten up do you?

A cow typically gets only about 10 to 15 cm of plant material in every bite.

Surely you can handle that. After all you still have your roots, some leaves and stem remaining. And you can use your carbohydrate reserves to regrow quickly.

You quickly put out new leaves. You get busy making more food from the sun. And you grow up once again. Eventually, your roots go deep enough to mine nutrients and you reach a stable state of growth where more growth doesn't mean better results.

Once you reach this stage you will have enough leaf surface area to comfortably make all the food you will ever need. So with growth and food out of the way your priority now changes from survival to multiplication.

You now work towards storing surplus energy and nutrients to set seed. Eventually wind, water, animals and birds will carry your seeds and help you create new plants.

But, why is all this important to a farmer like you who wants to have healthy animals and make more profits?

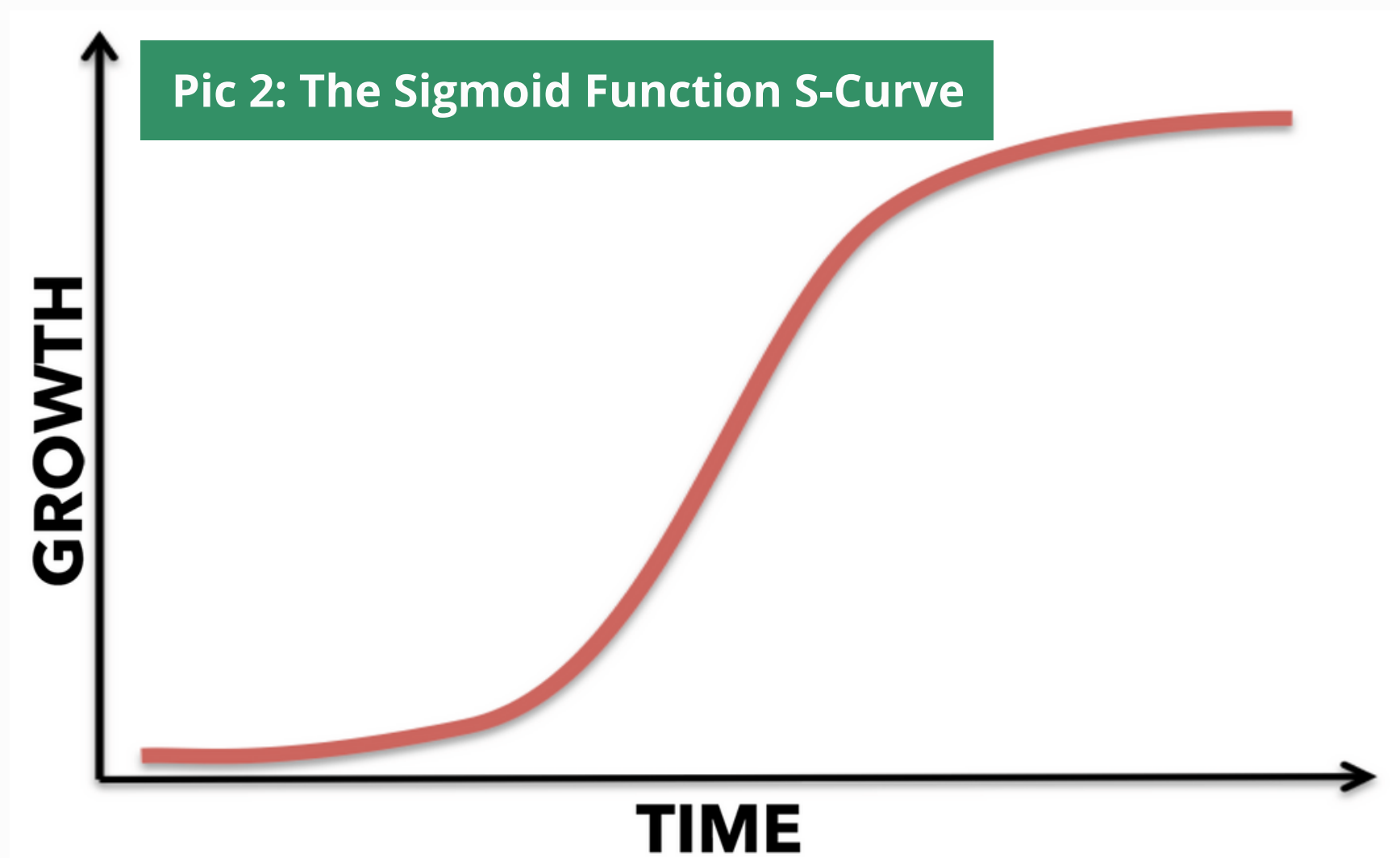
THE S-CURVE IS YOUR FRIEND

There are two key lessons to learn from this.

1. Plants can regrow & **recover quickly** as long as it has enough reserves in its roots
2. Max. **growth** happens after establishing deep root systems & before setting seed

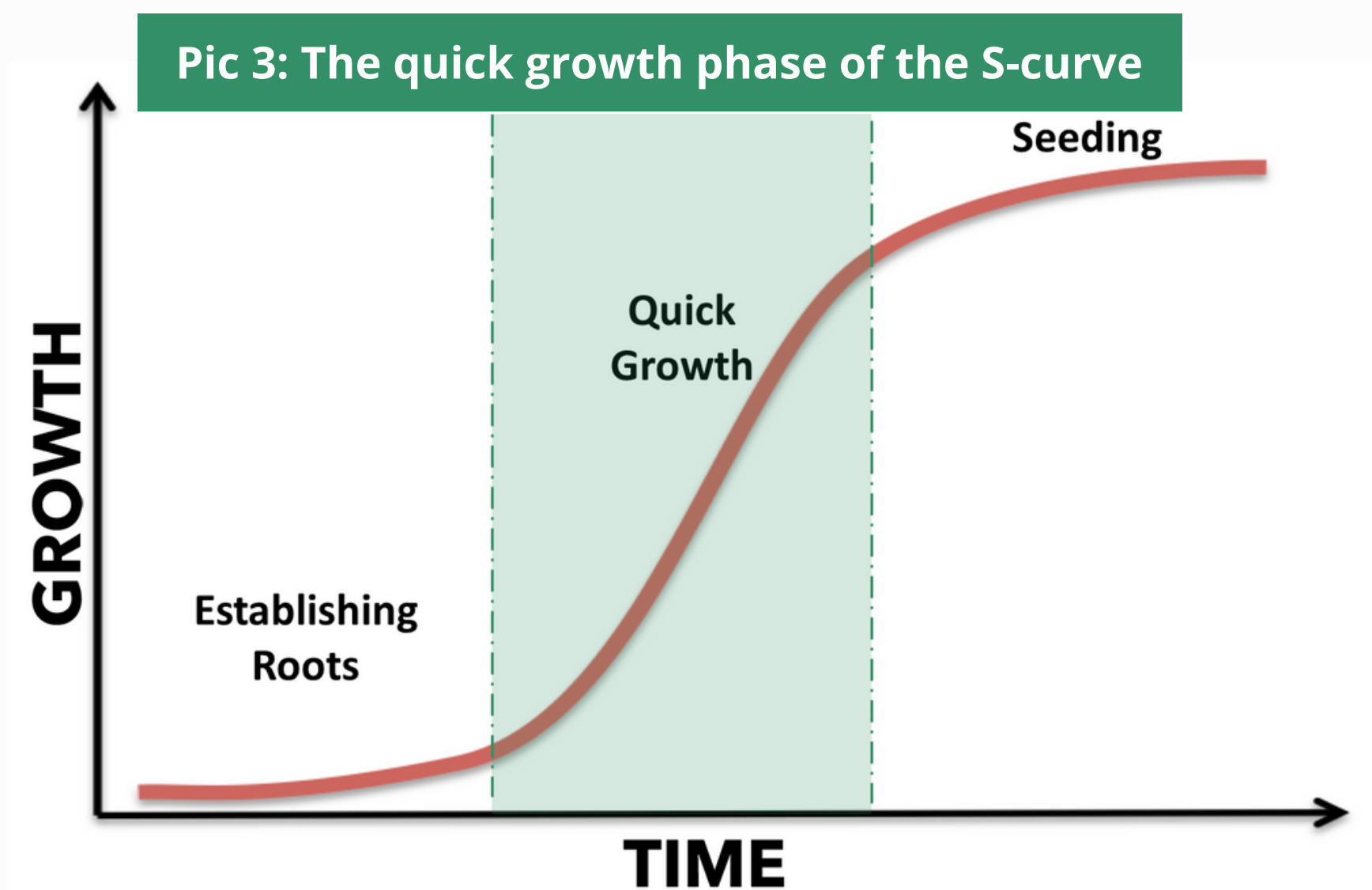
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Allow me to introduce you to the S-curve. Formal sounding economists also like to call this as the Sigmoid function curve. It looks like a stretched out 'S' – see below image.



Like many complex natural phenomena, the growth of plants also follows the S-curve. In other words, *maximum plant growth happens in a very short time* window.

And we can use this to get maximum yield and productivity. To do so, you simply need to keep your pasture in this middle growth phase, as much as practically possible.

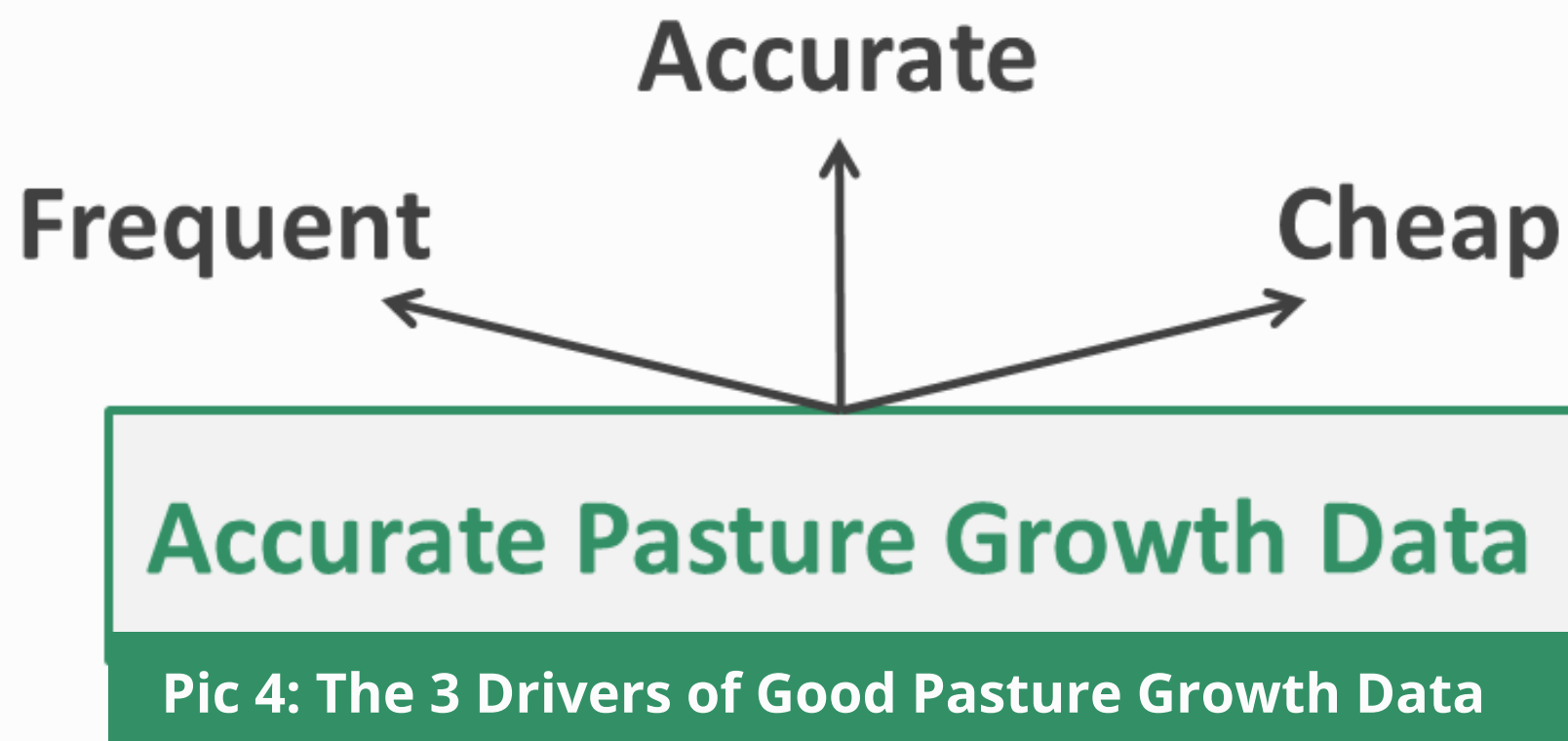


If the plant is grazed repeatedly, without adequate rest, it remains in the *establishing roots* stage. And wouldn't have the necessary energy reserves to regrow quickly. On the other hand, if too much rest period is allowed between successive grazings, the plant moves on to the *seeding* stage. Its priority shifts to seeding and growth stagnates.

Pioneering farmers who have mastered the art of maximizing soil health, animal health and production - make use of this S-curve intuitively. But how do you implement this?

ACCURATE, FREQUENT & CHEAP

That brings us to our first and most fundamental step: pasture growth data.



When you don't measure your pasture growth accurately and frequently, you are driving blind. Even worse, you might be driving ahead while looking into the rear view mirror.

Because more often than not, ineffective pasture decisions become clear only in hindsight, when you're looking at your profit & loss sheets at the end of the year.

Most farmers don't measure their pasture growth. And they have good reasons too. It's time consuming, costly and labour-intensive. After all, you already work really hard every day. Why bother with additional work?

But let us remind you that we're building profitable steps here. And it's critical to get this first step right. Because without this in place the other steps don't get a solid base.

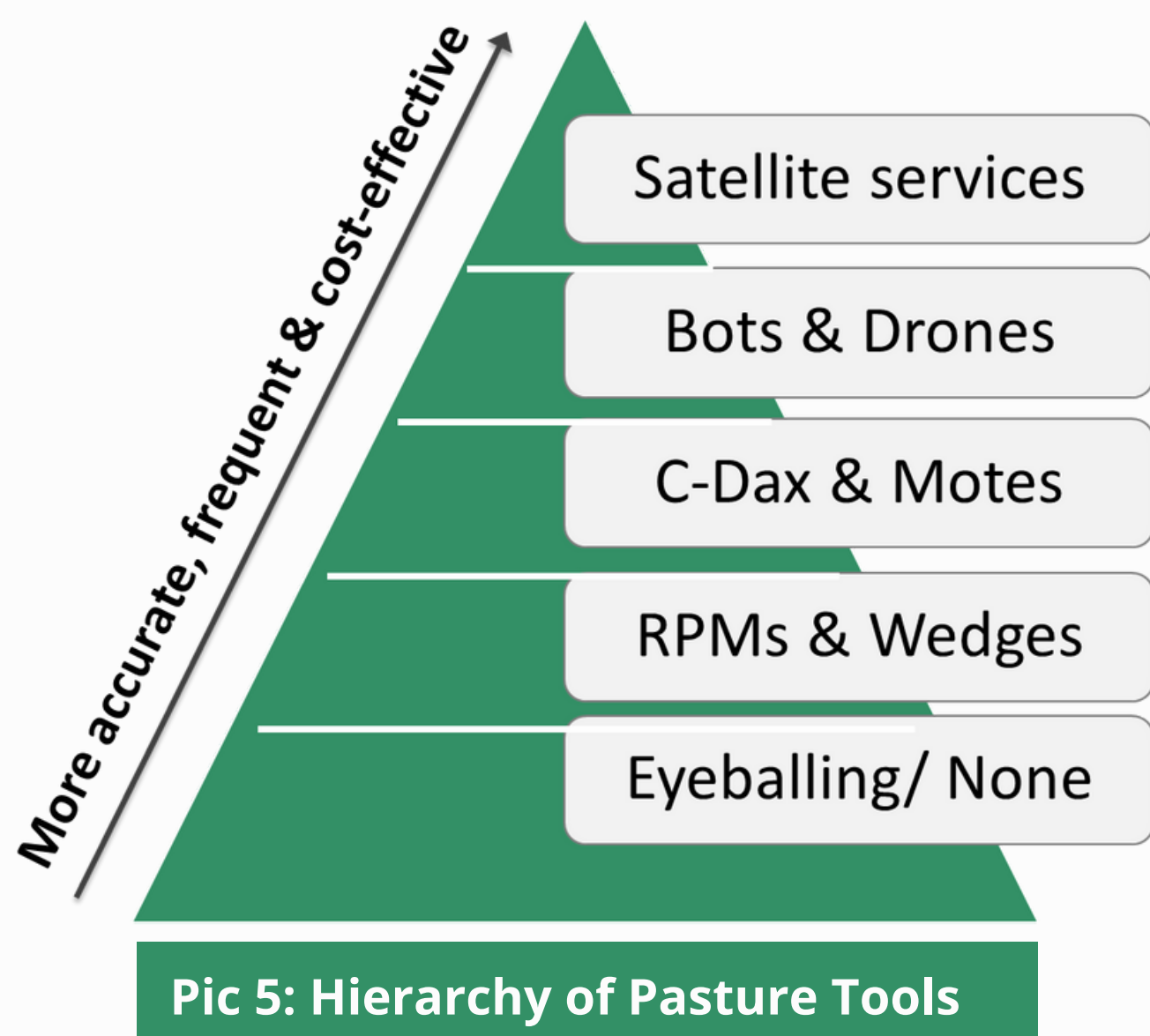
Also, working on any other profit improvement area without this in place can't give you the optimum results you're after. Because it would be unwise to put a cart before the horse.

So get this done, even if you don't want to build any of the other three steps in your farm, this alone can help you increase your profits by more than \$60,000 every year.

How you get this done is up to you.

You could use tools like a measuring tape, a [rising.plate meter \(RPM\)](#) or even a [C-Dax Meter](#) to take frequent pasture growth measurements across different points in all your paddocks.

Or you could employ more convenient [time-saving alternatives](#) such as electronic motes, drones or satellites to do this for you.





STEP 2:

ROTATIONAL GRAZING

- Easy Vs Effective
- Choosing The Best System for Your Needs
- Making Effective Grazing Decisions

EASY VS EFFECTIVE

Easy and effective are often two different things. Letting animals graze what they want and where they want might be easy. But it isn't effective. And has massive disadvantages.

[Researchers](#) from the University of Kentucky demonstrated this using orchard grass.

To stimulate continuously grazed pastures – one pot of grass (left) was cut to 1-inch every week for a month. And to stimulate rotationally grazed pastures – the other pot (right) was cut to 3.5-inches once at the beginning and at the end of the month.

After six days of regrowth, the difference was evident and hard to ignore. See picture.



In addition to faster regrowth, a good rotational grazing system also helps you improve your pasture quality and animal health. Why? Because left to their own, your animals will begin to graze selectively.

They will selectively eat the more palatable plants and ignore the other plants in your pasture. Over time, this will tip the balance in favour of the non-palatable plants. And eventually, degrade the quality of your pasture.

Also, different plants accumulate different nutrients better. And animals get the maximum amount of nutrients from plants during the growth stage. So, when your pastures are grazed continuously or selectively – animals tend to either under graze or overgraze particular plant species. So your animals can't get the most nutrition out of your pasture.

On the other hand, a sound rotational grazing system will force your animals to eat everything in a small portion of land within a short period. Competition from the herd and hunger disciplines them to eat all the plants. And because you let them in only when the pasture is at its maximum growth stage – nutrient availability is also at its highest. Over time, this also improves pasture quality and reduces the need for inputs like fertilisers.

THE BEST SYSTEM FOR YOU

There are many [*different rotational grazing systems*](#) based on different parameters. How do you choose a rotational grazing system that's right for you and your needs?

Instead of looking at the different systems, let's talk about three key factors that define a sound rotational grazing system - rotation patterns, stocking density and grazing duration.



Rotation Patterns

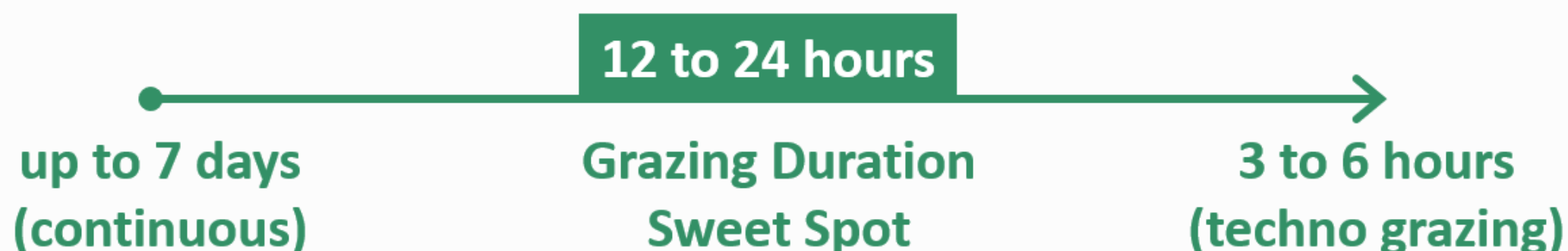
In a simple rotational grazing system, you move animals from one paddock to another, in a set sequence. However, for more effective results, you'd want to rotate paddocks based on the amount of dry matter forage it has. For best results, you'd ideally want your animals to graze a paddock that has between 2,500 to 3,200 Kg of DM per hectare. And you'll rotate to another paddock, once the post-grazing residual target reaches 1,500 to 1,700 Kg of DM per hectare. This will keep your pasture within the quick growth phase of the S-curve.

Stocking Densities & Grazing Durations

Stock density is your number of animals divided by a specific area over a particular grazing time period. The area can be the size of your paddock or daily grazing break. In continuous grazing, stocking densities is as low as one livestock unit (LU) per hectare. On the other hand, in intensive systems such as mob grazing systems, this could be as high as about 100 LU's per hectare. More stocking density means more frequent rotations.



That said, a stocking density of about 3 to 4 LU's per hectare per day is a sweet spot for most farmers under dryland-irrigated conditions in temperate climate zones. Because this allows efficient grazing routines without needing more than one or two rotations a day.

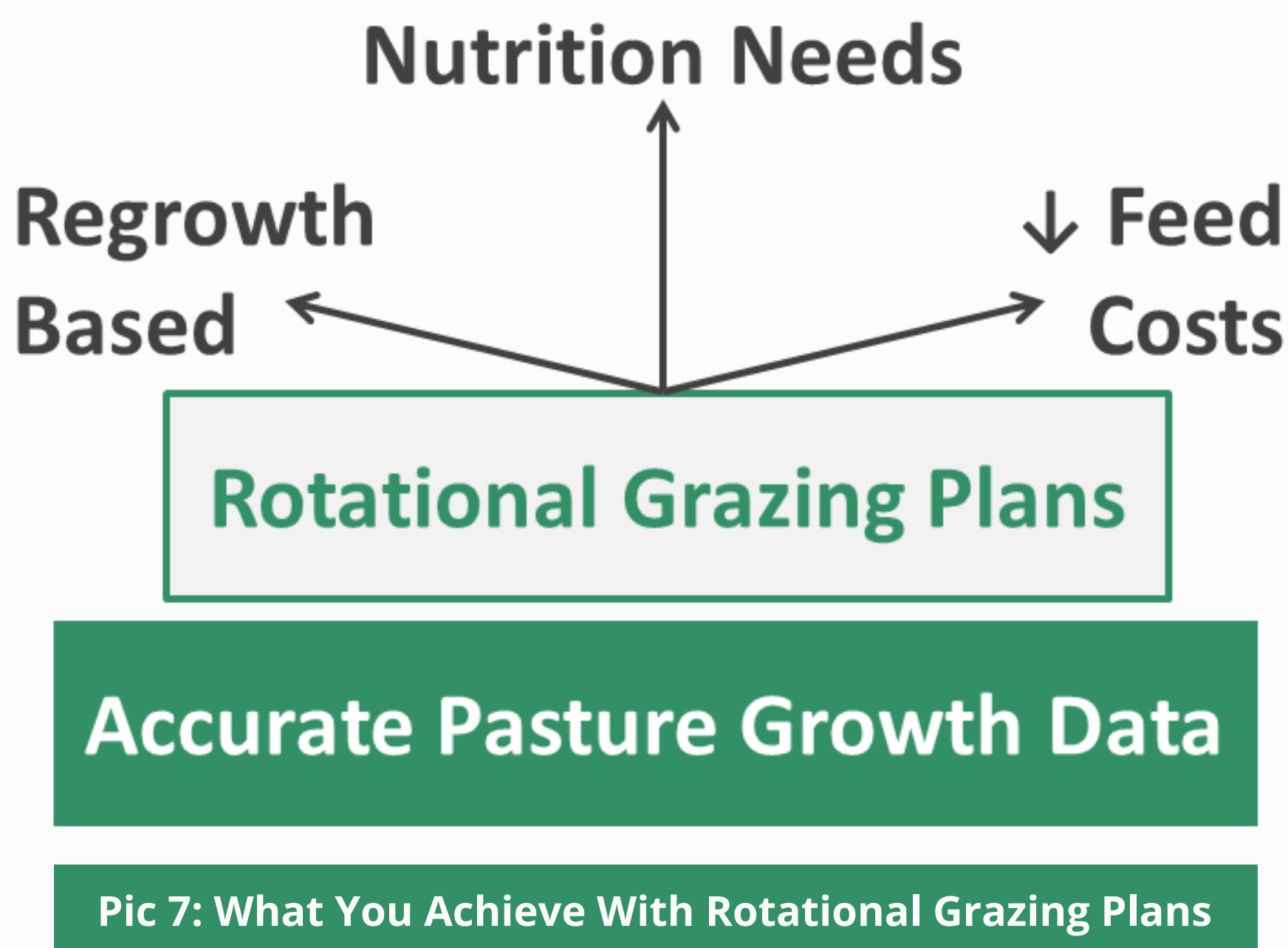


However, these are only broad guidelines based on what has worked for many our farmers. Through some trial and error, you will still need to find and refine your grazing system that works best for your weather, soil fertility and grazing needs.

EFFECTIVE GRAZING DECISIONS

That brings us to our second step. Using your pasture growth data to make effective daily grazing decisions.

Effective grazing decisions can help you achieve three outcomes in one stroke. First, it helps your animals meet their nutritional needs. Second, it improves your pasture regrowth rates. And lastly, it lowers your annual feed costs.



Pic 7: What You Achieve With Rotational Grazing Plans

It's no coincidence that this second step sits over our previous step. Accurate pasture growth data is what makes rotational plans effective.

The small gains of making effective grazing decisions on a daily basis will add up into a massive profit advantage for you at the end of the year. Combined, both these systems give you a phenomenal returns on your time, effort and monetary investment.

That's why it is critical for you to nail them down to perfection. Once you get both these systems right, you'll already be in the top 10% of productive farmers.

So get this right, before you spend another hour of labour or a dollar on other farm systems. In fact, we'll be happy if you close this guide now to take action.

But there's also more profits to be made when you improve your pasture. And that's next.



STEP 3:

IMPROVED PASTURES

- Improved pasture varieties
- Doubling yields and better utilization

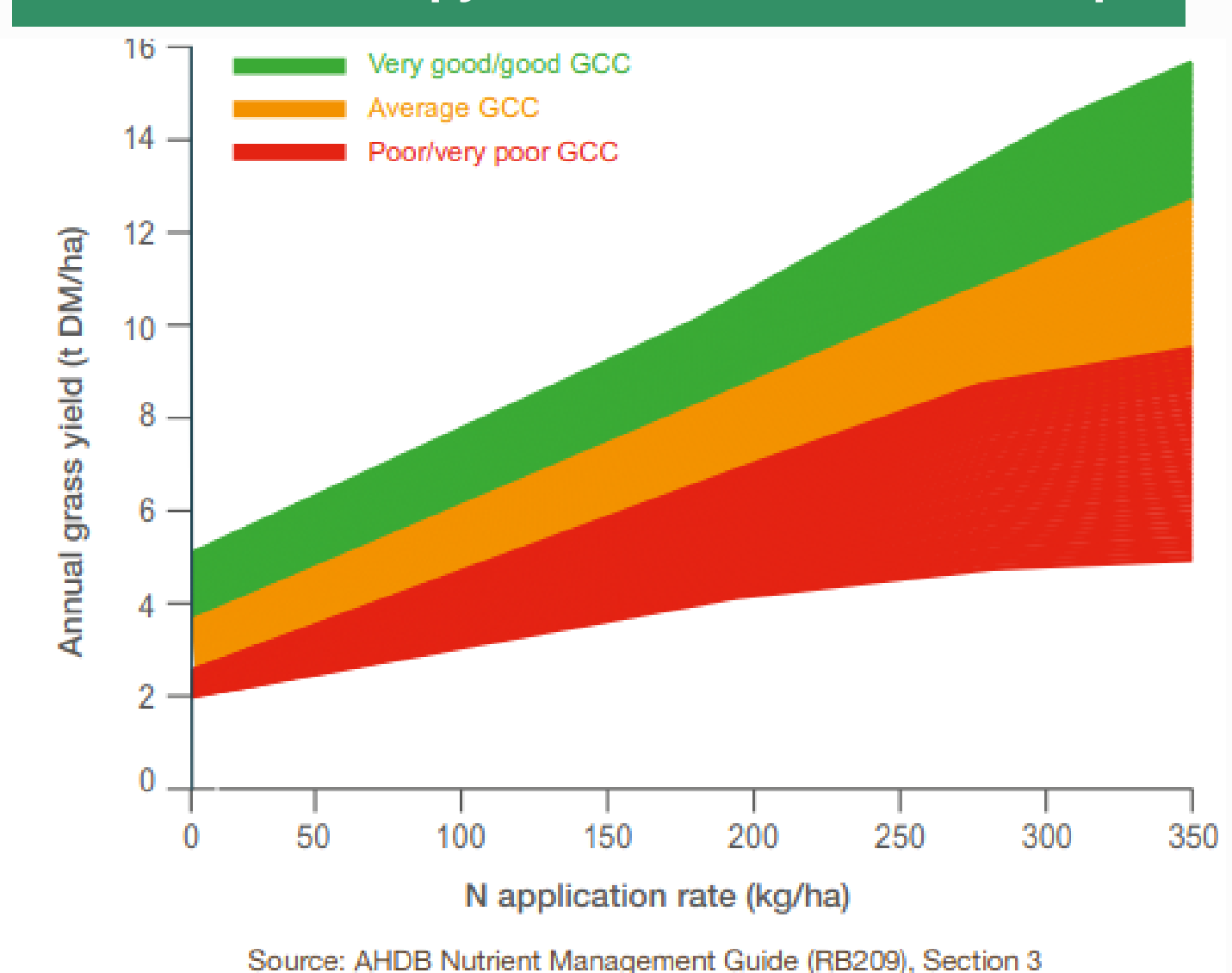
IMPROVED PASTURE SPECIES

To improve your pastures, you need to find the right combination of pasture species that adapt well in your land, improves yields and is suited to your weather conditions.

Varieties such as ryegrass, fescues, lucerne, alfalfa, red clover, white clover, sorghum, millets and kikuyu can help you improve both nutrition value as well as dry matter yields.

Most of them, especially the legumes, can provide between 16 to 23% of utilisable crude protein per Kg of DM. Quality protein is often hard to find and it ends up being the most expensive part of your feed costs. So improved pastures can help you improve nutrition as well as lower supplemental feed costs. Improved varieties also have better palatability and produce higher dry matter yields per hectare. They also respond better to irrigation and fertilisers.

Pic 8: Green Canopy Cover (GCC) Yield VS N Input



For example, under the right conditions with adequate Nitrogen and moisture, an improved (dryland) pasture species like ryegrass can yield up to 14,000 Kg DM per ha.

In other words it can double the potential yield of your native grass pastures.

BETTER YIELDS & UTILIZATION

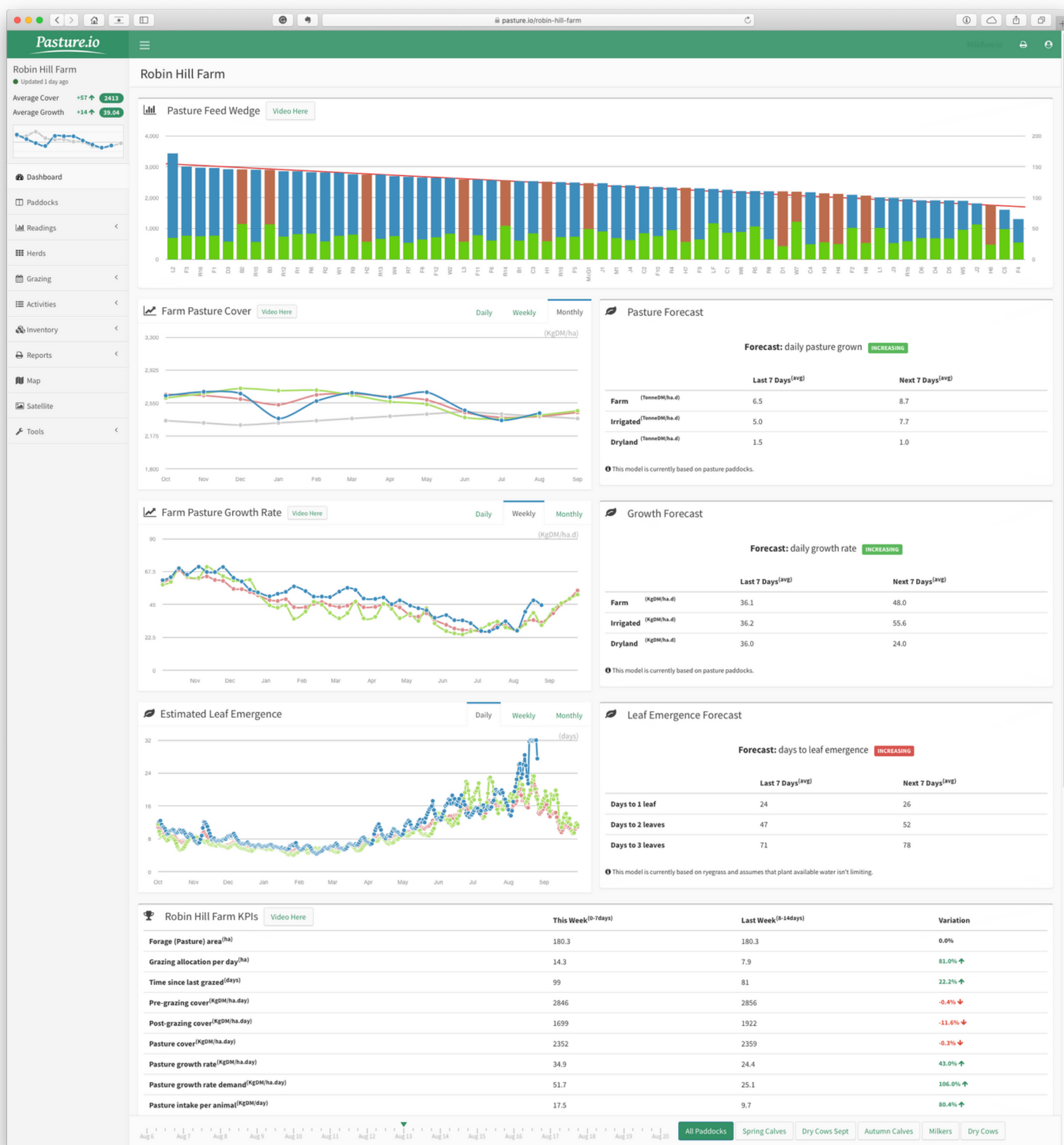
We saw how adequate irrigation and fertilisers can easily double your yields. But how do you know which paddocks need what inputs, when and in what quantities?

This is where paddock yield data and farm records become valuable decision-making tools. If you only eyeball pasture yields, you are likely to notice only significant differences above 1,000 Kg DM per ha.

It is hard to manually spot yield differences of less than 500 Kg DM per hectare. But this is precisely when the inputs or intervention can give you the maximum returns.

That is why the top 10% of profit-making farmers maintain extensive farm records across seasons, years and even decades.

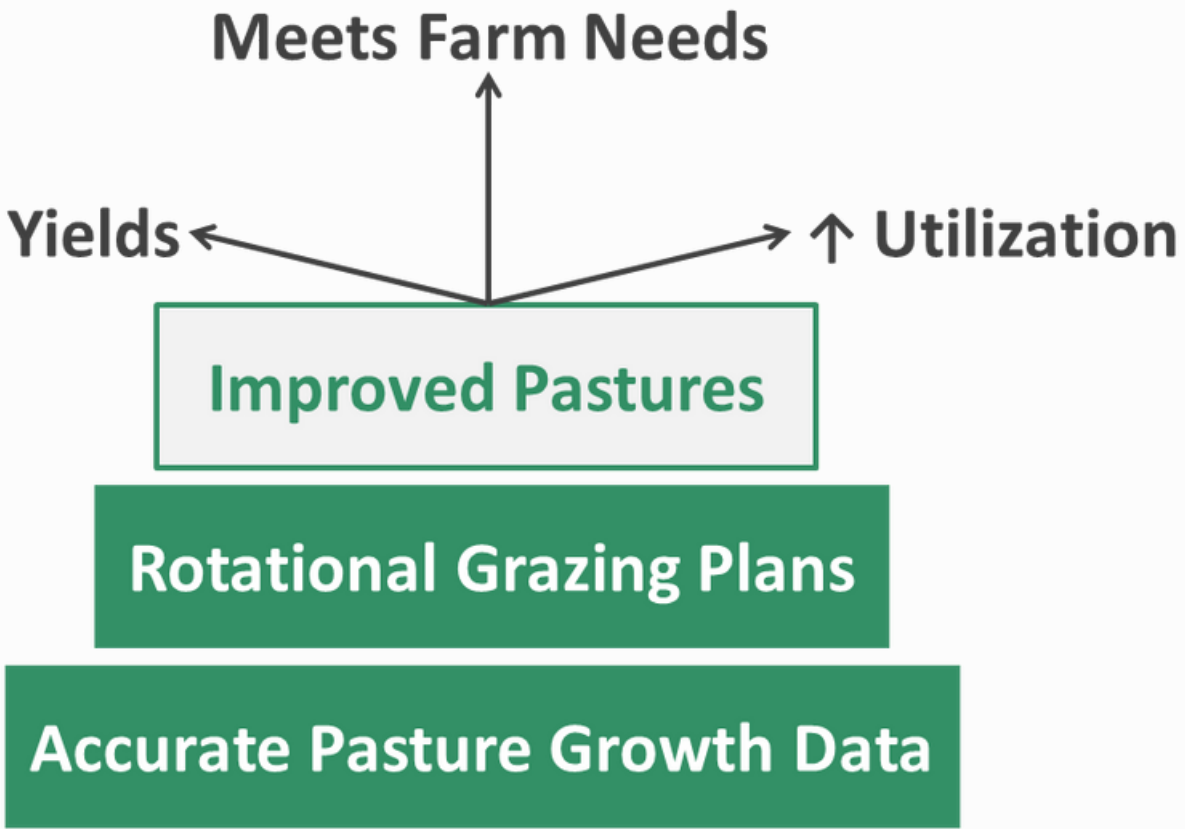
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Pic 9: Pasture.io gives you accurate & automatic pasture growth updates

A recent [study](#) shows that more than half the dairy farms either graze too early or too late. So, they have low pasture utilisation rates. Paddocks that have more than 3,500 Kg DM per ha loses a lot of herbage naturally as it falls, withers and decays. Animals also end up trampling down a lot of herbage back into the soil.

Pic 10: How Improved Pastures Can Help



Instead, if you had accurate pasture growth data, you would be able to earmark these surplus paddocks to be harvested as hay or silage and avoid utilisation losses.

That is why improved pastures, the third step of a profitable pasture comes after putting pasture growth data and rotational grazing systems in place. Only then will you be able to fully utilise improved pastures to meet all your farm needs and increase yields.



SUMMARY

THE PROMISED PROFITS

- The 3 Stages Of Decline
- Show Me The Money
- Saving Costs VS Maximizing Returns

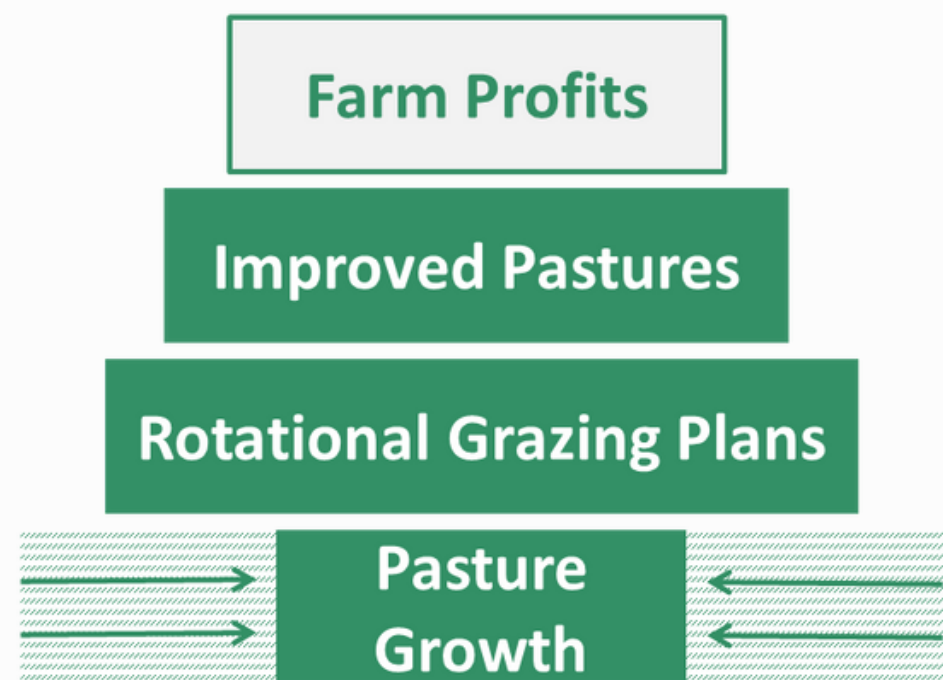
THE 3 STAGES OF DECLINE

We've already seen the three steps of profitable pastures. Before we look at how much additional profit these systems can help you earn – let's quickly look at what can go wrong. Let's look at the three stages of declining pastures.

When you don't have accurate and frequent pasture growth data, you won't be able to fully utilise your pastures or improve yields.

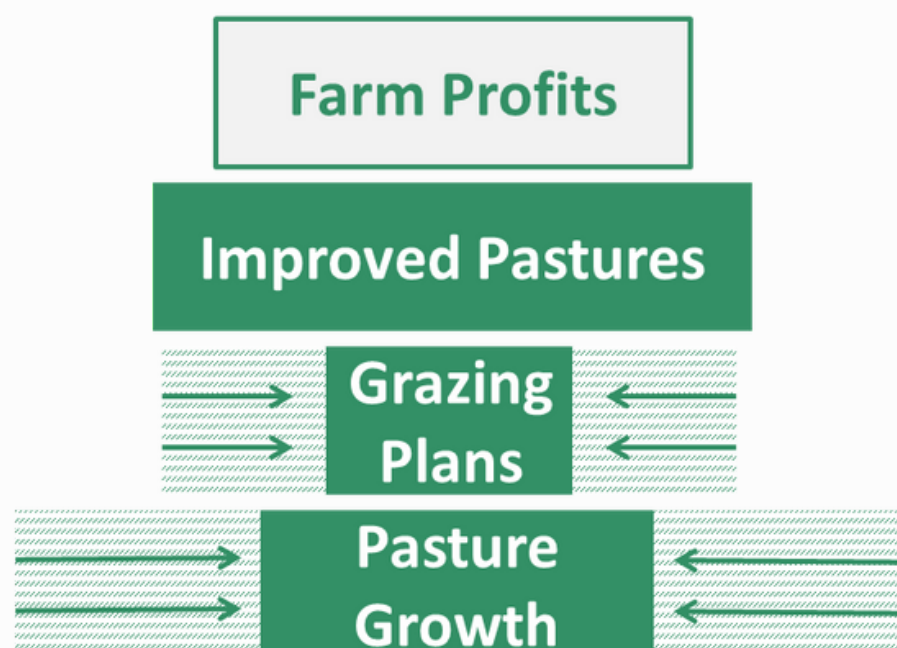
You might even have high yields and grazing plans in place. However, eventually you would end up with overgrazed pastures and poor grazing outcomes.

Stage 1: Overgrazed Pastures



Pic 11: You can lose up to \$385/ ha if pasture growth isn't optimised

Stage 2: Unsustainable Profits



This brings us to the second stage of the decline.

Without robust pasture monitoring and grazing routines in place all your investments into improving your pastures can't yield optimum results.

Like a ship with leaks, your pasture begins to lose yields and fertility.

Pic 12: You can lose up to \$600/ ha with ineffective grazing plans

The final stage of decline has an unstable foundation. It's only a matter of time before the pasture heads into a deep downward spiral.

Despite all your best efforts, the leaks will cumulatively add up to losses.

Unless you begin by putting in the three steps we've discussed so far.

Clearly this is a downward spiral you want to avoid at all costs. Instead, let's look at how to get this right.

Stage 3: Unprofitable Pastures



Pic 13: Mismanagement leads to lower yields and lower profits

SHOW ME THE MONEY

“we’re making between \$60,000 to 80,000 extra every year by getting it right using Pasture.io”

– Stuart Burr, Dairy Farmer, Ringarooma, Tasmania

Extra Profits from Accurate Pasture Growth Data (Step 1)

According to [a recent study](#), accurate pasture growth measurement based grazing can help you earn up to \$385 in additional profits per hectare per year. The additional profits are based on lower feed costs and higher production.

So, in a 200 hectare farm, this means an additional profit of \$77,000 every year. This can mean the difference between earning a good living and just getting by. This alone delivers our promise of helping you earn 60 to 80,000 dollars more every year.

“grazing too early and not achieving target residuals, cost farmers \$600/ ha /season”

– Chapman et al. 2014

Extra Profits from Effective Rotational Grazing (Step 2)

Studies also show that most farmers graze too early and don't achieve residual targets. And they lose up to \$600 per hectare every year. With accurate growth data and sound grazing system in place, you can significantly reduce this loss by at least 50% to 80%. So, in a typical farm of 200 hectares, this means an additional profit of about \$60,000.

Steps Outlined	Extra Profits/ ha	Farm Size of	Increased Profits
Pasture Growth Data	\$ 385 per ha	200 hectares	\$ 77,000
Rotational Grazing	\$ 300 per ha		\$ 60,000
Improved Pastures	\$ 160 per ha		\$ 32,000
Total Possible Extra Profits			\$ 169,000/ year
At 50% Realization, This Results In Extra Profits Of			\$ 84,500/ year

Extra Profits from Improved Pastures (Step 3)

And, if you manage to find the right balance of improved pasture varieties – you could further increase your pasture yields by another 25% to 50%. On average a hectare can produce about 8,000 Kg of DM every year. So even at a conservative 10% increase 800 Kg of DM/ ha every year at a value of 2 cents per Kg gives you \$160 per ha every year.

STEP 1 > STEP 2 > STEP 3 > SUMMARY: PROMISED PROFITS

SAVINGS VS BETTER RETURNS

Before you depart this guide we want to leave you with one last thought. It's important to think about maximising your returns instead of just saving money.

For example, measuring your pasture growth data can cost around \$3,000 a year. But this can help you earn an additional \$80,000. That's more than a 25x return on your investment. That's an irresistible investment opportunity isn't it?

Thank you for investing your time with us. We really appreciate your trust and would love to hear what you thought about this digital guide. In case you would like to share your feedback or ask us a few questions you can write to us at support@pasture.io.

ABOUT PASTURE.IO

Pasture.io helps farmers earn more profits by helping them make effective daily grazing decisions. We help them improve production, lower their costs and earn more profits.

To do this we use satellites, artificial intelligence, your farm records and local weather data to give you accurate grazing recommendations, several times a week, on your phone. So you get your pasture measurements automatically, at zero time and labour cost.



Our farmers get up to a 40 times profit return on their investment with us. If interested, please check out our [free and paid plans](#). Until we meet again, happy farming.

FURTHER READING

PASTURE GROWTH & MEASUREMENT

[Use Pasture Measurement to Improve Your Management](#)

[Measuring your pasture to find your optimal stocking rate](#)

[The basics of forage growth and intensive grazing management](#)

ROTATIONAL GRAZING

[Everything you need to know about grazing systems](#)

[Rotational grazing methods by the University of Kentucky](#)

[Methods of Grazing Management by Penn State University](#)

IMPROVED PASTURES

[The nutrient management guide - Section 3](#)

[Opportunities to improve grazing management](#)

[The ultimate guide to help you manage your pasture](#)

THE PROMISED PROFITS

[Regular herbage mass estimates can improve profits of pasture-based dairy systems](#)

[Hidden dollars in grazing management: getting the most profits from pastures](#)

[Focus on pasture is the key key to surviving volatility](#)

[How pasture.io helps livestock farmers earn more profits](#)