



MUNSTER BOVINE

BREEDING & FERTILITY MANAGEMENT

2020



GOALS & PLANS FOR THE BREEDING SEASON

GOALS

1	2	3	4
Maintain 82% of the current 2020 milking herd for the 2021 season and have a high 6 week calving rate.	Have all the maiden heifers calving in February 2021.	Breed an adequate number of 2021 born replacements from the highest genetic merit cows and the highest panel of high genetic merit sires and have them born in Feb.	Maximise calf value in Spring 2021 by selecting the highest Beef Value beef sires within your calving range for the maidens, 1st calvers, cows and the mature cows.

PLANNING THE SEASON - EXAMPLE 100 COWS AND 20 MAIDENS

Decide calving date 2021 - 1st Feb	Mon 27th April Mating Start Date (MSD)
How many replacements do I require?	18-20% for maintenance - 20 heifers required
How many dairy straws do I need to use? Need to allow for bull calves and issues from birth to entry to Parlour.	20 X 4.5 = 90 Dairy Straws required
How many Dairy Straws will I use on my Maidens?	20 - 1 straw on each heifer
How many Dairy straws do I need to use on my cows? I had 90 cows calved prior to 17th March – Calved 42 days	70 of the best cows out of the 100 cows to breed the replacements from to calve in February 2021
Select the bottom 20 poor performers of the 90 cows calved prior to 17th March & the late calvers for Beef Straws	30 out of the 100 cows selected to breed to Beef and the repeats from the 70 cows bred to dairy after the 1st 4 weeks.

PRE-BREEDING



- Complete vaccinations for cows and heifers.
- Monitor Bulk Milk to ensure winter dosing programme was effective & Dung sample heifers.
- BCS cows and ensure they are fully fed and put cows <2.75 BCS on once a day milking (OAD).
- All cows calving after 1st April that you wish to retain for 2021 should be put on once a day milking (OAD).
- Weigh Heifers, put them to grass a minimum of 4 weeks pre breeding – supplementary feeding to those under target.
- Have cows scanned or metri checked and the usual suspects examined and treated by your vet 3 weeks before MSD mating start date.
- Apply heat detection aids to cows 3 weeks before MSD mating start date.
- On MSD - Cows not detected in heat calved 35 days and additional usual suspects should be examined by your Vet.

MONITORING AND KEY ACTION DATES DURING THE BREEDING SEASON

- EXAMPLE HERD 100 COWS 20 MAIDENS

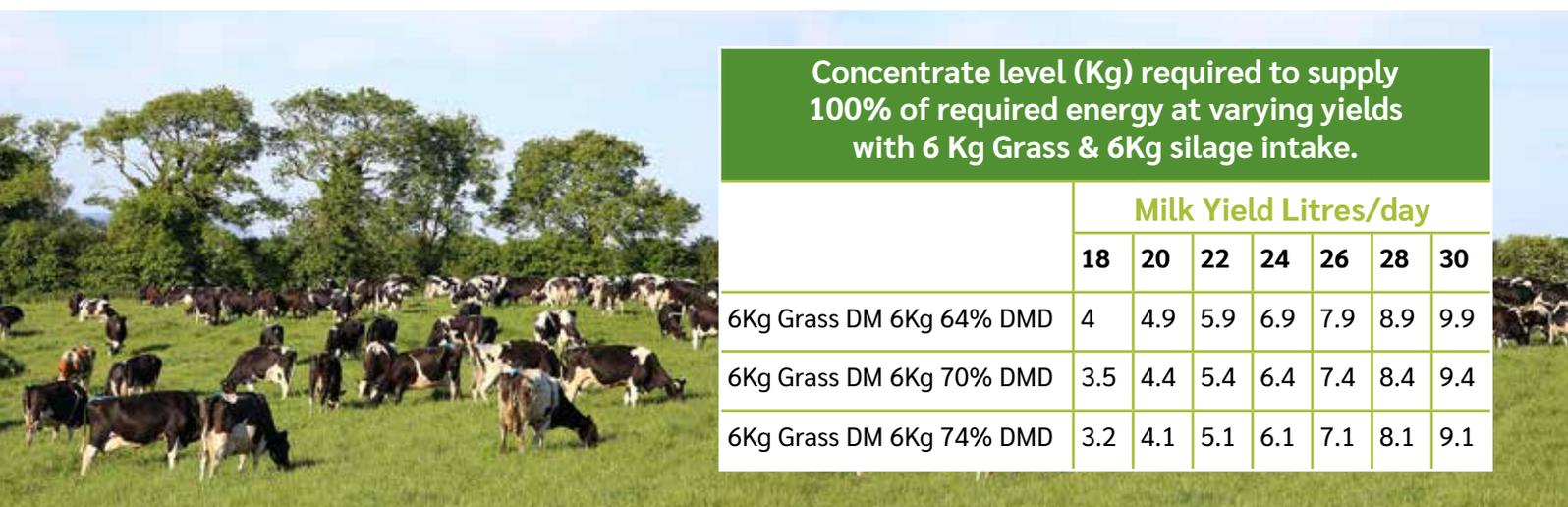
DATES	AIM	Number on Heat/ Day	Example Outcome	Number In calf
1st 3 weeks of breeding 27th Apr – 18th May Calving 1st Feb to 25th Feb 2021	90 out of 100 cows bred 20 out of 20 Heifers bred	4-5 Cows a day on heat 1 Maiden Heifer a day on heat	80 out of 100 Cows bred All 20 Heifers Bred following synchronization	44 Cows In calf & 17 Heifers
Actions 18th May - All cows calved 35 days not bred drafted, examined by your Vet and synchronized for fixed timed AI. OAD for late calvers and cows <2.75 BCS not bred. The next 3 weeks key to maximise 6 week calving rate.				
2nd 3 weeks of breeding 18th May – 8th June Calving 25th Feb to 18th March 2021	Heat activity is halved- Increase Intensity of observation. Keep applying Aids.	2/Day Cows Watch repeats in cows and heifers especially the synchronised ones.	15 Synchronised Cows Bred (actions 18th May) 36 Repeats in Cows Bred 3 Heifer repeats Bred	72 cows In calf & 20 Heifers
Actions 8th June - All cows calved 35 days not bred drafted, examined by your Vet and synchronized for fixed timed AI. Early pregnancies scanned. OAD for late calvers. The next 3 weeks key to reduce empty rate.				
3rd 3 weeks of breeding 8th June to 29th June Calving 18th March to 8th April 2021	Heat activity is reduced further. A Vasectomized Bull is Key.	1/Day Cows.	5 Synchronised Cows Bred (actions 8th June) 23 Repeats in Cows Bred	87 Cows incalf and 20 heifers
Actions 29th June - All cows calved 35 days not bred drafted, examined by your Vet and synchronized for fixed timed AI. Early pregnancies scanned. Bulls fertility tested. The next 3 weeks key to reduce empty rate.				
4th 3 weeks of breeding 29th June to 20th July	Bulls released and monitored. Ensure bulls can serve comfortably before being released with cows.		13 Repeats in Cows Bred	94 Cows incalf and 20 heifers incalf

COW NUTRITION, PREGNANCY GOALS & GIVING EVERY COW THE OPPORTUNITY OF 3 - 4 SERVES

PREGNANCY GOALS FOR THE BREEDING SEASON

<h3 style="margin: 0;">1</h3> <p style="margin: 0; color: white;">Maintain 82% of the current 2020 milking herd for the 2021 season and have a high 6-week calving rate.</p>	<h3 style="margin: 0;">2</h3> <p style="margin: 0; color: white;">Reduce empty rate to 9% to allow for voluntary culling on Lameness, SCC & Production.</p>	<h3 style="margin: 0;">3 Nutritional Goal</h3> <ul style="list-style-type: none"> Have cows calving at BCS 3.0 to 3.25 Minimize BCS loss from calving to breeding to a max of 0.5 BCS Have cows on a BCS of 2.75 or greater at Breeding Have cows fully fed during the breeding season
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BCS of 2.75 or greater and <0.5 BCS loss from calving to mating. This will maximises Submission and Conception Rates.
The cow will cycle early in the breeding season, allowing time for 3-4 serves and maximise her pregnancy chances.



Concentrate level (Kg) required to supply 100% of required energy at varying yields with 6 Kg Grass & 6Kg silage intake.							
	Milk Yield Litres/day						
	18	20	22	24	26	28	30
6Kg Grass DM 6Kg 64% DMD	4	4.9	5.9	6.9	7.9	8.9	9.9
6Kg Grass DM 6Kg 70% DMD	3.5	4.4	5.4	6.4	7.4	8.4	9.4
6Kg Grass DM 6Kg 74% DMD	3.2	4.1	5.1	6.1	7.1	8.1	9.1

The mistake most commonly made is an overestimation of the grass intake. If you overestimate grass intake, cows will not be fully fed and will lose BCS. The most vulnerable cows are the 1st calvers and the high yielders.

Are you losing too many 1st calvers and mature cows each year?

At this level of feeding there will be no decrease or increase in BCS.

The following table will ensure that cows are fully fed and that intakes match output.

Concentrate level (Kg) required to supply 100% of required energy at varying yields and at grass full time							
Grass Intake Kg/Day	Milk Yield Litres/day						
	18	20	22	24	26	28	30
12	1.9	2.8	3.8	5.0	6.0	7.0	8.0
13	0.8	1.7	2.7	3.6	4.9	5.9	6.9
14		0.6	1.5	2.5	3.4	4.8	5.8
15			0.4	1.4	2.3	3.7	4.7
16				0.3	1.2	2.2	3.1
17					0.1	1.1	2.0
18							0.9

ONCE A DAY MILKING

This is key for cows less than 2.75 BCS and late calvers. It will increase BCS and reduce time to first heat. Maintaining the input and decreasing the output. Cows on once a day milking need to go through the parlour and be fed twice a day. Mark them with leg bands or tail tape. Only put cows on once a day that you are keeping for 2021 and their SCC is less than 200.

MONITOR: Watch carefully the volume of milk and % protein delivered as both are excellent indicators of energy. Ensure neither drops 3 weeks prebreeding and during the breeding season.

In inclement weather intakes will be reduced and the cows need to be supplemented.

LATE CALVERS AND COWS WITH ISSUES

GOALS FOR LATE CALVERS AND COWS WITH ISSUES

1

Retain cows calving after 17th March and those that had issues at calving.

2

Opportunity of 2-3 serves in 2020 needed and a gain of 3- 4 weeks in calving date is possible.

3

Avoid them being replaced with a 1st calver. Loss of 100Kgs+ of Milk Solids & Cost of Replacement.

IDENTIFY THIS GROUP OF COWS:

1. Cows that calved after 17th March
2. Cows in BCS less than 2.75 at MSD or 3 weeks prior
3. Cows with difficult calvings, retained afterbirths
4. Cows with Milk Fever, LDA'S, E. Coli mastitis
5. Cows with Lameness



5 POINT PLAN

1. Nutrition & BCS - OAD and/or Extra feeding

Concentrate level (Kg) required to supply 100% of required energy at varying yields and at grass full time

Grass Intake Kg/Day	Milk Yield Litres/day						
	18	20	22	24	26	28	30
12	1.9	2.8	3.8	5.0	6.0	7.0	8.0
13	0.8	1.7	2.7	3.6	4.9	5.9	6.9
14		0.6	1.5	2.5	3.4	4.8	5.8
15			0.4	1.4	2.3	3.7	4.7
16				0.3	1.2	2.2	3.1
17					0.1	1.1	2.0
18							0.9

Cows do not reach their peak intakes of grass until they are calved 6 weeks. Therefore, late calving cows will be consuming between 10 and 12Kgs of grass DM in early lactation as opposed to 16-18Kgs for the February calving cows.

Late calvers need an extra 3-5Kgs of concentrate more per day than the early calving cows for the 1st 6 weeks of lactation. Putting these cows on once a day milking and feeding them twice a day will allow them to commence cycling earlier- Reducing the output and maximizing the input.

2. Vet exam, Scan, Metricheck & Metricure if required - Need to Gain Time

Vet exam these cows and repeat 3 weeks pre breeding and again at MSD mating start date. Once they have reached 28 days calved get these cows examined by your Vet. Metricheck them or scan them to ensure no endometritis present. If present insert a Metricure (zero milk withdrawal). A cow calved early February has had over 80 days and possibly 2-3 cycles to repair and cleanse her uterus - in late calvers we are continually working against the clock.

Cows that calved 10th April should receive a metricheck on 8th May and be treated with Metricure if required.

3. Synchronisation Programme for Fixed Timed AI

Synchronisation at 35 days calved and check to ensure any uterine infection is cleared prior to synchronisation. The programme for cows with fixed timed AI is superb as it ensures that these cows are cycling and bred in 10 days.

This will result in some calving the 1st week of March 2021, a month earlier than 2020.

DAIRY COWS - SYNCHRONISATION FOR COWS FIXED TIMED AI AT A PREDETERMINED TIME. NO HEAT DETECTION

Monday 27th April	AM	Day 0	Insert PRID or CIDR and inject GnRH
Monday 4th May	AM	Day 7	Inject PG & Remove PRID/CIDR
Wed 6th May	PM	Day 9	Inject GnRH (56 hours post PG)
Thur 7th May	AM to noon	Day 10	AI all cows (16 - 20 hours post GnRH)

4. Fixed Timed AI & Watch for Repeats

The advantage of the 10 day synchronization programme is that cows are bred in 10 days and the repeats are due together which makes heat detection easier. Inseminate these cows with easy calving short gestation bulls. These bulls will gain you an extra 7-10 days next year.

5. Early Scan for Pregnancy & Resynchronise if empty

Scan these cows once 30 days have passed since insemination and the cow has not repeated. These late calvers are repeating at a time when activity is decreased, and it can be more difficult to detect them. If the cows scans empty resynchronise her and she will be bred again in 10 days.

Cows that calved 10th April should be synchronised on 15th May, AI'd on 25th May and scanned the 25th June to ensure she is in calf or identify if she is empty. This will give her an opportunity of 2 more cycles before breeding ends in July.



This 5 point plan costs approximately €50/cow - This is equivalent to 10 days milk. It will increase the chances of keeping these cows in the herd, reduce the replacement rate and will result in a more mature herd milking in 2021, therefore maximising production.

TAIL PAINT



Tail painting is an excellent cost effective, convenient way of heat detecting cows early in the season.

	100 COW HERD		200 COW HERD	
Weeks Breeding	Cows in heat per day	Mounts per Cow per Day	Cows in heat per day	Mounts per Cow per Day
1 st 3 weeks	5	50	10	50+
2 nd 3 weeks	2-3	27	5	50
3 rd 3 weeks	1-2	11	2-3	27
4 th 3 weeks	1	10	1-2	11

Tail paint works well in cows when there are 3 or more cows on heat per day to rub it off. In a 100 cow herd it is effective for 6 weeks if the herd is already calving compactly, otherwise use it for the 1st 3 weeks and then switch to scratch cards, in a 200-cow herd it can be effective for 9 weeks if calving compactly. It does not work as well in heifers as they are not heavy enough to rub it off each other's rumps.

Clip the hair off the rump prior to the application of tail paint. This allows the paint to be more easily removed at mounting. And it reduces the layers of paint building up as the season progresses making it difficult to interpret. Apply paint on a dry day and to dry skin.

TAIL PAINT GUIDELINES:

1

Clip rumps prior to applying paint. Paint will come off easier and layering will be minimized



2

These cows have not coated yet and the hair will hold the paint leading to layering later on



3

These cows have been clipped and the paint will be removed easier. Leading to less layering of paint later on. 9 x 1 inch strip of paint is ideal



4

Paint well cleaned off after being on heat



5

Fils tail paint product (€16 per litre).



6

Paint in 2.5 litre cans can be applied by brush, glove or radiator roller in the pit (€18 for 2.5 litres)



TOP TIPS

Top up twice a week and more often in wet weather.

On the day of insemination put a band of tail paint on the cows back that will not be rubbed off by mounting. This will indicate the cows that have been served and will avoid drafting them the following morning for insemination. One day repeats may reduce conception rates.

As the season moves on if there is a lot of layers of paint building up - change the colour completely. If you were using blue all along - ignore the blue paint now as it will not come off cleanly. Paint with a different colour for example yellow and if the yellow is rubbed off the cow is in heat even though the blue is still present.

SCRATCH CARDS



Scratch cards are an excellent method of heat detection in both cows and heifers when cattle are outdoors and rumps clean. They are also extremely useful when the number of animals coming into heat is reduced - as the season progresses. The scratch cards shown here in the picture 'Estrus Detect' are superior to the previous self-adhesive cards, as they stay much better and are not scratched as easily and are easier to read.

1. Apply scratch cards to dry hair on a dry day otherwise the glue will not adhere. Watch the forecast. Cost of a roll of 100 cards is €55 and a can of glue €20. 75c per card applied. Wear gloves to avoid glue on hands.
2. Do not clip, glue needs hair for adherence, just comb or brush, to remove loose hair and dirt. Loose hair is shed easily in the spring and will take the scratch card with it when shed.
3. Layout the number of cards corresponding to the number of heifers in the crush in a clean dry non-windy and dust free area and spray with glue. Dust sticking to the card reduces the adhesiveness of the glue. Ensure to cover the entire card to the edges of the cards.
4. Spray cleaned brushed rump area in an east to west direction where the card is to be applied, across the back bone.
5. Patience required now until the first card gets tacky. Wait When tacky it will stick to your glove and not fall to the ground.
6. Apply the card to the sprayed area- East to West.
7. Secure in place by applying gentle pressure especially at the edges.
- 7a. Card properly applied.
8. Heifer in heat, grey rubbed off and red exposed. Can also get green and yellow cards.
9. Lot of mounting, grey and red rubbed off, white exposed and edges curled from mounting.
10. In narrow heifers the complete card may not be rubbed red, just the entire centre area. As the mounting heifers body did not touch the edges of the card.
11. Get heifers into the yard each day and check scratch cards.
12. As heifers are being A I'd, cut the hair off the tails. Long tails are those yet to be inseminated.

TOP TIPS

Watch the forecast for a perfectly dry day to apply the cards.

Patience - Wait till the 1st card is tacky before application - It will stick to your glove.

Reapply the cards the day after being inseminated. Can reapply the card over the existing card if it is well adhered.

On the day of insemination put a band of tail paint or a crayon mark on the cows or heifers back that will not be rubbed off by mounting. This will indicate the animals that have been served and will avoid drafting them the following morning for insemination. One day repeats may reduce conception rates.

CRAYONS

Paint sticks or Crayons work on the same principle as tail paint and are very convenient to use.

However, they rub off easier than tail paint following mounting, this makes them extremely useful for maiden heifers. They work well when cattle are indoors also. They are also very convenient and clean to apply.



1. Paint sticks or Crayons are available in the four colours pictured. They come in boxes of 12, costing €35 for the box.
2. Just comb or brush the rump area, to remove loose hair and dirt. It is not necessary to clip the hair; this is clearly an advantage if you wish to use them in conjunction with scratch cards.
3. A skin can form over the tip of the paint sticks when they dry. Rub the paint stick on a concrete surface to remove it.
4. Apply the crayons as you would apply tail paint, 9" narrow strip. In heifers come further down the tail head with the paint stick than you would with cows, as heifers do not go as forward on the rump on the standing animal with their brisket as cows do.
5. If you are finding heifers difficult to heat detect apply both scratch cards and crayons to the heifers. Put on the scratch card first and then apply the paint stick.

TIME OF INSEMINATION TO MAXIMISE PERFORMANCE

The best time to inseminate is when animals are in standing heat and up to 12 hours after the end of standing heat.

- Avoid inseminating cows that are more than 12 hours after the end of standing heat.
- Once a day insemination works well and is a major labour saver on farms.
- For example, if the technician is coming into your yard each day at 12 noon, inseminate all the cows you have seen up up to 12 noon that day.
- Speak to your technician and discuss your routine.
- Plan your synchronisation programme in advance with your technician. Ensure you adhere to the programme



- ✓ INSEMINATION IS A JOB REQUIRING PRECISION TO MAXIMISE CONCEPTION RATE.
- ✓ ENSURE ADEQUATE FACILITIES ARE AVAILABLE AND HELP THE TECHNICIAN ESPECIALLY WHERE MORE THAN THREE COWS ARE TO BE INSEMINATED.

VASECTOMISED BULL



Vasectomised bulls fitted with chin balls are an excellent method of heat detection for both heifers and cows. The chin ball is as important as the bull as heats will be missed due to the bull mating the cow and not remaining with her. This happens especially in mature bulls as they mate and walk away, they do less courting than young bulls. Ensure the bull is vasectomised - your vet can check his ejaculates to ensure they are free of semen.

1. A well grown vasectomized bull is invaluable for the breeding season. This reduces the likelihood of injury and he will work for you 24/7.
2. The chin ball shown is the preferred one costing €150. Pad the neck and nose strap with 4" Elastoplast or vet wrap, or a section of a worn yellow volume washer hose works well. This prevents the strap cutting the bull. Ring the bull for convenience when refilling the chin ball.
3. Ensure the chinball is snugly fitted to the bull. It is leather so will need adjusting. Initially, fit the chinball for 1 week without paint to familiarise the bull with it.
4. Only use chinball paint in the chinball, it is a heavy oil base and needs to be well shaken before topping up. Red or blue paint is best in wet weather and yellow or green is best in dry weather.
5. Putting the drum of chinball paint into a bucket of warm water makes it easier to mix. Avoid overfilling the chinball and ensure to secure the plug correctly. One fill should suffice for 10-15 heats. Cost is €60 for 5 litres.
6. The bull marks the cow on the back when he is serving them. Position yourself to see the marks on the back of the cows.
7. A young bull will mark cows a lot on the side when he is courting her, older bulls much less. It is the marks on the top of the back that are key.

TOP TIPS

Reduce injuries by training a young bull with maiden heifers first. Secondly avoid overworking a bull, he is not required until heats are 2 or less per day.

Remove the vasectomised bull when a synchronised group are due in heat - reduces the risk of him getting injured and ensures we have him when required.

Young bulls may be courting cows 24 hours before they are in standing heat - It is the marks on top of the back that are key not the ones on the side. The marks on the side alerts you to the fact that a cow may be coming on heat 'courting marks' - Take care with courting marks on the side and no marks on top of the back as you may be inseminating cows 24 hours prior to standing heat.

Keep the chin ball topped up.



HEALTH & SAFETY

Beware of the bull

Exercise caution when dealing with all bulls including those vasectomised.

STOCK BULL MANAGEMENT

1. Bull Power

Adequate bull power is required for compact calving. One young bull to 10 empty females and one mature bull to 20-30 empty females. Every 3 weeks of AI reduces the bull power required by half.

Maximise bull power where two or more sires are available by rotating bulls 24 hours on and 24 hours off where they are resting and feeding.

2. Calving Difficulty

Easy calving is crucial for maiden heifers and dairy cows calving later in the season with a high BCS. When selecting AI sires for maiden heifers the calving difficulty needs to be categorized as low risk and ideally be <5.0% with a high reliability >90% for dairy heifers.

Stock bulls have a lower reliability figure and therefore carry more risk.

3. Purchase in Advance

Purchase bulls up to two months in advance of when they are required to allow for acclimatization, disease testing and vaccination. Vaccinate and dose bulls with whatever the herd is being vaccinated and dosed for.

4. Nutritional & Relocation Stress

Young bulls need extra energy as they are still growing. They expend more energy than older bulls as they do more courting. Bulls that rapidly lose weight greater than 50Kg over a short period go subfertile. Young bulls need to be fed in their first season. If a young bull loses more than 50Kgs in weight or has reduced libido get him fertility tested to ensure he has not gone infertile since his last fertility test.

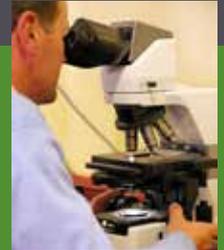
5. Footbathe Bull on Arrival

Footbathe all bulls on arrival to avoid the introduction of Mortellaro. Pair him with another animal of similar or smaller size for company initially. The bull will be more relaxed and easier to handle.

6. Fertility Tested and Mating

Get your bull fertility tested by your vet.

Train him in a small paddock or a well bedded pen by introducing a small female fully on standing heat. Repeat this exercise until he can mate confidently. Ensure a young bull can mate prior to leaving him run with females otherwise you may lose 3 weeks.



7. Lamé and Injured Bulls

Lamé and injured bulls need to be rested and treated, some may not recover for the season. If the bull has a high temperature for a period of time or goes lamé retest his fertility before he resumes mating as depending on the insult it can take him a full 6-12 weeks to recover.

6. Monitor

Bulls need to be monitored throughout the season, either with a chinball on him or scratch cards and tail paint on the females.

Monitor repeats from synchronisation and it may be prudent to AI for the 2-4 days that they are occurring. Watch for low conception rates whereby an increased number of repeats are presented to the bull.

Avoid the 'Lull' in calving after insemination finishes.

Inseminate for the 1st 10 to 14 days of the bull being released and each day where there are 2 or more cows on heat per bull.

Bulls need time to settle into a routine.



Number of Bulls Required to achieve a high Pregnancy Rate Depending on Herd Size and Length of AI Period

	120 cows	250 cows
3 weeks AI 90% submission rate. Number of empty cows	61 empty cows	126 empty cows
Number of bulls required with 3 weeks AI	3 Mature bulls	6 Mature Bulls
6 weeks AI 90% submission rate. Number of empty cows	31 empty cows	64 empty cows
Number of bulls required with 6 weeks AI	2 Mature or 1 Young & 1 Mature Bull	3 Mature Bulls or 2 Mature & 1 Young bull

MAIDEN HEIFERS

GOALS FOR MAIDEN HEIFERS

1

Calve all the maiden heifers in February 2021, this gives them the best opportunity to achieve 5.5 lactations.

2

Easy calving critical for future production. Inseminate with an easy calving sire of high reliability.

3

Maximize the number of replacements from the maiden heifers as they are the highest genetic merit animals and it will allow you to maximize the overall calf value of the herd by using beef sires on the mature cows.

PRE-BREEDING

1. Ideally have the maiden heifers at grass 3-4 weeks pre breeding. This will ensure that they are on a stable diet at breeding and are gaining weight. Heifers can gain 1Kg/day at grass.
2. At breeding heifers need to be at 60% of their mature body weight - 600 Kg cow mature weight heifers need to be 350 - 360 Kg without being fat. Heifers that are less than 320Kgs need supplementary feeding.
3. Ensure all vaccinations are received 3-4 weeks pre breeding.
4. In the last week pre breeding familiarize the heifers with the yard and crush by bringing them in daily and for encouragement feed them 1Kg per day of feed.
5. Watch the weather forecast for applying scratch cards as the heifers need to be bone dry.
6. Introduce the vasectomised bull to them and fit him with a chin ball, if he is a first season bull fit him with a chin ball without any paint in it for a week. It will be lighter on his head and he will be less likely to damage it.

BREEDING

1. Ensure heifers are on a rising plane of nutrition and are gaining weight. Avoid any reduction in intakes at this time, avoid keeping them in a bare paddock as it is near the crush or housing them on silage. This will reduce heat activity and conception rates.
2. HEIFERS 50KG OR LESS UNDER TARGET WEIGHT:
Breed these heifers in the 1st 3 weeks of the breeding season avoid delaying them by 3 weeks, as delaying by 3 weeks will result in March & April calvers and an early exit from the herd.
When grass quality begins to decrease in July start feeding these heifers to ensure that at housing, they are at target weight. Avoid delaying the supplementation of these heifers until November.

HEAT DETECTION

Decide which method or combination of heat detection you are going to use. Ideally for heifers use two methods as they can be difficult to detect accurately. Vasectomised bulls, scratch cards or paint sticks are superior to tail paint with heifers, as heifers are not heavy enough to rub off the paint unlike cows.

- ✓ Vasectomised Bull & Scratch Cards or Paint Sticks
- ✓ Scratch Cards & Paint Sticks



FAMILIARIZE THE HEIFERS WITH THE CRUSH AND YARD

Familiarize the heifers with the yard and crush by bringing them in daily and for encouragement feed them 1Kg per day of feed. This will ensure when you need to bring them in it will be easy and without delays.

In option 1 on synchronisation the heifers will be in the yard daily for 12 days.

In option 2 or 3 they will be in the yard for 3 or 4 days.

SCANNING

This is an extremely worthwhile exercise in heifers. Scan the heifers 30 days after the majority have been served and place scratch cards on the empty heifers and watch them carefully for repeats.

MONITOR STOCK BULL WHEN RELEASED

In maiden heifers it is crucial to monitor the stock bull throughout the season either with a chinball or scratch cards on the heifers. Repeats are not as evident in maidens; they are usually checked mid-day and activity is greatest early in the morning after daybreak or very late in the evening. Following synchronisation, the stock bull can be left in the following day. Remove the stock bull for the 2-4 days the repeats are due and apply the heat detection aids. However, AI'ing the repeats ensures that the bulls are not overworked, fertility is maximised, and it avoids bulls getting injured ensuring we will have them when we need them. AI each day when more than 1 repeat is presented to a young bull or 2 to a mature bull. Periods of low conception rate can occur when an increased number of repeats are presented to the bull.

SYNCHRONISATION FOR MAIDEN HEIFERS

Select the most appropriate synchronisation option based on time available for heat detection, location of heifers and ability to accurately detect heats in heifers.

OPTION 1 COST EFFECTIVE REGIME. MAIDEN HEIFERS - AI AT OBSERVED HEAT. 12 DAY HEAT DETECTION		
Monday 27 th April	Day 0 - Day 6	AI on observed heat - should have 1/3 detected at end of week.
Mon 4 th or Tues 5 th or Wed 6 th or Thur 7 th May	Day 6 or Day 7 or Day 8 or Day 9	PG to heifers not detected in heat. Only inject if 1/3 bred-otherwise investigate
Wed 6 th to Mon 11 th May	Day 7 - Day 12	AI on detected heat. Majority on 48-72 hours post PG injection

This is a cost-effective synchronization regime and achieves high conception rates. There is a requirement for 12 days heat detection to get all the heifers bred once.

Heat detect and AI for the 1st week, should have 1/3 bred. At the end of the week if close to a 1/3 of the heifers are not detected and served in the 1st week avoid injecting with PG and investigate what is the issue. The heifers may not be observed cycling because they are: under target weight (340kg), intakes have reduced (change in diet), they are pregnant or there may be an issue with heat detection.

Following PG injection ensure you are available for heat detection and drafting for AI 48-72 hours after PG injection. You can decide to inject on day 6, 7, 8 or 9 depending on your availability 48-72 hours later. Depending on the size of the group if more than 3 heifers are expected to be in heat each day, remove the vasectomised bull for this period (2-4 days) to avoid injury to the vasectomised bull. Scratch cards or paint sticks are a useful alternative for this period.

Any heifer not detected in heat may be reinjected 11 days after the 1st PG injection- 1st injection on Monday 4th May give the second injection on Fri 15th May.

If releasing a bull after one round of AI, watch carefully for repeats to ensure he is not overworked in those 2-4 days, if more than 2 repeats per day are expected use AI. An overworked bull will result in reduced fertility and an injured bull.

Estimated cost is €3-4 per heifer (€5 -7 per heifer treated)

OPTION 2 COST EFFECTIVE REGIME. MAIDEN HEIFERS - FIXED TIMED AI AT A PREDETERMINED TIME. NO HEAT DETECTION. 3 HANDLINGS IN THE CRUSH			
Monday 27 th April	2-3 PM	Day 0	Insert PRID or CIDR
Saturday 2 nd May	2-3 PM	Day 5	Inject PG and remove PRID or CIDR
Tuesday 5 th May	2-3 PM	Day 8	Inject GnRH and fixed timed AI (72 hours after PG injection)

Extremely useful options for herdowners with limited time for heat detection or where heifers are in an outside

place. Talk to your AI technician before commencing this programme to guarantee their availability on the required day. All heifers bred once with no heat detection required. However a number of heifers may show early heats on Monday 4th May. There may be benefit in inseminating them then.

If you wish you can let bulls run with them for 17 days (Wed 6th to Fri 22nd May). Remove the bulls and apply heat detection aids on day 17 Wed 29th April. Most repeats occur over 4 days. This allows you to achieve two services per heifer if required with 4 days heat detection and should result in 90-95% of the heifers incalf.

AI repeats day 18 to 24 (Sat 23rd to Fri 29th May). A l'ing the repeats ensures that the bulls are not overworked, fertility is maximised, and it avoids bulls getting injured ensuring we will have them when we need them.

Or apply heat detection aids let the bulls with them and watch for repeats and if there are more than 2 repeats per bull per day use insemination for 2-4 days.

Estimated cost is €20-24 per heifer.

OPTION 3 MAIDEN HEIFERS - MAXIMISE PREGNANCY RATES FIXED TIMED AI AT A PREDETERMINED TIME. NO HEAT DETECTION. 4 HANDLINGS IN THE CRUSH			
Monday 27 th April	2-3 PM	Day 0	Insert PRID or CIDR & Inject GnRH
Saturday 2 nd May	2-3 PM	Day 5	Inject PG
Sunday 3 rd May	2-3 PM	Day 6	Inject PG and remove PRID or CIDR
Tuesday 5 th May	2-3 PM	Day 8	Inject GnRH and fixed timed AI (72 hours after 1st PG injection)

Extremely useful options for herdowners with limited time for heat detection. Talk to your AI technician before commencing this programme to guarantee their availability on the required day. The advantage of this programme over option 2 is that early heats are eliminated on 4th May and you may achieve an increased conception rate.

This option is suitable for use with sexed semen as it overcomes any issue with timing of AI, early heats are practically eliminated and it ensures synchrony of heifers regardless of their stage of cycle.

Estimated cost €30-€32 per heifer.

SYNCHRONIZATION DRUGS		
PG	GnRH	P4 device
Estrumate	Receptal	CIDR
Lutalyse	Ovarelin	PRID
Enzaprost	Acegon	
Alfaglandin	Busol	

All the drugs are POM and are available from your veterinary practitioner. Zero milk withdrawal on all these products.

SYNCHRONISATION FOR DAIRY COWS

SYNCHRONISATION FOR DAIRY COWS FIXED TIMED AI AT A PREDETERMINED TIME. NO HEAT DETECTION

Monday 27 th April	AM	Day 0	Insert PRID or CIDR and inject GnRH
Monday 4 th May	AM	Day 7	Inject PG & Remove PRID/CIDR
Wed 6 th May	PM	Day 9	Inject GnRH (56 hours post PG)
Thur 7 th May	AM to noon	Day 10	AI all cows (16 - 20 hours post GnRH)

- Ideal for herds that wish to tighten and advance the mean calving date & maximises pregnancy rates as 100% submission is achieved.
- Superb for late calvers ensure cows calved 35 days, BCS of 2.75+ and Intakes are maximised.
- Suitable for sexed semen - overcomes issue of timing of AI and maximizes conception rates.

SYNCHRONISATION FOR MAIDEN HEIFERS

OPTION 1

COST EFFECTIVE REGIME. MAIDEN HEIFERS - AI AT OBSERVED HEAT. 12 DAY HEAT DETECTION

Monday 27 th April	Day 0 - Day 6	AI on observed heat - should have 1/3 detected at end of week.
Mon 4 th or Tues 5 th or Wed 6 th or Thur 7 th May	Day 6 or Day 7 or Day 8 or Day 9	PG to heifers not detected in heat. Only inject if 1/3 bred - otherwise investigate
Wed 6 th to Mon 11 th May	Day 7 - Day 12	AI on detected heat. Majority on 48-72 hours post PG injection

- If 1/3 of the heifers are not bred in the 1st week avoid injecting with PG as the heifers are not cycling- due to their weight, plane of nutrition, pregnancy or heat detection.
- For those that are not observed- reinject PG 11 days after the 1st injection. (1st injection Mon 4th May then 2nd Injection Fri 15th May).
- If releasing a bull after AI, watch carefully for the repeats to ensure he is not overworked. Prudent to use AI for those 2-4 days.

OPTION 2

COST EFFECTIVE REGIME. MAIDEN HEIFERS - FIXED TIMED AI AT A PREDETERMINED TIME. NO HEAT DETECTION. 3 HANDLINGS IN THE CRUSH

Monday 27 th April	2-3 PM	Day 0	Insert PRID or CIDR
Saturday 2 nd May	2-3 PM	Day 5	Inject PG and remove PRID or CIDR
Tuesday 5 th May	2-3 PM	Day 8	Inject GnRH and fixed timed AI (72 hours after PG injection)

- May get 10-15% early heats on Monday that can be inseminated.
- This regime allows you to inseminate all heifers with 3 handlings.
- Then you can let bulls run with them for 17 days (Wed 6th to Fri 22nd May) - remove the bulls and AI repeats day 18 to 24 (Sat 23rd to Fri 29th May).
- AI'ing the repeats ensures that the bulls are not overworked, avoids bulls getting injured ensuring we will have them when we need them.

OPTION 3

MAIDEN HEIFERS - MAXIMISE PREGNANCY RATES FIXED TIMED AI AT A PREDETERMINED TIME. NO HEAT DETECTION. 4 HANDLINGS IN THE CRUSH

Monday 27 th April	2-3 PM	Day 0	Insert PRID or CIDR & Inject GnRH
Saturday 2 nd May	2-3 PM	Day 5	Inject PG
Sunday 3 rd May	2-3 PM	Day 6	Inject PG and remove PRID or CIDR
Tuesday 5 th May	2-3 PM	Day 8	Inject GnRH and fixed timed AI (72 hours after 1st PG injection)

- This regime allows you to inseminate all heifers with 4 handlings and all are AI'd at a fixed time - No heat detection until the repeats.
- Then you can let bulls run with them for 17 days (Wed 6th to Fri 22nd May) - remove the bulls and AI repeats day 18 to 24 (Sat 23rd to Fri 29th May).
- AI'ing the repeats ensures that the bulls are not overworked, avoids bulls getting injured ensuring we will have them when we need them.
- Suitable for sexed semen - overcomes issue of timing of AI and maximizes conception rates.

Consult with your Vet to ensure you are on the most appropriate programme and with your AI technician to ensure his availability before commencing any synchronisation programme