TEAGASC

Kildalton College, Piltown, Co. Kilkenny, E32 YW08

Farmyard Facilities Required for a 100 Cow Spring Calving Dairy Herd

Milking Parlour: 14 units: 4 bay, 19.2m x 5.05- 5.3m internal width

20 units: 5 bay, 24m

Dairy/Plant/Office: 3 bay, 14.4m x 4.4m internal width

Milk tank: 68 litres/cow (5 milkings) x 100 = 6,800 litres (x 1.5 if scope to expand to 150 cows).

Meal Bin 16 tonne split bin (2 x 8 tonnes)

Collecting yard: 1.5- 1.8m^2 per cow

Drafting facilities. Holding yard for drafted cows of 32m^2 per 100 cows.[1]

Calving/straw bedded area: 150m^2 (10m^2 per cow for 15% of the herd).[2] Minimum 50 m^2

Calf housing: 150m^2 of calf pen area[3] Minimum 94m^2 (note 3)

Cubicle housing: 1.1 adult cubicles per cow and 8m^2 or more per cow within the feed barrier.[4]

Silage Pits: Two pits 30m x 15.24 each (each side wall is 18m long).[5]

Notes

1 Holding pen: Assume 90% served in 3 weeks = 90/21 = 4 cows. Allow for peak heat activity of 4 times the average = 16 cows X 2m^2/cow = 32m^2.

2 Calving area: Assume 90 cows and 20 heifers are calving down. 110 animals x 50% calving in 3 weeks = 55 animals/21 = 2.6 cows per day on average. Allow double this at peak and provide for cows spending approximately 3 days in the straw bedded area =5 cows x 3 =15 cows rounded off. Minimum = one day in calving facility = 50m^2. It is recommended to have the facility to create 2 to 3 individual pens within the group calving facility.

3: Calf Housing: 55 calves are born in the first 3 weeks and approximately 30 in the following 3 weeks. Making provision to keep calves for 5 weeks (a minimum of 4 weeks is likely to be introduced), therefore plan to house 75 calves. 75 x 2m^2 = 150m^2. Calves to be reared to 10-12 weeks of age may need a pen area of up to 2.3m^2 each especially if large numbers are housed together. Minimum = 55 x 1.7m^2 = 94m^2.

4 Cubicle Housing: Assuming 90 cows will be scanned in calf in the autumn and 20 in calf heifers will be housed with them. The 10 cows that are not in calf will be culled or housed elsewhere.

5 Silage Facilities:

100 cows x 7.5tonne	= 750
20 in calf heifers x 6 tonne (80% of cows)	=120
20 weanling heifers x 3 tonne (40% of cows)	= 60
Total	930 tonnes

Assume 24 hectares (60 acres) of 1st cut at 25 tonne of settled silage/hectare = 600 tonnes x 1.39 m^3/tonne = 834m3 /**15.24m wide /2.4m high** = 22.8m long pit (and side walls) + 4m* + 8m apron = **34.8m long** pit. Add 20% to length if no walls. 2nd cut: 330 tonnes = 330 bales or a Pit 24.5m long (including apron) X 15.24m wide and 2.4m high. Alternatively two equal pits each 30m long x 15.24m (98 feet by 50 feet). A 5 month winter is assumed.

*since we normally measure from half way up the ramp we only need to add half the ramp or 4m approximately.

In large herds 3m high silage walls and 18.3m wide pits may be in order. The height of settled silage is likely to be an average of circa 3m (if 1/3 of the pit 3.6m, 1/3 of the pit 3m high and 1/3 of the pit at 2.4m).

Please see document 'Farm Buildings Reference Data – August 2022' for information on slurry storage requirements, space for stock etc.

October 2022

Disclaimer

The above figures are only a guide. Please consult with your own agricultural adviser/consultant, milk purchaser etc. for specific advice on your own situation. Milk yields can vary depending on cow type, system of farming etc. Similarly silage storage requirements will depend on animal weights, length of winter and any requirement for buffer feeding etc. The health status of the herd (in particular TB) will affect the requirement for housing and feed.