Australian Wool Innovation Limited

IMPROVING LAMB MARKING RATE BY REDUCING MOB SIZE

Australian Wool Innovation (AWI) and Meat & Livestock Australia (MLA) co-funded research, led by the Department of Economic Development, Jobs, Transport and Resources Victoria (DEDJTR), set out to quantify the effects of mob size and stocking rate on lamb survival and provide credible recommendations for allocating ewes to mobs and paddocks at lambing. The research has proved and disproved some long-held theories, revealing, **stocking rate has no effect on lamb survival**, but **smaller mob sizes improve the survival of lambs**, regardless of breed.

HOW CAN REDUCING MOB SIZE INCREASE LAMB SURVIVAL?

The effect of mob size at lambing on lamb survival is greater for twin-bearing ewes compared to single-bearing ewes. The more lambs born per day presents a greater risk of mis-mothering. The research results showed that decreasing mob-size by 100 ewes:

- **increased the survival of twin-born lambs** by 2.25% (range 1.1% to 3.5%), regardless of breed, when stocking rate typically ranged from 1.5 to 12.5 ewes/ha
- **increased the survival of single-born lambs** by 0.85% (range 0.3% to 1.4%), regardless of breed, when stocking rate typically ranged from 5 to 10 ewes/ha

There are several financial and other factors that affect optimum mob size and paddock size. The optimum varies with type of fencing used to subdivide paddocks, whether the subdivided paddocks require water, the target ROI, stocking rate of the ewes, breed, lamb price and whether the advantages of improved pasture utilisation in smaller paddocks will be capitalised. The ideal mob size for twin-bearing ewes is approximately half that of single-bearing ewes. For producers that don't pregnancy scan or only scan wet/dry, the optimum mob size is similar to the size recommended for twin-bearing ewes as opposed to single-bearing.

Lamb survival and pasture utilisation both benefit from a smaller paddock size and therefore should be considered when making decisions about optimum management.

OPTIMUM MOB SIZE AND PADDOCK SIZE FOR MERINO SCENARIOS

DSE/ha	Scenario fence type	Pasture utilisation benefits excluded					Pasture utilisation benefits included				
		Twin	Single	Wet/Dry (118%)	No Scan (118%)	No Scan (150%)	Twin	Single	Wet/Dry (118%)	No Scan (118%)	No Scan (150%)
Optimum mob size (number of ewes)											
1.8	Permanent	107	240	165	168	142	45	65	62	57	49
3.6	Permanent	94	206	146	148	123	36	43	24	12	5
7.2	**Permanent**	**85**	181	130	132	108	40	50	52	46	38
7.2	Temporary + water	56	120	84	85	72					
7.2	Temporary, no water	28	68	42	44	34					
14.4	Permanent	77	163	118	119	97	47	66	65	60	54
14.4	Temporary + water	52	107	77	78	65					
14.4	Temporary, no water	23	53	31	33	26					
Optimum paddock size (ha)											
1.8	Permanent	107	200	148	142	128	45	54	56	45	41
3.6	Permanent	47	86	65	63	56	18	18	11	2	1
7.2	**Permanent**	**21**	38	29	28	24	10	10	12	9	7
7.2	Temporary + water	14	25	19	18	16					
7.2	Temporary, no water	7	14	9	9	8					
14.4	Permanent	10	17	13	13	11	6	7	7	6	6
14.4	Temporary + water	6	11	9	8	7					
14.4	Temporary, no water	3	6	4	3	3					

OPTIMUM MOB SIZE AND PADDOCK SIZE FOR NON-MERINO SCENARIOS

DSE/ha	Scenario fence type	Pasture utilisation benefits excluded					Pasture utilisation benefits included				
		Twin	Single	Wet/Dry (118%)	No Scan (118%)	No Scan (150%)	Twin	Single	Wet/Dry (118%)	No Scan (118%)	No Scan (150%)
Optimum mob size (number of ewes)											
1.8	Permanent	92	243	122	123	101	32	45	30	28	22
3.6	Permanent	81	209	105	106	89	27	38	30	27	20
7.2	Permanent	73	183	93	93	81	33	50	30	27	19
7.2	Temporary + water	49	122	63	63	52					
7.2	Temporary, no water	24	69	28	28	22					
14.4	**Permanent**	**66**	165	87	87	75	41	59	47	45	40
14.4	Temporary + water	45	109	57	57	47					
14.4	Temporary, no water	19	54	21	21	16					
21.6	Permanent	63	156	84	84	73	45	69	53	52	46
21.7	Temporary + water	43	103	54	54	44					
21.8	Temporary, no water	16	47	17	17	13					
Optimum paddock size (ha)											
1.8	Permanent	92	203	113	112	96	32	38	28	25	21
3.6	Permanent	41	87	49	48	42	13	16	15	12	10
7.2	Permanent	18	38	21	21	19	8	12	7	6	5
7.2	Temporary + water	12	25	15	14	12					
7.2	Temporary, no water	6	14	6	6	5					
14.4	**Permanent**	**8**	17	10	10	9	5	6	5	5	5
14.4	Temporary + water	6	11	7	6	6					
14.4	Temporary, no water	2	6	2	2	2					
21.6	Permanent	5	11	6	6	6	4	5	4	4	4
21.7	Temporary + water	3.6	7	4	4	3					
21.8	Temporary, no water	1	3	1	1	1					

HOW DO YOU EFFECTIVELY REDUCE MOB SIZE?

To achieve smaller mob sizes at lambing, producers may need to subdivide lambing paddocks or otherwise set single-bearing ewes in larger mobs and reduce mob-size for multiple-bearing ewes. The level of return achieved by the subdividing of paddocks ultimately is impacted upon by current mob size. The returns are much greater when subdividing larger mobs as opposed to subdividing smaller mobs.

For the best results and to maximise the benefits of reducing mob size, pregnancy scanning is required. Through pregnancy scanning, ewe management is intensified with the knowledge of which ewes are dry, single-bearing or twin-bearing. Knowing pregnancy status allows for a bigger impact on profit and for the most appropriate lambing paddocks to be used for twin-bearing ewes.

In relation to paddock size, the twin-bearing ewes are most affected, and it is recommended to allocate twin-bearing ewes to smaller paddocks. This allocation will enhance pasture utilisation and improve lamb survival.

Consideration should also be given to paddock layout that facilitates subdivision using temporary fences. Additionally, given a variable response in maternal behaviour and lamb survival to the characteristics of the lambing paddock, it is imperative that producers keep annual records to help identify their strongest performing paddocks and allocate them to twin-bearing ewes.

RECOMMENDATIONS WHEN REDUCING MOB SIZE

Reducing mob size at lambing is a management strategy which should be added to existing guidelines for increasing lamb survival. Existing guidelines include:

- pregnancy scanning for singles, multiples and drys
- managing the nutrition of single- and twin-bearing ewes separately, including assessing condition score plus feed on offer (FOO) and pasture quality
- access to shelter in lambing paddocks
- knowledge of historical lamb marking rates within available lambing paddocks
- allocating twin-bearing ewes to the best available paddocks.

For further information and the project final report visit: wool.com/mobsize

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