



Rochester Veterinary Practice 72 Lowry Street, Rochester, Vic, 3561, Ph: (03) 54 84 22 55, email: admin@rochyvet.com.au

Management of Bulls

Management of new bulls arriving on farm

Basic farm biosecurity measures need to be followed as per below "Farm Biosecurity" section. In addition, the following measures can be taken to ensure a safe and low risk transition to life on your farm:

- Ensure the bull has been BVDV ear notch tested (Negative result).
- Ensure the bull has been and is up-to-date with pestiguard (BVDV) vaccination
- Ensure the bull has been and is up-to-date with 7 in 1 vaccination
- Ensure the bull has been and is up-to-date with vibrovax (*Campylobacter foetus* subspecies *venerealis*) vaccination
- Preputial swabs may be carried out to assess bull for sexually transmitted diseases such as *Campylobacter foetus* subspecies *venerealis* and *tritrichomonas fetus*.
- Isolate the bull in the yards for 24 to 48 hours to allow the bull to settle into the new environment before shifting to a paddock.
- The bull should be drenched to prevent the introduction of gastrointestinal worms and lice onto the property.
- Isolate the bull from other livestock for a for 3 weeks/ or until disease screening test results are obtained.
- Aim to maintain the bulls condition score of 4.5 to 5.5 (scale of 8).

Veterinary Bull Breeding Soundness Evaluation (VBBSE)

It is recommended that bulls undergo a Veterinary Bull Breeding Soundness Exam (VBBSE) approximately 3-6 weeks prior to the mating period. This allows for subfertility/ infertile bulls to be detected and allows for adequate time to source suitable replacement bulls. Approximately 10-15% of bulls are expected to be rejected at the VBBSE (30% due to lameness and 30% due to lesions of the penis and 40% other).

A full VBBSE of bull includes identification, history (including vaccination history) and 5 key components:

1. A general physical examination including structure (general health, body condition score, maturity, gait, conformation of hind limbs and claws) and assessment of the upper reproductive tract.

2. An examination of the testes and measurement of scrotal size (the latter is a reliable indicator of sperm output)
 - Palpation of the scrotal contents, penis, prepuce and examination *per rectum* of the accessory sex glands
 - Yearlings 32cm, 2-year-olds 34cm.
 - > 2-year-old 38cm or 36cm with tone of the testes and turgor of the tail of the epididymis are both good.
3. A serving assessment to evaluate libido and mating ability (Not commonly carried out for dairy bulls).
4. Collection and assessment of a semen sample
 - Collection via an electro-ejaculation
 - o Assessment of:
 - Volume (should be greater than 3ml)
 - Density- colour and viscosity
 - Mass motility/ wave motion- seen under low power (x40) microscope
 - Progressive motility (individual sperm)
 - At least 30% progressive motility but ideally >60% progressive motility
 - A drop of dilute semen on a warm slide and examined at x100 to x400- move forward by self-propulsion at more than 1 body length per second
5. Laboratory examination of sperm morphology
 - Provides details on testicular and epididymal function and also helps predict the potential male's fertility
 - Divided into:
 - i. Compensable: deficiencies that can be compensated by increasing the number of sperm in the ejaculate (sperm can't reach the site of fertilization)
 - ii. Un-compensable: sperm that can reach and fertilize the egg but results in embryonic death or early pregnancy loss (DNA/ chromatin problems)
 - b. There should be at least 70% morphologically normal sperm for an unqualified pass
 - i. No more than 10% major abnormalities
 - ii. No more than 5% of any major abnormality
 - iii. No more than 15% of any minor abnormality

At the end of a VBBSE, the bull will be classified as:

✓ This bull has no risk factors identified for reduced fertility

✗ This bull has significant risk factors identified for reduced fertility in the short term (some conditions are temporary)

Q This bull has some factors identified for reduced fertility but may not exclude the bull from being used in the joining period.

Bull breeds to consider

This will be dependent on the farmer goals and target replacement purebred heifers desired.

Some farmers commonly join maiden heifers with Jersey bulls reduce the risk of dystocia (calving difficulties).

Beef bulls selected should be short gestation bulls (<282 days and small shoulder width) to further reduce the risk of dystocia.

How many bulls to use when joining

The following numbers/ ratio are rough guidelines:

- Virgin young bulls (yearling/ 2 year old)- ratio of 1 bull : 25 cows/heifers
- Mixed-aged bulls – ratio of 1 bull : 60 cows/heifers or even 1 : 80 cows/heifers
- When using oestrus synchrony reproductive programs- ratio of 1 bull : 10 cows/heifers.

Management of bulls when they are in with the herd

There are several things to consider when the bulls are being used:

- Grouping of bulls need to be established well before joining to allow the social hierarchy to be established to reduce fighting between bulls when joining cows/ heifers.
- Rotate bull teams (not just individual bulls) every 4 to 10 days.
- Young bulls often become overworked sooner, therefore rotate young bull group more regularly or have the team rested for longer periods.
- Remove any bulls that break down (become lame, get sick or have a penile injury) from the bull team. These bulls are likely to remain subfertility/infertile for the Remainer of the joining period.
- Don't allow bulls to enter the concrete milking yard with the milking herd. The concrete surface is abrasive and can cause excessive hoof wear and lead to lameness.
- If possible, train the bulls to remain in the paddock to reduce the risk of lameness.
- If possible don't allow bulls access to concentrate ratios as this can disrupt rumen microbiota and can increase the risk of acidosis and laminitis.

Reviewing bull mating performance

As part of the routine assessment of the reproductive performance of the dairy herd, reviewing the bull team performance should be carried out.

A simple approach is to assess the number of not-in-calf at the end of the joining period exceeds the expected not-in-calf-rate for the specific joining period, poor bull performance may have been as issue. The bull teams should be reassessed prior to the next mating period to exclude subfertile/infertile bulls.

Reference:Dairy NZ, 2021, Bull Management. Accessed from <https://www.dairynz.co.nz/animal/reproduction-and-mating/bull-management/>

Veterinary Bull Breeding Soundness Evaluation, 2013, Australian Cattle Veterinarians- special interest group of the Australian Veterinary Association Limited, Eight Mile Plains, Qld, 4113.