

GAIN
MOMENTUM
PROGRAMME

GREAT GRASS
Maximising Grassland Yields



GRASS AND FORAGE SEED BROCHURE 2023

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WELCOME TO THE TIRLÁN MASTERCROP GRASS AND FORAGE SEED BROCHURE 2023

Every year brings new challenges and with energy driving input costs across the supply chain, 2023 will be no exception, therefore the return on investment will be looked at very closely, the one certainty is that grazed grass is still the cheapest form of feed and re-seeding is the best way to maximise that return.

In this year's brochure we will look at different options from getting the best out of white clover to managing red clover silage, advantages of multi species and a look at how sustainability is incorporated into everyday farming methods along with information on our new Sustainability Action Payment Programme.

We will also look at a full range of forage crop options that will help cut down on housing and spare winter feed.

The Mastercrop name is synonymous with quality, choice and value for money and the 2023 range of grass seeds certainly delivers on all these criteria and all backed by extensive retail and highly professional agronomic advisory service.

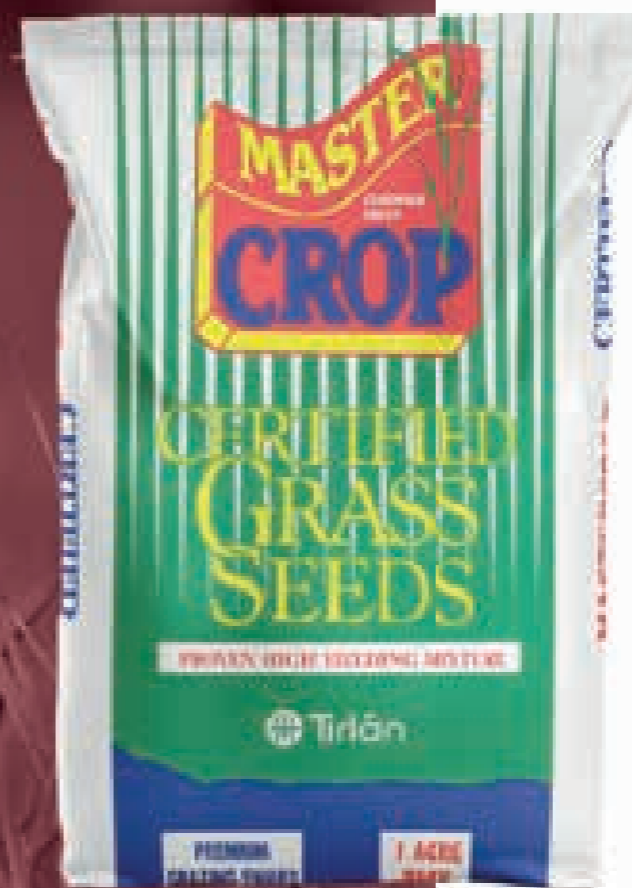
GREAT GRASS Maximising Grassland Yields

Optimising grassland on farm is one of the most economical means to produce milk and beef.

In order to achieve quality grass, it is important to put a full programme in place of quality fertiliser, grass seed and post emergence sprays.

Talk to your local Tirlán representative to learn more about our Great Grass programme.

Phil Meaney,
Grass Seed Technical Advisor, Tirlán



RESEEDING - AN OVERVIEW

Reseeding should be given strong consideration when any of the following features become evident in a sward:

- **High content of weed grasses (e.g. scutch, bent grass).**
- **Low ryegrass content.**
- **High content of broad-leaved weeds e.g. chickweed, docks, thistles and buttercups.**
- **Reduced milk yield or liveweight gain.**
- **Poor re-growth following grazing or cutting.**
- **Bare patches throughout sward.**
- **Reduced silage DMD values.**

In general, swards cut twice annually for silage should be reseeded every 5 - 8 years. For grazed swards, the arguments for reseeding lie in the areas of an extended grazing season, improved re-growth and the continued improvement in yield and quality achieved by the breeding of new ryegrass varieties.

Advantages of reseeding

- **On average, an extra 3 t DM/ha per year is produced from reseeded pastures, mainly in spring.**
- **8% higher milk output/ha relative to permanent pasture.**
- **Use of newer grass varieties.**
- **Improved silage quality.**
- **Swards respond better to applied nitrogen which will increase the NUE (Nitrogen Use Efficiency) of the farm.**
- **Improved grass qualities.**

✓ Reseeding Checklist

- Identify paddocks for reseeding. (poorer performing paddocks; low perennial ryegrass content)
- Soil test and lime.
- Sowing date.
- Method of reseeding.
- Spray off paddock.
- When cultivating - prepare a good seed bed.
- Choose appropriate grass cultivars.
- Sowing rate.
- Roll.
- Slug and other pests.
- Control weed early.
- Graze at 2 leaf stage.
- Avoid poaching and over grazing.

Tirlán Mastercrop delivering premium results in Co. Wicklow



John Wynne discusses his dairy and tillage enterprise and how the farm has adapted to new methods of technology over the years, highlighting the importance of efficient reseeding practices with Tirlán Mastercrop Premium grass seed.

Farm and grazing system

John Wynne farms outside Baltinglass, Co. Wicklow on his family dairy farm. John explains, "we would have historically been a mixed farming system running a combination of dairy, beef and tillage. With the new nitrates rules we've had to reduce stock numbers by cutting the beef finishing system. The dairy herd is split calving to fulfil a liquid milk contract with Tirlán with 160 cows calving in the spring and 140 in the autumn. Traditionally, the herd would have been a pure Holstein cow, but more recently we've moved to a Holstein cross British Friesian, aiming to have a more robust cow that is lower maintenance with a higher EBI." Calving started on John's farm the 1st February with 40% of the herd calved in the first 3 weeks. John's main aim is to get cows to grass early, "we're working off an opening farm cover of 820 kg/dm/ha which I'm very happy with. The cows are out grazing by day on lower cover paddocks, with the aim to get slurry out when grazed." With effective grazing infrastructure which includes a newly constructed underpass, John grows on average 13 tonne of grass annually. John admits that, "being able to grow good quality grass with good yields is vital. Measuring grass weekly along with a targeted and structured reseeding plan helps maintain yields for the milking cows." Paying particular focus to soil health John's dairy platform is at index 3 and 4 for both phosphorus and potassium. "We soil sample on the farm every 3 years and use a mix of liquid nitrogen and protected urea throughout the grazing season."

The importance of reseeding

With the use of information gathered from grass measuring on a weekly basis along with a structured reseeding plan, John can make informed decisions on what paddocks require reseeding. John says that, "the aim on the farm is to reseed paddocks every 10 years, with that it can be hard as each year brings different challenges like drought or low silage stocks." He uses a mix of methods to reseed, depending on the conditions at that time of year. "The disc and power harrow would be the preferred choice here as it keeps the organic matter to the top few inches. However, the plough would be used when reseeding during dry periods with hard soil." John

takes time in ensuring the soil is in perfect condition, with a "fine seedbed" being crucial to good soil seed contact and effective establishment of the seed. At the heart of John's reseeding plan is the Tirlán Mastercrop Premium Grass Seed Mixes, which John has used on all his reseeded in recent years. The Mastercrop Premium Mixture contains some of the best seed mixes on the Pasture Profit Index (PPI), which helps drive grass yield and milk production. John uses both the premium Silage and Grazing Sward on specific paddocks, stating "I've had nothing but good results." With Mastercrop Premium you can achieve up to 40% difference in grass production when compared with older pasture, along with that research states that permanent pastures are up to 25% less responsive to nitrogen when compared to high perennial ryegrass swards according to trials at Teagasc Moorepark.

The benefits of reseeding

John highlighted a number of benefits since implementing a reseeding programme and how the Mastercrop Premium has improved his grazing system. "Working on a focused reseeding plan has ensured the farm keeps improving. Physically being able to see the difference in grass growth during the shoulders of the year is enough to convince me," John admits. Extending the grazing season not only reduces costs but can reduce greenhouse gas emissions by 1.7% for every extra 10 days at grass, according to Teagasc.

John also highlighted other notable benefits which help maximise farm performance. He believes that, "the earlier growth in the spring and the improved resistance to drought during the summer along with improved re-growth are the main benefits within my system. In new reseeded I would be back in that same paddock in 18 days or less at a cover of 1300 kg/dm/ha. I can also see in the parlour better milk production when cows come out a new reseeded paddock, which means more litres for me."

Value for money

Reseeding smarter is John's main aim. He's constantly looking for ways that reduce the cost of getting seed into the ground without compromising establishment. "The seed is excellent value for money and is the cheapest part of the whole reseeding process. Finding ways of reseeding smarter and improving soil health is something we all need to improve on," says John. With guidance from John's Tirlán business manager, Sean Jackson, he can implement best practices to ensure effective reseed. John was quick to highlight the quality of advice offered. "Sean is a great help and is someone with huge experience in the agricultural sector. He would call before and after starting the work, and helps in making decisions including seed rate and chemical applications."

Looking to the future, John is set for another productive grazing season, with an aim to have 1/3 of the platform grazed by the end of February. "I plan to reseed another few paddocks whenever the opportunity arises, coupled with some building work of a new slurry lagoon. The National Farm Survey (2021) showed Dairy farmers grow about 10.5t (DM) of grass compared to 13.5t (DM) for PBI users or more grown on research farms. In a typical year an extra 2t (DM) grass herbage at farm level is worth in the region of €200 to €250 per cow when stocked at 2.5 to 2.0 cows per ha. This is nearly twice that in a year of inflated input price that has been experienced of late."

NITRATES DEROGATION OVERVIEW

Ireland's nitrates derogation provides farmers an opportunity to farm at higher stocking rates, above 170kg of N/Ha, currently to a maximum of 250kg N/Ha. This is subject to additional conditions designed to protect the environment.

New grass reseeding completed by derogation farmers must include clover.

From 2022 a minimum of 1.5 kg/ha naked clover seed OR 2.5 kg/ha of pelleted clover seed is required for all new grass reseeds. Either white (grazing) or red (cutting), mixture of clovers can be used. Over sowing of grass seed mixtures with clover post weed control will be permitted provided it's done in the year of reseeding.

Save money, enhance the environment!

Ireland has a natural resource of almost four million hectares of grassland which combined with our mild, moist and changeable climate allow us to grow abundant grass, and produce milk naturally and at low cost.

We are currently not optimising grass production and utilisation. Teagasc research indicates that the current levels of grass growth can be increased significantly.

Our Great Grass programme is here to help you improve soil nutrition and grassland yields.

The table below shows how soil pH effects the availability of Nitrogen (N), Phosphorus (P), and Potassium (K)

Studies have shown lime applications can give a 7:1 return on investment

| | pH 4.5 | pH 5.0 | pH 5.5 | pH 6.0 | pH 7.0 |
|----------------|--------|--------|--------|--------|--------|
| Nitrogen (N) | 30% | 43% | 77% | 89% | 100% |
| Phosphorus (P) | 23% | 31% | 48% | 52% | 100% |
| Potassium (K) | 33% | 52% | 77% | 100% | 100% |

Nitrates Derogation states that farmers availing of the derogation who wish to plough grassland can only do so between March 1st and May 31st.

CULTIVATION METHODS

Whatever method of seedbed preparation is used, the ultimate aim must be to produce a fine firm seedbed.

This will ensure:

- Good contact between soil and seed.
- Moisture is conserved in the soil.
- A level field will result.
- For farmers in derogation Grassland can only be ploughed between 1st March and 31st May and should be sowed within 3 weeks.

Ploughing

- Avoid ploughing too deep (>15 cm) as this can bury the top layer of soil (the most fertile soil).
- Use land leveller until an even seedbed is generated.
- Aim to develop a fine, firm and level seedbed.
- If seedbed is cloddy and loose, grass seed (and especially clover seed) will be too deep and will not germinate.

Discing & One-pass

- Aim for 3 to 4 passes of the disc harrow in angled directions to break the sod and turn up enough soil to for a seedbed.
- Forward speed must not be excessive as it can lead to rough, uneven seedbeds.

One-pass

- The slower the forward speed of the machine the better in terms of finish.
- Often left rough and patchy due to operators moving too fast across fields.

Spring vs. Autumn for water quality

Cultivation of the of soils in the autumn can lead to an increase in mineralization of N in the soils and with the N demand low in bare soils / freshly set grass seed coupled with higher rainfall, nitrate can be leached more readily into groundwater in the autumn so carrying out an earlier reseed is more favourable. For farmers in derogation livestock manure should not be spread in the autumn before grass cultivation.

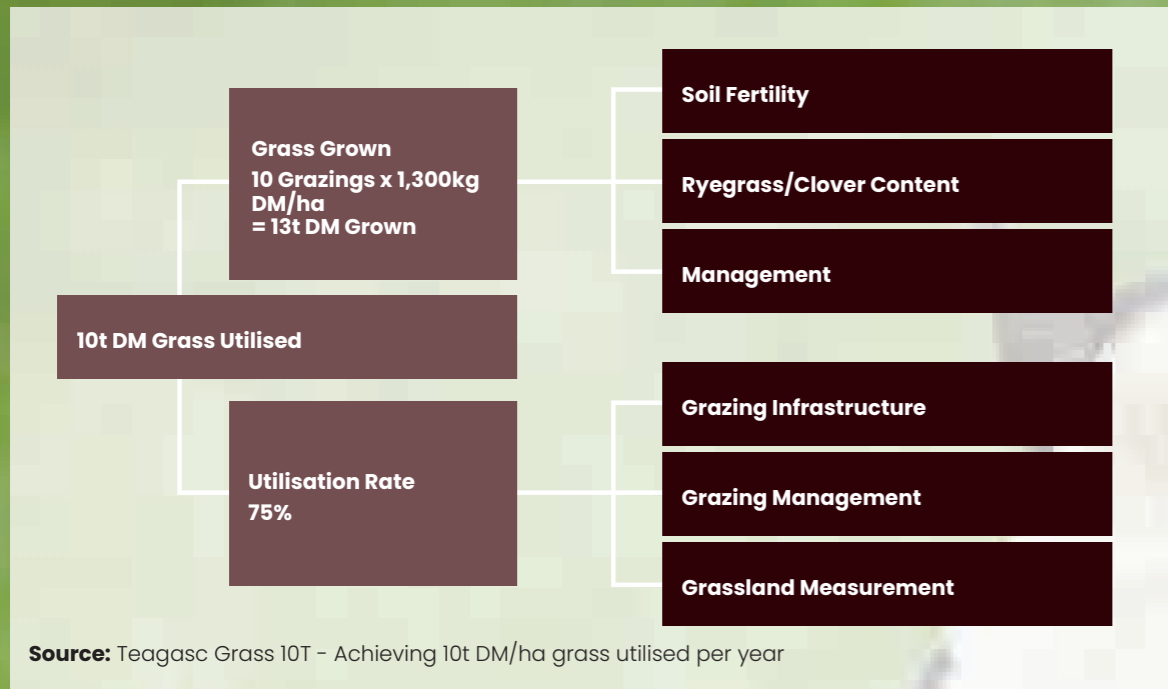
| CULTIVATION TECHNIQUES | | |
|------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| | DO | DO NOT |
| Ploughing | Shallow plough. Develop a fine, firm and level seedbed. | Plough too deep (>15 cm). Cloddy, loose seedbed. |
| Discing | Graze tight, apply lime. 3-4 runs angled directions. | Forward speed too fast - rough, uneven seedbed. |
| One-pass | Graze tight, apply lime. Slow forward speed at cultivation | Forward speed too fast - rough, uneven seedbed. |
| Direct drill | Graze tight, apply lime and slug pellets. Wait for moist ground conditions (slight cut in ground). | 'Trashy' seedbed - no seed/soil contact. Use when ground is dry and hard. |

Top Tip

We should be mindful of buffers when it comes to ploughing beside streams and watercourses. A minimum buffer of 1.5m should be maintained for grassland reseeds so as to provide a sediment trap for break the potential for nutrient runoff.

Aim to minimise the amount of time that the soil is bare while cultivation of the field is ongoing - this will help ensure that nutrients and sediment are at less risk of leaching or being washed off while there is no crop in place.

Roll after sowing to prevent large sediment losses if high rainfall occurs.



IMPROVING GRASSLAND UTILISATION

Grass utilised (measured in tonnes DM/ha) can be increased on farms by either increasing the amount of grass grown and/or improving the utilisation rate. How much grass is grown is influenced by soil fertility, sward composition (ryegrass/clover content of swards) and grassland management decisions (including measurement).

The utilisation rate is influenced by grazing infrastructure, grazing management and grassland measurement.

Grass10 which is a four year campaign from Teagasc to promote sustainable grassland excellence will focus on each of these areas.

The objective of Grass10 is to increase the number of grazings per paddock to 10 and the amount of grass utilised to 10 tonnes grass dry matter per hectare.

As part of the nitrates derogation, participants must complete a minimum of 20 grass measurements on PastureBase Ireland OR Attend a grassland management course.

NITROGEN USE EFFICIENCY - (NUE)

Nitrogen use efficiency is the efficiency in that the N entering the farm is utilised within the farm and converted to product that is sold from the farm. The sources of N entering the system: Chemical N, Organic N (Slurry, farmyard manure and urine deposited to pasture by animals), Concentrates and feed purchased. Incorporating clover has the ability to improve NUE due to the reduction in chemical N inputs whilst also increasing animal output. Sources of N removed from the farm: (Milk, Cull cows, calves).

Nitrogen use efficiency can be significantly improved by better grazing management and grass measurement. Measuring grass and using the tools and technologies available will increase tonnes of dry matter grown per hectare and increase the overall utilisation of this grass.

The current average NUE on farm at 25%, with an industry goal to increase this to 35% across all farms.

SOIL NUTRITION MANAGEMENT

Guidelines

- Soil test for pH, P and K.
- Aim to have correct soil pH particularly for clover swards.
- To utilise organic fertiliser as effectively as possible analyse nutrient content.

Table below shows P & K requirement when reseeding at different index levels P & K rates requires for pasture establishment.

| Soil P Index | Range | Range kg/ha |
|--------------|----------|-------------|
| 1 | 0-3.0 | 60 |
| 2 | 3.1-5.0 | 40 |
| 3 | 6.1-10.0 | 30 |

| Soil K Index | Range | Range kg/ha |
|--------------|---------|-------------|
| 1 | 0-50 | 110 |
| 2 | 51-100 | 75 |
| 3 | 101-150 | 50 |

Conversation

| Soil P Index | Range | Range kg/ha |
|--------------|-------|-------------|
| | P | K |
| Pig | 7 | 20 |
| Soil Water | 0.7 | 5 |
| Cattle | 6 | 32 |

(kg/ha x 0.8 = units/ac)

SOIL NUTRITION PROGRAMME

Tirlán's Soil Nutrition Programme offers soil testing services to create a soil nutrient plan.

If you're interested in this service contact your local Tirlán Representative or branch.



SUSTAINABILITY ACTION PAYMENT

Tirlán's Sustainability Action Payment programme is in place to assist our 5,000 milk suppliers in enhancing the environmental and economic sustainability of our network of family farms.

Tirlán operates a world-class food supply chain with a strong focus on quality and sustainability. The programme is designed to assist dairy suppliers in reducing the carbon footprint, enhancing water quality and biodiversity and improving air quality and soil health of farms in line with Tirlán's sustainability strategy, Living Proof.

As part of this initiative, dairy suppliers will receive 0.5 cent per litre (cpl) (including VAT) through delivering specific sustainability actions. This will equate to almost €3,000 in 2023 for the average supplier. Across the lifetime of this three-year programme, circa. €54 million in total will be made available to family farms for continuing to adopt a range of actions.

The measures are closely aligned with the climate action measures identified in Teagasc's emissions reduction Marginal Abatement Cost Curve (MACC) climate plan.



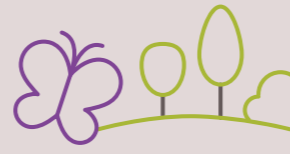
CARBON REDUCTION

- Measuring grass growth
- Incorporating clover*
- Multi-species swards*
 - Milk Recording
 - Improve herd EBI
- FarmGen solar energy*
- Use of sexed semen



AIR QUALITY

- LESS equipment
- Protected urea*
- Low Protein Concentrate Feed*



BIODIVERSITY

- Native trees*
- Hedgerows*



SOIL HEALTH

- Nutrient management plan



WATER PROTECTION

- Water quality improvement plan
- Water protection measures



ANIMAL HEALTH

- SCC improvement
- Herd Disease Screening*
- Twenty20 Beef Club

*Delivery of the actions will be verified by purchase of relevant product/service from Tirlán.



Sustainability Action Payment – Menu of Options

Suppliers need to action seven options to receive full payment from January 2024.

| Sustainability Option | On-Farm Action | Requirement | When Action to be Taken |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------|
| 1. Measuring Grass Growth | Grass cover measurement & uploaded to PastureBase Ireland or equivalent | Minimum of 10 covers uploaded/year | 2023 |
| 2. Clover incorporation | Clover seed purchased in 2021-2023 from Tirlán | Minimum purchase of 5 Kg | 2021-2023 |
| 3. Multi-species swards | MSS seed purchased in 2021-2023 from Tirlán | Minimum purchase of seed required for sowing 2 acres (24 Kg) | 2021-2023 |
| 4. Milk recording | Engage in milk recording for the herd | Minimum of four recordings/year | 2023 |
| 5. Improve Herd EBI | EBI of the herd is improved vs previous year | Improvement of €1 or greater required | 2023 vs 2022 |
| 6. Low Emissions Slurry Spreading | Spread Slurry using Low Emissions Equipment | Some or all slurry spread by LESS | 2023 |
| 7. Purchase of Protected Urea | Purchase of protected urea fertiliser from Tirlán | 0.5 tonne purchased per 100,000 litres of milk supplied in 2023 | 2023 |
| 8. Native trees | Additional native trees on the farm via Tirlán | Minimum 20 trees purchased | 2023 |
| 9. Hedgerows | Additional hedgerows on the farm via Tirlán | Minimum 100 hedging plants purchased | 2023 |
| 10. Nutrient Management Planning | Soil Nutrient Management Plan in place | NMP in place for 2023 | 2021-2023 |
| 11. ASSAP water quality planning | ASSAP water quality plan completed where farm is in EPA water quality Priority Area for Action (PAA) | Where required, to be completed in 2023 or before | In 2023 or before |
| 12. Fencing off watercourses | At least one field/paddock with drain, river or stream watercourse permanently fenced off | Completed during 2021-2023 & outlined on a farm map | 2021-2023 |
| 13. Renewable energy generation | Renewable energy generation system installed & operational - solar PV, solar thermal or wind | System in place in 2023, including previous installations. Solar PV installations from 2022 to be FarmGen | Installed in 2023 or before |
| 14. Herd Disease Screening | Participating in Tirlán bulk tank disease screening service | Three or more tests/year for minimum of six diseases | 2023 |
| 15. Twenty20 Beef Club | Participant in Tirlán Twenty20 Beef Club | Calf supplier or rearer as part of Twenty20 Beef Club | 2023 |
| 16. Udder Health | Management of mastitis in the herd through 2023 delivers a low or improved herd SCC | 2023 average SCC for the herd is lower than 2022 OR average herd SCC for 2023 is less than 150,000 cells/ml | 2023 vs 2022 |
| 17. Low Protein Concentrate Feed | Purchase of low protein dairy feed, (max 15% crude protein) from 15 th April to 30 th September, from Tirlán | Four tonnes purchased per 100,000 litres of milk supplied in 2023 | 2023 |
| 18. Use of sexed semen | Use of sexed semen inseminations in the dairy cows and/or replacements | Receipts for sexed semen purchases or ICBF breeding data records | 2023 |

Next Steps: Sustainability Action Payment 2024 – Take Action Now

As per the table above, 2023 is the reference year for many of the 18 sustainability actions. Therefore it is important to decide on which seven actions, at a minimum, you are going to implement this year. Delivery on these will ensure receipt of the full Sustainability Action Payment in 2024.

LIVING PROOF

Our comprehensive sustainability strategy

As part of our sustainability strategy, Living Proof, Tirlán has pledged to achieve a 30% absolute reduction in carbon emissions from its processing sites and a 30% reduction in GHG emissions associated with each litre of milk produced by 2030. The company is also committed to delivering on Science Based Targets initiative (SBTi) to show its clear and unambiguous commitment to reducing greenhouse gas (GHG) emissions by implementing the best science and technology.



Herbicides for control of weeds in grassland

| MAIN TARGET WEED | PRODUCT | PCS NO. | ACTIVE INGREDIENT | RATE | COMMENT |
|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Docks | Governor (Doxstar) | 06355 | 150 g/l Triclopyr, 150 g/l Fluroxypyr | 2.0 l/ha | One application or split application with half rate in Spring and half rate in Autumn. Will kill clover. Must leave a minimum of 7 days between spraying and cutting but best results are achieved if the interval is > 3 weeks. Same as Doxstar Pro. |
| | Esteem (Pastor Trio) | 06356 | 100 g/l Fluoxypr, 2.5 g/l Florasulam, 80 g/l Clopyralid | 2.0 l/ha | Will kill Clover. Excellent on docks, thistles, chickweed, mayweed and buttercrops. Will offer some control on nettles. Can be used on newly sown leys at a rate of 1.0 l/ha, will kill clover however. Same as Pastor Trio. |
| | Eagle | 04315 | 75 g/kg Amidosulfuron | 40-60 g/ha | Clover safe. Controls both broadleaf and curled docks. |
| | Barclay Hurler | 02905 | 200 g/l Fluroxypyr | 2.0 l/ha | Medium term dock control, excellent on chickweed. Can be used on new leys at 0.75l/ha. Will kill clover. |
| | Forefront T | 05395 | 30 g/l Aminopyralid, 240 g/l Triclopyr | 2.0 l/ha | Excellent long-term control of docks, nettles, thistles, buttercup, dandelion and ragwort. Will kill clover. Do not graze for at least 7 days after application. Only use on silage ground once last cut is taken but before the end of July. |
| | (Pasture Pack) 5 L Thrust 2 L Tandus | 04520 05836 | 344 g/l 2,4-D, 120 g/l Dicamba 200 g/l Fluroxypyr | 1 pack/2ha 2.5 l/ha Thr +1.0 l/ha Tan | For use on established grassland only. Also strong on ragwort, chickweed and dandelion etc. Can cut for silage and graze 14 days after application. |
| Thistles | M50 50% (MCPA) | 05510 | 500 g/l MCPA | 2.7 l/ha | Treat before flower buds appear. Maximum of 2 applications/year. Do not spray within 5m of a water source. |
| | Thistlex | 03831 | 200 g/l Triclopyr, 200 g/l Clopyralid | 1.0 l/ha | Excellent knockdown of thistles; also effective on nettles. Will kill clover. |
| Ragwort | Stapler (D50) | 06857 05395 05393 | 500 g/l 2,4 D dimethylamine salt 30 g/l Aminopyralid, 240 g/l Triclopyr 30g/l Aminopyralid & 100g/l Fluroxypyr | 2.8 - 3.3 l/ha 2.0 l/ha 2.0l/ha | Treat ragwort at rosette stage before end of April. If weeds are gone to seed, top and spray the regrowth. Avoid extremes of temperature when spraying. Excellent long term control on Docks, thistles, nettles, buttercups and Ragwort. Very good on chickweed too. 7 day grazing interval and don't use on silage ground. Apply before end July. |
| Rushes | M50 50% (MCPA) | 05505 | 500 g/l MCPA | 2.7 l/ha | Best results are achieved when the rush is soft and actively growing, i.e. after topping. The addition of a surfactant such as Presto/ Torpedo / Solar Plus at 200mls/ha will also enhance performance. |
| Docks, Thistles & Nettles | Pradera | 06524 | 233g/l MCPA 50g/l Fluroxypyr 28g/ Clopyralid | 3.0 Litres/ha | One application a year from 1st March to 31st August, Can graze / Harvest 7 days after application. For high infestations of docks add Hurler @ 1.3l/ha. |
| | Grazon Pro | 05182 | 60 g/l Clopyralid, 240 g/l Triclopyr | 60 ml in 10 l knapsack | Very useful product for spot treatment only (with knapsack). Can graze pasture 7 days after treatment provided no ragwort present. Apply any time of year that weeds are actively growing. |
| | Scrubkiller Ultra | 06734 | 240 g/l Triclopyr , 60 g/l Clopyraild | 60 ml in 10 l knapsack | For spot treatment only (with knapsack). Can graze pasture 7 days after treatment provided no ragwort present. Apply any time of year that weeds are actively growing. |
| Seedling weeds in new ley (Clover-Safe) on condition the product gets Department of Agriculture derogation for 2023. | DB Plus | 06959 | 240 g/l 2,4 DB, 40 g/l MCPA | 7.0 l/ha | Controls seeding docks, fat hen. Clover safe. Will not control Chickweed. |
| Seedling Weeds in New Ley (Non Clover Safe) | Envy | 05806 | 100 g/l Fluoxypr, 2.5 g/l Florasulam | 1.5 l/ha | Can also be used on established grassland at 2.0 l/ha. Excellent on daisy, buttercrop and dandelion. |
| | Esteem | 06356 | 100 g/l Fluoxypr, 2.5 g/l Florasulam, 80 g/l Clopyralid | 1.0 l/ha rate for new leys | Apply between 1st Feb - 30th Sep. Good on cleavers, thistle, mayweed and charlock. Poor on fat hen. Same as Pastor Trio. |
| Grassland Destruction | Garryowen XL | 05660 | 360 g/l Glyphosate plus wetters/surfactants depending on product | 6.0 l/ha | Translocation and overall effectiveness of product will be affected by growing condition. Grassland can be cut/grazed 5 days after application. |
| | Glypho Rapid | | 450 g/l Glyphosate (plus wetters/surfactants) | 4.44 l/ha | Formulation of glyphosphate from Barclays with improved uptake and rainfastness. |

PREMIUM MIXTURES

These represent the elite products from the Mastercrop range, formulated with the intensive, top-class farmer in mind.

BENEFITS

- Use AberGain (T), Astonenergy (T) and Aberchoice with very high D values.
- Meiduno with its exceptional spring growth.
- Focus on later heading varieties, in order to maximise digestibility of the sward through the summer and autumn growing period.
- Judicious use of tetraploid varieties which have high yield, palatability and drought tolerance characteristics.
- Combination of two leading Nitrogen tolerant clover varieties.
- Only the leading varieties of grass and clover on Irish recommended list used, to promote maximum yields.
- Clover coating to improve germination and establishment (Clover coating ratio of two-thirds: one third 'clover to coat' is unique to Mastercrop mixtures).

PREMIUM GRAZING SWARD

Suitability

- Intensive, continuous grazing systems.

Key points

- Inclusion Abergain ensures maximum spring growth.
- Aberchoice and Astonenergy with their high D values.
- 56% Tetraploid.
- Combination of leading small and medium-leaved clovers on recommended list.
- A highly palatable mixture.

| | | Heading Date |
|-----------|-----------------------|--------------|
| 3.0 kgs | Aberchoice | 11th June |
| 3.5 kgs | Aston Energy (T) | 1st June |
| 3.0 kgs | AberGain (T) | 4th June |
| 2.0 kgs | AberBann | 10th June |
| 1.0 kgs | Med leaf White Clover | |
| 12.50 kgs | | |

40% DIFFERENCE IN GRASS PRODUCTION BETWEEN FARMS

AVAILABLE WITH 1KG OF PLANTAIN AS AN OPTION

PREMIUM ONE CUT & GRAZE

Suitability

- Grazing with one large silage cut in late May/early June.

Key points

- Judicious use of Tetraploid varieties which have high yield, palatability and drought tolerance characteristics.
- Also suitable for early grazing before closing up for silage.
- 47% Tetraploid.

| | | Heading Date |
|-----------|-----------------------|--------------|
| 3.0 kgs | Astonconqueror | 27th May |
| 3.0 kgs | Abermagic | 28th May |
| 3.5 kgs | Glenfield (T) | 3rd June |
| 2.0 kgs | Ballintoy (T) | 4th June |
| 1.0 kgs | Med leaf white clover | |
| 12.50 kgs | | |

TETRAPLOID MIX

Key points

- High digestibility and palatability - improving animal intakes.
- Larger leaf size and a more upright growth habit making them easier to graze.
- Produces slightly higher grass yield and offers improved animal performance under grazing.

- Teagasc research has demonstrated the increased ease with which animals can graze on Tetraploid swards over diploids, improving the utilisation of the sward.
- Suitable for overseeding - to repair unproductive swards, sow at a rate of 8 kgs/acre when overseeding.

| | | Heading Date |
|--------|-----------------------|--------------|
| 4.0 kg | Nashota (T) | 3rd June |
| 4.0 kg | Aston Energy (T) | 1st June |
| 4.0 kg | AberGain (T) | 4th June |
| 1.0 kg | Med leaf white clover | |
| 13 kgs | | |

PERMANENT PASTURE

Permanent Pasture (Incl. Hi Clover)

| | | Heading Date |
|----------|-----------------------|--------------|
| 2.5 kgs | OakPark | 2nd June |
| 3.0 kgs | Meiduno (T) | 3rd June |
| 2.0 kgs | Nashota (T) | 3rd June |
| 3.4 kgs | AberBann | 10th June |
| 0.6 kgs | Med leaf white clover | |
| 11.5 kgs | | |

PREMIUM SILAGE SWARD

Suitability

- Intensive two-cut silage systems.

1% DMD increase equates to a 5% improvement in animal performance

Key points

- Leading conservation varieties.
- Clover available on request increasing options of weed control.
- Narrow range of heading dates for optimum silage production.

| | | Heading Date |
|----------|---------------|--------------|
| 3.5 kgs | Aberclyde (T) | 25th May |
| 4.0 kgs | Abermagic | 28th May |
| 4.0 kgs | Moir | 26th May |
| 11.5 kgs | | |

RED CLOVER SILAGE

As farmers come under increased pressure regarding input costs and environmental emissions targets, Red clover silage is something that may help. With the potential to grow 15 T of DM without Nitrogen it seems the perfect answer but there are a number of important management factors that need to be applied.

- **Grazing and tight grazing will shorten the life of the sward so ideally cutting only.**
- **Spray for weeds with DB Plus once clover has one leaf usually 5 weeks after sowing.**
- **Fert requirements – Red Clover fixes its own N but 20 kg /acre will aid establishment, Ph of 6-6.5 is required and then replace what is taken off for silage work at Solohead suggest 25 kgs of Potash (K) and 3 kgs of Phosphate (P) for every tonne of dry matter (DM) harvested, they apply 3 k Gals of Slurry and two bags of 0/7/30 three times during the year.**

- **Cutting – cut when 10% of the field is in flower at 8 – 10 cm (no lower) and avoid driving on the crop where possible.**
- **Red clover swards are much harder to ensile, it needs to be wilted for 48 hours and may require an additive.**
- **Red Clover should last 3 –4 years where the white clover will boost growth for a couple of years before reseeding will be required but there is a big saving on N use.**
- **A five year break after growing Red clover is a must as Stem Nematode can be a problem.**

Red Clover Silage Mix

| | | Heading Date |
|---------|---------------|--------------|
| 3.5 kgs | Aberclyde (T) | 28th May |
| 3.5 kgs | Moir | 26th May |
| 1.0 kg | White Clover | |
| 4.0 kgs | Red Clover | |
| 12 kgs | | |



These are proven, tried and trusted mixtures which combine sound principles of mixture formulation with varieties which have performed consistently well in recommended list trials. They represent excellent performance at a reduced cost.

HI CLOVER SWARD

20% clover content in pasture to contribute N

Hi clover sward is the same as permanent pasture plus extra 1.5 kg of clover making it a 13 kg mixture with 2 kg of clover.

Suitability

- Grazing with option of one silage cut in late May/early June.

Key points

- Excellent total yield across grazing season.
- Large leafed clover plant which will fix N and allow for reduced chemical applications.
- Outstanding flexibility to suit wide range of management systems.

For proper establishment of clover it is important to sow earlier in the year as it takes up to 10 weeks for it to establish properly. Clover does not have the N fixation ability for the 1st year post-sowing

Over sowing of clover

This provides the opportunity to incorporate more clover across the farm promptly. This should be carried out between late spring and early summer with higher sowing rates of between 3.5-5kg/ha.



Moorepark Experiment

1. Grass / clover - 150 kg N/ha
2. Grass / clover - 250 kg N/ha
3. Grass only - 250 kg N/ha
With 2.75 cows/ha

| Moorepark Clover Trial 2020 Update | Grass-Only Sward (250 Kg N/ha) | Grass-White Clover Sward (150kg N/ha) |
|------------------------------------|--------------------------------|---------------------------------------|
| Milk Yield (kg/cow/day) | 21.24 | 22.23 |
| Milk Solids yield (kg/cow/day) | 1.69 | 1.92 |
| Fat% | 4.44 | 4.90 |
| Protein% | 3.56 | 3.79 |
| Pre-grazing yield (kg DM/ha) | 1300 | 1300 |
| Post-grazing sward height (cm) | 4.3 | 4.2 |
| Milk Solids produced YTD (kg/cow) | 322 | 339 |
| Grass Grown YTD (T DM/ha) | 8.4 | 8.5 |
| Clover % / paddock | - | 39.5 |

Clonakilty Experiment

Extra revenue from clover:

- €245/cow or €675/ha
- Significant potential to improve profitability



Benefits of White Clover

- Improved NUE
- Improved dry matter intake
- Improved milk solids
- Enhanced wildlife habitat
- White clover content in sward varies across the year; it is lowest in spring, increases to a peak in late summer, and then begins to decline during autumn.
- Annual milk solids production can be increased by up to 12 kg milk solids/cow when average annual sward white clover content is 23 per cent.
- Average clover content of 20% in the pasture is required to contribute N.
- Frequent tight grazing (4-4.5 cm above ground level) of grass-clover swards will encourage clover persistence in grazed swards.



Benefits of Multi Species Sward

- Similar DM yields to Perennial Rye Grass swards at significantly lower rates of inorganic N fertiliser.
- More tolerant of drought conditions due to warm-season deep-rooting species chicory and plantain.
- Reduces N20 (nitrous oxide) emissions and nitrate leaching.
- Higher rates of carbon sequestration due to deeper roots.
- Enhanced biodiversity both below and above the soil.
- To date Johnstown Castle research has shown MSS produced similar milk solids per cow compared to Grass- clover swards.

Management of Multi Species Sward

- Providing animals access to paddocks for a short time (1 – 3 days) will help maintain sward diversity by preventing the selective- and over-grazing of more palatable herb species,
- It is important to provide a sufficient rest period for multi-species swards to recover from grazing. Allowing 21 – 28 days between grazing will improve persistence without reducing forage quality.



MULTI SPECIES SWARD

A Multi-species sward mixture is a mixture of three or more species that complement each other in improved productivity compared to each species grown on its own, typically come from grasses, legumes & herbs with each bringing different benefits to the sward.

| | | | Comments |
|---------|--------------|--------|---------------------------------------------------------------------------------|
| 3.3 kgs | Astonenergy | Grass | High yielding, digestible and persistent under frequent tight grazing |
| 3.3 kgs | Aston King | Grass | High yielding, digestible and persistent under frequent tight grazing |
| 0.7 kgs | Timothy | Grass | Grows well in cold soils, especially in Spring, different root structure to PRG |
| 1.5 kgs | White Clover | Legume | Persistent under tight grazing, fills in gaps in swards |
| 1.5 kgs | Red Clover | Legume | More erect than white, deeper tap root, not persistent under tight grazing |
| 1.0 kgs | Plantain | Herb | |
| 0.7 kgs | Chicory | Herb | Different root structure, anti-worm properties, used as a drought feed |
| 12kgs | | | |

HORSE PASTURE

Key points:

- Designed to produce a high quality grazing and if required, a very high quality hay cut in summer.
- Can be used to patch poached areas on the farm.
- Extremely persistent, dense and hard wearing.
- Packed in half acre bags.

| | |
|-----------|----------------------------|
| 4.50 kgs | Oakpark PRG |
| 4.50 kgs | AstonKing PRG |
| 2.50 kgs | Dwarf Perennial ryegrass |
| 3.00 kgs | Smooth stalked Meadowgrass |
| 1.50 kgs | Timothy |
| 16 kgs/Ac | Packed in half acre bags |

Hill/Heavy Ground Mix

Key points:

- Heavy ground or difficult sites.
- Excellent mid-Summer and Autumn grazing.
- Superb persistence and ground cover.

| | | Heading Date |
|---------|-------------------------|--------------|
| 3.0 kgs | Aston King | 5th June |
| 3.5 kgs | Briant (T) | 3rd June |
| 5.0 kg | OakPark | 2nd June |
| 0.5 kgs | Small leaf white clover | |
| 12 kgs | | |

ORGANIC MIXTURE

Organic grazing mixture (70% organic)

| | | Type | Heading Date |
|--------|--------------------|------------------------|--------------|
| 6 kgs | Organic AberChoice | Perennial Ryegrass (D) | 11th June |
| 4 kgs | Organic AberClyde | Perennial Ryegrass (T) | 25th May |
| 1 kgs | Comer | Timothy | |
| 2 kgs | White Clover Blend | | |
| 13 kgs | | | |

Organic Red Clover Silage

| | | Heading Date |
|----------|------------------------------|--------------|
| 3.0 kgs | Explosion (Organic PRG) | 27th May |
| 2.0 kgs | Astonconqueror (Organic PRG) | 30th May |
| 2.0 kgs | Arelio (Organic PRG) | 3rd June |
| 1.4 kgs | Harmorie organic Red Clover | 4th June |
| 2.6 kgs | Rozeta Red Clover | 3rd June |
| 0.5 kgs | Chieftain White Clover | 4th June |
| 11.5 kgs | 70% Organic | |

RECOMMENDED LISTS 2023

Recommended Intermediate & Late Perennial Ryegrass Varieties 2023 (by maturity and ploidy)

| Variety Name | Ploidy | Heading Date | Pasture Profit Index Values € / Ha / Y | | | | | | | Teagasc Grazing Utilisation Trait |
|---------------------------------|--------|--------------|----------------------------------------|--------|--------|--------|---------|--------|---------|-----------------------------------|
| | | | Sub-Indices | | | | | | | |
| | | | PPI | Spring | Summer | Autumn | Quality | Silage | Persist | Rating 1-5 |
| INTERMEDIATE DIPLOIDS | | | | | | | | | | |
| Abermagic | D | 28th May | 215 | 31 | 64 | 78 | 18 | 24 | 0 | *** |
| Aberwolf | D | 30th May | 209 | 54 | 54 | 48 | 11 | 43 | 0 | ** |
| Moira | D | 26th May | 209 | 108 | 39 | 57 | -32 | 36 | 0 | *** |
| Astonconqueror | D | 27th May | 206 | 75 | 52 | 48 | -10 | 42 | 0 | **** |
| Abergreen | D | 31st May | 193 | 38 | 69 | 70 | 5 | 11 | 0 | * |
| Gusto | D | 31st May | 176 | 50 | 51 | 64 | 2 | 9 | 0 | **** |
| INTERMEDIATE TETRAPLOIDS | | | | | | | | | | |
| Aberclyde | T | 25th May | 253 | 51 | 66 | 46 | 44 | 46 | 0 | **** |
| Barwave | T | 22nd May | 244 | 93 | 61 | 59 | -20 | 50 | 0 | - |
| Fintona | T | 24th May | 190 | 49 | 52 | 49 | -5 | 45 | 0 | ***** |
| Dunluce | T | 29th May | 184 | 23 | 58 | 52 | 24 | 34 | -6 | **** |

Notes: D - Diploid, T = Tetraploid

¹Teagasc Grazing Utilisation Trait - see Appendix 1

UTILISATION STAR RATINGS

STAR RATING



GRAZING UTILISATION RANGE

Moderate



Excellent

Where varieties are represented by a hyphen (-), there is currently no grazing data available

RECOMMENDED LISTS 2023

Recommended Intermediate & Late Perennial Ryegrass Varieties 2023 (by maturity and ploidy)

| Variety Name | Ploidy | Heading Date | Pasture Profit Index Values € / Ha / Y | | | | | | | Teagasc Grazing Utilisation Trait |
|-------------------------|--------|--------------|----------------------------------------|--------|--------|--------|---------|--------|---------|-----------------------------------|
| | | | Sub-Indices | | | | | | | |
| | | | PPI | Spring | Summer | Autumn | Quality | Silage | Persist | Rating 1-5 |
| LATE DIPLOIDS | | | | | | | | | | |
| AberChoice | D | 11th June | 190 | 15 | 65 | 58 | 22 | 30 | 0 | *** |
| AberBann | D | 10th June | 190 | 5 | 81 | 75 | -25 | 54 | 0 | *** |
| Ballyvoy | D | 3rd June | 186 | 65 | 46 | 47 | 19 | 10 | 0 | * |
| Bowie | D | 16th June | 170 | 19 | 53 | 54 | 28 | 16 | 0 | - |
| Oakpark | D | 2nd June | 149 | 32 | 52 | 52 | -12 | 25 | 0 | * |
| Drumbo | D | 5th June | 146 | 24 | 44 | 42 | 24 | 13 | 0 | * |
| Astonking | D | 5th June | 141 | 61 | 50 | 36 | -25 | 18 | 0 | *** |
| Callan | D | 3rd June | 126 | 71 | 39 | 35 | -35 | 16 | 0 | **** |
| LATE TETRAPLOIDS | | | | | | | | | | |
| AberGain | T | 4th June | 241 | 34 | 61 | 50 | 47 | 49 | 0 | **** |
| Gracehill | T | 4th June | 241 | 46 | 60 | 58 | 10 | 67 | 0 | ** |
| Nashota | T | 3rd June | 214 | 53 | 57 | 39 | 28 | 38 | 0 | - |
| Glenfield | T | 3rd June | 207 | 59 | 63 | 40 | 3 | 41 | 0 | - |
| Aberplentiful | T | 8th June | 204 | 59 | 63 | 50 | 11 | 26 | -6 | ** |
| Ballintoy | T | 4th June | 195 | 36 | 60 | 43 | 23 | 32 | 0 | **** |
| Meiduno | T | 3rd June | 195 | 45 | 56 | 46 | 27 | 21 | 0 | **** |
| Anurad | T | 5th June | 191 | 54 | 52 | 41 | 31 | 19 | -6 | *** |
| Aberbite | T | 1st June | 175 | -2 | 56 | 53 | 32 | 36 | 0 | ***** |
| Briant | T | 3rd June | 156 | 10 | 58 | 46 | 13 | 29 | 0 | *** |
| Astonenergy | T | 1st June | 151 | 5 | 47 | 43 | 49 | 6 | 0 | ***** |
| Xenon | T | 7th June | 143 | 12 | 49 | 35 | 29 | 17 | 0 | ***** |
| Triwarwic | T | 2nd June | 141 | 20 | 53 | 30 | 7 | 32 | 0 | - |
| Aspect | T | 3rd June | 136 | 11 | 50 | 30 | 27 | 23 | -6 | ***** |

Notes: D - Diploid, T = Tetraploid

¹Teagasc Grazing Utilisation Trait - see Appendix 1

PASTURE PROFIT INDEX 2023

| | | | | | Pasture Profit Index Values € / Ha / Year | | | | | | Teagasc Grazing Utilisation | Spring | Summer | Autumn | Total Yield | Mean DMD | 1st Cut Silage | 2nd Cut Silage | Ground Cover |
|--------------------------|----------------|--------|--------------|-----------|-------------------------------------------|---------------|---------------|---------|-----------|-------------|-----------------------------|-----------|--------|-----------|-------------|----------|----------------|----------------|--------------|
| | | | | | SUB - INDICES (€ PER HA PER YEAR) | | | Trait | (t DM/ha) | (t DM/ha) | (t DM/ha) | (t DM/ha) | (g/kg) | (t DM/ha) | (t DM/ha) | Score | | | |
| Group | Variety Name | Ploidy | Heading Date | Total PPI | Spring Growth | Summer Growth | Autumn Growth | Quality | Silage | Persistence | Rating 1 - 5 | 1.17 | 7.54 | 2.44 | 11.2 | 843.6 | 4.55 | 4.38 | 5.8 |
| Intermediate Diploids | Moira | D | 26th May | 209 | 108 | 39 | 57 | -32 | 36 | 0 | *** | 1.65 | 7.08 | 2.43 | 11.17 | 826.8 | 4.89 | 4.16 | 6.1 |
| | Astonconqueror | D | 27th May | 206 | 75 | 52 | 48 | -10 | 42 | 0 | **** | 1.46 | 7.39 | 2.34 | 11.19 | 835.7 | 5.21 | 3.93 | 6.2 |
| | Abermagic | D | 28th May | 215 | 31 | 64 | 78 | 18 | 24 | 0 | *** | 1.19 | 7.69 | 2.62 | 11.51 | 844.9 | 4.64 | 4.09 | 6.2 |
| | Aberwolf | D | 30th May | 209 | 54 | 54 | 48 | 11 | 43 | 0 | ** | 1.33 | 7.45 | 2.35 | 11.12 | 840.9 | 4.85 | 4.45 | 6.7 |
| | Abergreen | D | 31st May | 193 | 38 | 69 | 70 | 5 | 11 | 0 | * | 1.23 | 7.82 | 2.55 | 11.60 | 842.2 | 4.31 | 4.13 | 6.5 |
| | Gusto | D | 31st May | 176 | 50 | 51 | 64 | 2 | 9 | 0 | **** | 1.30 | 7.37 | 2.50 | 11.18 | 838.9 | 4.32 | 4.04 | 5.8 |
| Intermediate Tetraploids | Barwave | T | 22th May | 244 | 93 | 61 | 59 | -20 | 50 | 0 | - | 1.56 | 7.62 | 2.45 | 11.64 | 836.0 | 4.98 | 4.51 | 4.9 |
| | Fintona | T | 24th May | 190 | 49 | 52 | 49 | -5 | 45 | 0 | ***** | 1.30 | 7.40 | 2.35 | 11.05 | 839.1 | 5.22 | 4.01 | 5.4 |
| | Aberclyde | T | 25th May | 253 | 51 | 66 | 46 | 44 | 46 | 0 | **** | 1.31 | 7.74 | 2.32 | 11.38 | 852.0 | 5.23 | 4.04 | 5.6 |
| | Dunluce | T | 29th May | 184 | 23 | 58 | 52 | 24 | 34 | -6 | **** | 1.14 | 7.54 | 2.38 | 11.05 | 845.6 | 4.52 | 4.62 | 5.4 |
| Late Diploids | Oakpark | D | 2nd June | 149 | 32 | 52 | 52 | -12 | 25 | 0 | * | 1.19 | 7.40 | 2.38 | 10.98 | 833.3 | 4.33 | 4.55 | 6.5 |
| | Ballyvoy | D | 3rd June | 186 | 65 | 46 | 47 | 19 | 10 | 0 | * | 1.39 | 7.24 | 2.34 | 10.97 | 843.1 | 4.14 | 4.32 | 6.2 |
| | Callan | D | 3rd June | 126 | 71 | 39 | 35 | -35 | 16 | 0 | **** | 1.43 | 7.08 | 2.23 | 10.74 | 830.1 | 4.55 | 3.96 | 6.2 |
| | Drumbo | D | 5th June | 146 | 23 | 44 | 42 | 24 | 13 | 0 | * | 1.14 | 7.19 | 2.29 | 10.62 | 842.6 | 4.19 | 4.36 | 6.2 |
| | Astonking | D | 5th June | 141 | 61 | 50 | 36 | -25 | 18 | 0 | *** | 1.37 | 7.34 | 2.24 | 10.95 | 828.3 | 4.36 | 4.29 | 5.8 |
| | Aberbann | D | 10th June | 190 | 5 | 81 | 75 | -25 | 54 | 0 | *** | 1.03 | 8.11 | 2.59 | 11.74 | 832.2 | 4.46 | 5.36 | 5.9 |
| | Aberchoice | D | 11th June | 190 | 15 | 65 | 58 | 22 | 30 | 0 | *** | 1.09 | 7.73 | 2.44 | 11.26 | 844.8 | 4.18 | 4.93 | 6.0 |
| | Bowie | D | 16th June | 170 | 19 | 53 | 54 | 28 | 16 | 0 | - | 1.11 | 7.43 | 2.40 | 10.94 | 838.7 | 3.63 | 5.22 | 6.4 |
| Late Tetraploids | Aberbite | T | 1st June | 175 | -2 | 56 | 53 | 32 | 36 | 0 | ***** | 0.99 | 7.49 | 2.39 | 10.87 | 849.5 | 4.55 | 4.62 | 5.8 |
| | Astonenergy | T | 1st June | 151 | 5 | 47 | 43 | 49 | 6 | 0 | ***** | 1.03 | 7.27 | 2.30 | 10.60 | 854.1 | 4.33 | 3.95 | 5.5 |
| | Triwarwic | T | 2nd June | 141 | 20 | 53 | 30 | 7 | 32 | 0 | - | 1.12 | 7.42 | 2.18 | 10.72 | 842.5 | 4.63 | 4.39 | 5.8 |
| | Nashota | T | 3rd June | 214 | 53 | 57 | 39 | 28 | 38 | 0 | - | 1.32 | 7.51 | 2.26 | 11.09 | 845.7 | 4.68 | 4.54 | 6.0 |
| | Glenfield | T | 3rd June | 207 | 59 | 63 | 40 | 3 | 41 | 0 | - | 1.36 | 7.68 | 2.28 | 11.31 | 841.1 | 4.74 | 4.55 | 5.7 |
| | Meiduno | T | 3rd June | 195 | 45 | 56 | 46 | 27 | 21 | 0 | **** | 1.27 | 7.50 | 2.33 | 11.10 | 848.8 | 4.41 | 4.31 | 5.2 |
| | Briant | T | 3rd June | 156 | 10 | 58 | 46 | 13 | 29 | 0 | *** | 1.06 | 7.54 | 2.33 | 10.93 | 841.2 | 4.51 | 4.47 | 5.5 |
| | Aspect | T | 3rd June | 136 | 11 | 50 | 30 | 27 | 23 | -6 | ***** | 1.07 | 7.36 | 2.19 | 10.61 | 848.5 | 4.13 | 4.77 | 6.0 |
| | Abergain | T | 4th June | 241 | 34 | 61 | 50 | 47 | 49 | 0 | **** | 1.20 | 7.63 | 2.37 | 11.20 | 852.0 | 4.91 | 4.56 | 5.6 |
| | Gracehill | T | 4th June | 241 | 46 | 60 | 58 | 10 | 67 | 0 | ** | 1.28 | 7.60 | 2.44 | 11.31 | 840.9 | 5.35 | 4.56 | 5.6 |
| | Ballintoy | T | 4th June | 195 | 36 | 60 | 43 | 23 | 32 | 0 | **** | 1.22 | 7.59 | 2.30 | 11.11 | 846.6 | 4.59 | 4.44 | 5.4 |
| | Anurad | T | 5th June | 191 | 54 | 52 | 41 | 31 | 19 | -6 | *** | 1.33 | 7.40 | 2.28 | 11.01 | 846.7 | 4.64 | 3.82 | 5.6 |
| | Xenon | T | 7th June | 143 | 12 | 49 | 35 | 29 | 17 | 0 | ***** | 1.08 | 7.33 | 2.23 | 10.64 | 846.1 | 3.98 | 4.77 | 6.2 |
| | Aberplentiful | T | 8th June | 204 | 59 | 63 | 50 | 11 | 26 | -6 | ** | 1.36 | 7.67 | 2.37 | 11.40 | 842.1 | 4.27 | 4.69 | 5.5 |

Notes: D - Diploid, T = Tetraploid

¹Teagasc Grazing Utilisation Trait - see Appendix 1

Values in italics above denote the mean of the control varieties in Appendix 2

WILD BIRD FOOD IN ACRES

Wild bird cover is a spring sown crop that is left un-harvested over winter. The objective is to sow a seed crop mix that provides a food source and winter cover for farmland birds and other fauna.

- Where necessary the action must be protected from livestock using a fence that is fit for purpose. Where no fence is required, the boundary of the winter bird food must be clearly identified with visible posts/ markers if no natural boundary feature exists.
- Establish the winter bird food crop by 15 May 2023 using the following mix: At least one or more of these cereals: spring oats/triticale/wheat/barley. At least two or more of the following: linseed, oil-seed rape, phacelia, fodder radish, mustard, spring vetch, lucerne, chicory or birds-foot trefoil.
- The winter bird food crop must be established by 15 May each year for the duration of the contract.
- The sowing rate must be in accordance with the recommended rates for the chosen mix to ensure the crop is delivered.
- Once the crop is sown, pesticides are not permitted. Only the spot treatment of noxious and invasive weeds with herbicides is allowed or if required pre-sowing for crop establishment.
- Fertiliser can be applied up to a maximum of half the fertiliser rate for nitrogen and phosphorus on spring oats as described in Statutory Instrument Number 113 –EUROPEAN UNION (GOOD AGRICULTURAL PRACTICE FOR PROTECTION OF WATERS) REGULATIONS 2022, page 46–47.
- Harvesting of the crop is not permitted and must remain in-situ until 15 March of the following year.
- The winter bird food action must remain in the same location for the duration of the contract.

LIST OF PRESCRIBED SPECIES FOR WINTER BIRD FOOD

| SPECIES | MONOCULTURE SEED RATE KG/HA |
|----------------------|-----------------------------|
| Spring oats | 150kgs |
| Spring triticale | 180kgs |
| Spring wheat | 180kgs |
| Spring barley | 160kgs |
| Linseed | 50kgs |
| Spring Oil-seed rape | 6kgs |
| Phacelia | 8kg |
| Fodder Radish | 10kgs |
| Mustard | 15kgs |
| Spring Vetch | 40kgs |
| Lucerne | 25kgs |
| Chicory | 10kgs |
| Bird's foot Trefoil | 12kgs |

Note: These monoculture rates should be adjusted according to the number of species in the chosen mix.

EXAMPLES OF WINTER BIRD FOOD MIXES

| | |
|-------------|-------|
| Spring oats | 50kgs |
| Linseed | 17kgs |
| Mustard | 5kgs |

In a three way mix used 1/3 of the recommended seeding rate from the list.

ACRES GRASS MIX

2 options that require

- Arable grass margins
- Environmental management of fallow land

Both mixes are similar

- 60% Timothy or Cocksfoot
- 40% other grass species

Rate 15/kg/ha, sold in half hectare bags.

COVER CROPS

Also known as cover crops or green manure, catch crops play a role in the regulatory requirements for green cover under the ACRES scheme. The following specifications are relevant to farmers sowing these crops within ACRES.

- Catch crop must be sown annually by 15th September.
- Use light cultivation techniques – ploughing is not permitted.
- The seed mixture must contain at least 2 species from the list, 1 crop can't take up more than 75% of the seed mix.
- The catch crop must remain in-situ from the date of sowing to 1st January annually.
- Grazing of catch crops is permitted after 1st January.
- A main cereal crop cannot be undersown with catch crop species.
- When sowing the catch crop, the under sowing or sowing of a grass crop is not permitted.
- The catch crop can be rotated each year once the field/area is of equal size to the area outlined in the contract in year one.

| CATCH CROPS | |
|---------------------------------|-------------------|
| Crop | Sowing rate Kg/ha |
| Oats | 60-75 |
| Black Oats | 30-40 |
| Rye | 60-75 |
| Vetch | 15 |
| Crimson Clover / Berseem Clover | 10-15 |
| Peas | 40-50 |
| Beans | 70-90 |
| Forage / Fodder Rape | 4-5 |
| Leafy Turnip | 4-6 |
| Tillage Radish | 4-6 |
| Mustard | 8-10 |
| Buckwheat | 30-40 |
| Phacelia | 4-5 |
| Linseed | 15 |
| Red Clover | 8-10 |
| Sunflower | 10-15 |

WE ALSO CATER FOR A NUMBER OF FORAGE CROPS AND ARABLE SILAGE WITH EITHER PEAS AND BARLEY OR PEAS AND OATS

The drive to cut production costs is creating a large interest in growing fodder crops so much so that they are already starting to play a significant role alongside grass in low input, low cost livestock farming. With forward planning fodder crops can also significantly extend the growing season when grass is finished growing. Each

farm and livestock enterprise has individual requirements. However, there are always three fundamental questions to ask before deciding on the most cost-effective type and variety of fodder crop for your livestock production system.



1. When do you want to use the crop?

With versatile, winter hardy varieties available, fodder crops can be utilised by stock from June right through to April. If extra fodder is needed in the summer, early sown kale and grazing turnips can be ready to feed in June and are very useful for plugging a mid or late summer grazing deficit. There are plenty of options to choose from if fresh fodder is required through the winter months. Be ready to feed in June and are very useful for plugging a mid or late summer grazing deficit. There are plenty of options to choose from if fresh fodder is required through the winter months.



2. When does the land for growing fodder crops become vacant?

Crop rotation, soil type and local conditions will dictate when fodder crops can be sown. Most farmers can now sow fodder crops from as early as February through to September. Catch crops of stubble turnips or kale can be sown early and utilised by stock mid to late summer before the land is returned to grass or arable production.



3. How many animals will a fodder crop feed?

Fodder crops are suitable for high yielding dairy cows, beef cattle, ewes and lambs. The number of stock your brassica crop will feed depends on the type of crop sown, the dry matter yield and the stock utilisation rate.

| | DM (kg/ha) | DM (%) | ME (MJ/kg) | Animals/ha for 100 days (70% of diet) | | | |
|-----------------|------------------------|--------|------------|---------------------------------------|------------|-----|-----------------|
| | | | | Cows | Youngstock | Ewe | Finishing lambs |
| Swedes | 9-14,000 | 10-12 | 12-14 | 15 | 14 | 83 | 65 |
| Kale | 11-12,000 | 12-15 | 10-13 | 19 | 18 | 107 | 84 |
| Stubble Turnips | 6,500 | 9-12 | 10-13 | 11 | 101 | 63 | 49 |
| Grazing Turnips | 4,000 (regrowth 2,000) | 10-14 | 10-13 | 9 | 8 | 49 | 38 |
| Hybrid Brassica | 7-9,000 | 12-14 | 10-13 | 11 | 10 | 63 | 49 |
| Forage Rape | 4-5,000 | 11-13 | 10-13 | 7 | 6 | 30 | 30 |

Assumptions: Cow liveweight 500 kg (adjust upwards for dairy cows); youngstock liveweight gains 0.75 kg/day; 55 kg ewes on maintenance feeding; lamb liveweight gains 200 g/day.

| CROP | FODDER BEET | SWEDES | KALE | FODDER RAPE | STUBBLE TURNIPS |
|------------------------------------------------|--------------------------------------------------|-----------------------------|-------------------------------------------|------------------------|-------------------------------------------|
| Sowing Date | Late March Early April | May - Early June | May - June | June - August | June - August |
| Seeding Rate Per Acre | 40,000 - 50,000 Seed | 50,000 Pelleted Seeds | 2.5 kg Broadcast, 2 kg Direct Drill | 3-4 kg | 1.5 kg Drilled 2.5-3.5 kg Broadcast |
| Fertilisation Per Acre | 10 x 50 kg of Beet Compound | 7 x 50 kg of 6.10.18 + B | 4.5 x 50 k 10.10.20 + 2 50 kg CAN | 4.5 x 50 kg 18.6.12 | 4 - 5 x 50 kg 18.16.12 |
| Time of Utilisation | Nov - Feb | Nov - Mar | Sept - Dec | Sept - Dec | Sept - Dec Nov - Dec |
| Fresh Yield Per Acre Leafed White Clover | 33-40 (Roots) 18 (Tops) | 25-30 | 20-30 | 14-16 | 15-25 |
| % DM Yield (Tonnes/Ac) | 16 (Root) 11 (Tops) | 11 | 15 | 12 | 14-15 (Bulb) 9-10 (Leaf) |
| CR Protein as % of DM | 6.5-7 (Roots) 17 (To Silage) (Crop Silage) | 11 | 14 | 19 | 20-24 |
| Nett Energy UFL/ kg DM | 1.12 (Roots) 0.87 (Tops) | 1.21 | 1.03 | 0.85 | 1.10 (Top and Root) |

SWEDES



Very adaptable crop for both grazing and storage. Grown on their own, modern varieties can also offer the option of being lifted for culinary use as well as livestock fodder.

The pH of the soil should preferably be around 6.5. Swedes are quite tolerant of acid soils but below a pH of 5.4 growth is increasingly restricted. At pH 7.0 and above boron becomes less available. Allow a minimum break of 4-5 years between all brassicas.

To minimise the build up of pests and particularly diseases a rotation of 7-8 years between swede crops is desirable. Average yields of packed out swedes would be about 35 tonnes per ha. The weight of an individual swede is around a kilo.

KALE



A very adaptable crop providing useful forage. Can be ensiled as kaleage or zero and strip grazed. A fine, firm seedbed (like grass) and moisture is essential for rapid emergence as kale has small seeds. All brassicas will yield poorly where compaction has occurred. Placing some fertiliser at sowing may aid establishment. Ploughing and powered cultivation is the surest method of establishment but in well structured soils, direct drilling will also be successful.

With direct drilling, it is essential to achieve a good weed kill with glyphosate pre-cultivation. Kale may be precision drilled at 3 kg/ha or direct drilled at 4 kg/ha or broadcast usually with the fertiliser at 5-6 kg/ha.

FODDER RAPE



A popular forage crop with many livestock farmers due to its ease of production, the flexibility of its sowing date and its palatability at feeding time. It is capable of producing a large bulk of fodder in a short period. Fodder rape is an ideal pioneer crop in the reclamation of hill and marginal land.

Rape is extremely useful as a feed fattening lambs and lactating ewes and very good performance can be achieved with good grazing conditions. It is also widely used to supplement cattle and cows but care is needed as there is a much greater risk of digestive disorders than with sheep. These problems can be prevented by taking the following precautions:

- **Introduce the rape gradually.**
- **Restrict intakes.**
- **Always feed hay or silage as a roughage source.**

STUBBLE TURNIPS



Economic and fast to grow, an excellent catch crop which can produce nutritious, highly palatable feed in just 12-14 weeks after sowing. The crop can be sown in spring for feeding in late summer or sown in July or August for feeding in October to February. They are not very winter hardy and losses will occur in frosty weather. Seeding rate depends on sowing conditions and method of sowing. Fine and firm seedbed required similar to grass reseeded. Broadcast at 8 kg/ha (3 kg/acre). Direct drill at 5 kg/ha (2 kg/acre).

Making quality silage is vital to beef and dairy farming in Ireland. In making silage there are two primary quality parameters that need to be considered, preservation and feeding value. Preservation must always be good in silage making. Covering your silage clamp with a poor quality cover can lead to a serious reduction in the quality of your silage. The cost of silage losses rises dramatically as the size of the pit increases. Poorly preserved silage could lose up to 5% units of DMD. Each drop of DMD units reduces milk yield by almost 1.5 litres of milk per day, and raises the cost of finishing cattle by over €70.

Recommended products

Silage Wrap

- Leading brands including Mastercrop Agristretch and Silawrap
- Colours: Black; Green; White



Standard Silage Covers

- Black; 400 Gauge (100 Microns)
- Proven quality for years.
- Manufactured using virgin and recycled plastic polymers

Bodyguard/Hermetix Heavy Duty Silage Cover

- Extremely strong film manufactured from 100% virgin raw materials
- Colour: Green-Black (Top-Bottom)
- High oxygen barrier reduces silage waste
- Ensures faster fermentation and better preservation
- High impact and tear resistant.
- Available in sizes: 60 x 80FT, 60 x 100FT and 60 x 120FT

Underlayer Silage Film

- Strong underlayer film manufactured from 100% virgin raw materials
- Colour: Transparent
- High oxygen barrier; cling seal layer prevents air-pockets
- Can be used with standard black covers or Bodyguard /Hermetix covers
- Available in sizes: 12M x 50M, 14M x 50M and 16M x 50M

Agrisafe Hybrid Classic 2-in-1

- Innovative extra strong two-layer sheet including underlayer film
- Manufactured from virgin and recycled materials
- Colour: Black-Transparent (Top-Bottom)

Using premium silage covers will help to minimise silage waste, ensuring faster fermentation and better preservation which in turn will lead to reduction in dry matter loss and forage nutrient loss.

Fodder Budget Calculation

A fodder budget should also be completed annually after harvesting, to ensure that there is enough fodder to feed stock for the housed period. Approximate guidelines to follow are:

- Allow 1.6 tonnes per cow/month.
- Allow 0.7 tonnes per head/month for stock <1 year.
- Allow 1.3 tones per head/month for stock 1-2 years

To calculate the amount of silage in the pit, Teagasc has broken down the calculations required as follows:

1. Measure the length, breath and height of the clamp.
2. Multiply the length x breath x height = total available volume for silage (m3).
3. Estimate the Dry Matter (DM) content of the silage.
4. Multiply the total volume by either 0.68, 0.77 or 0.81, depending on the correction required for DM, to find the total (tonne) amount of silage in the pit:
 - DM 25% = 0.68
 - DM 20% = 0.77
 - DM 18% = 0.81
5. Calculate how long this silage will last.

| BRANCH | ADDRESS | TELEPHONE | EIRCODE |
|--------------------------------|---------------|--------------------------|----------|
| Ashford* | Co. Wicklow | 0404 - 40105 | A67R791 |
| Athboy | Co. Meath | 046 - 9432552 | C15HE33 |
| Ballacolla | Co. Laois | 057 - 8734013 | R32VK83 |
| Ballinamult | Co. Waterford | 058 - 47102 | E91CY50 |
| Ballycanew | Co. Wexford | 053 - 9427103 | Y25D721 |
| Ballyhale* | Co. Kilkenny | 056 - 7768603 | R95D1HC |
| Ballyragget | Co. Kilkenny | 056 - 8833107 | R95FC44 |
| Ballytore | Co. Kildare | 059 - 8623105 | R14CH05 |
| Ballywilliam | Co. Wexford | 051 - 424514 | Y21V628 |
| Bennettsbridge | Co. Kilkenny | 056 - 7727104 or 7727244 | R95E02D |
| Bunclody* | Co. Wexford | 053 - 9377122 | Y21YN15 |
| Campile* | Co. Wexford | 051 - 388102 | Y34H521 |
| Cappoquin | Co. Waterford | 058 - 54308 | P51Y033 |
| Carrickbeg | Co. Waterford | 051 - 640002 | E32XT67 |
| Castlecomer* | Co. Kilkenny | 056 - 4400834 | R95KD35 |
| Castlelyons* | Co. Cork | 025 - 36337 | R61K156 |
| Clonmel | Co. Tipperary | 052 - 6129620 | E91W3F8 |
| Clonroche* | Co. Wexford | 053 - 9244136 | Y21WF72 |
| Crettyard | Co. Carlow | 056 - 4442112 | R93D592 |
| Derrygrath | Co. Tipperary | 052 - 6138002 | E91W8X6 |
| Donaghmore | Co. Laois | 0505 - 46315 | R32XY61 |
| Dungarvan* | Co. Waterford | 058 - 42078 | X35KA99 |
| Durrow | Co. Waterford | 051 - 293178 | X42N278 |
| Fennor | Co. Tipperary | 056 - 8834104 | E41AW80 |
| Fethard* | Co. Tipperary | 052 - 6131108 | E91E5C1 |
| Freshford | Co. Kilkenny | 056 - 8832100 | R95D659 |
| Glenmore | Co. Kilkenny | 051 - 880102 | Y34Y079 |
| Glenville | Co. Cork | 021 - 4880106 | T56KT62 |
| Goresbridge | Co. Kilkenny | 059 - 9775155 | R95C563 |
| Graigucullen | Co. Carlow | 059 - 9131639 | R93PC42 |
| Graigueanamanagh | Co. Kilkenny | 059 - 9724200 | R95 PX51 |
| Inch | Co. Wexford | 0402 - 21734 | Y25W894 |
| Kells | Co. Kilkenny | 056 - 7728233 | R95KW25 |
| Kilberry | Co. Meath | 046 - 9024204 | C15HH7D |
| Killenaule | Co. Tipperary | 052 - 9156205 | E41HW27 |
| Kilmanagh | Co. Kilkenny | 056 - 7769102 | R95V21C |
| Kilmeaden* | Co. Waterford | 051 - 384106 | X91P573 |
| Kilmuckridge | Co. Wexford | 053 - 9130133 | Y25H934 |
| Monasterevin* | Co. Kildare | 045 - 525337 | W34PF50 |
| Mountmellick* | Co. Laois | 057 - 8624268 | R32XF20 |
| Mullingar | Co. Westmeath | 044 - 9342299 | N91CY68 |
| New Ross* | Co. Wexford | 051 - 421274 | Y34PF61 |
| Piltown | Co. Kilkenny | 051 - 643260 | E32WD21 |
| Raheen | Co. Laois | 057 - 8731104 | R32WK80 |
| Rathcoffey | Co. Kildare | 045-902719 | W91D681 |
| Rathdrum* | Co. Wicklow | 0404 - 46105 | A67EV29 |
| Spink | Co. Laois | 057 - 8731169 | R32D884 |
| Taghmon | Co. Wexford | 053 - 9134154 | Y35VK85 |
| Tallow | Co. Waterford | 058 - 56322 | P51EW81 |
| Tullamore* | Co. Offaly | 057 - 9341310 | R35K820 |
| Windgap | Co. Kilkenny | 051 - 648203 | R95N209 |
| Tirlán Customer Service Centre | Kilkenny | 0818 321 321 | R95DXR1 |

*CountryLife Store Locations



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Abbey Quarter
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www.tirlanfarmlife.com

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