

Livestock Stocking unit report for Westwood Hall Farm

This report has been commissioned by Mr Matthew Shuker of Westwood livestock, West Hall Farm Leek ST13 8NW and it has been produced by Alastair Johnston BSc Hons Agricultural with Farm Business management. I am a Professional member of the Institute of Agricultural Management and a member of the British Institute of Independent consultants, and Senior lecture at Harper Adams University in Agriculture and Farm Business management.

The total land area at Westwood Hall farm is comprised of 68.68ha (169 acres) of permanent pasture,

This report is to justify the holding capacity for up to 400 head of juvenile bovines namely beef animals aged from 1 months to 16 months of age, with the animals reared in batches, starting with 100 calves 0 – 3 months and increasing the number to a proposed maximum of 400 head being on site at any one time. The production plan is to rear the animals until they are 16 months weighing in the region of 400kg they then will be sold and replaced with a batch of between 20 and 25 young calves.

The calculation for livestock units is based on 1 livestock unit being an adult milking cows weighing 750kg producing a calf weighing 45kg and also producing 4500litres of milk at 3.6% protein. However, this planning proposal is not for lactating dairy cattle at 1 Livestock unit. It is for non-breeding non lactating beef youngstock as highlighted in the table below. Table 1 highlights the ages and maximum numbers of animals proposed on the holding. The total livestock units would be 167 livestock Units – it should be noted that livestock units are not an indication of livestock density more a reference unit. The livestock density index or stocking rate is an indication of the pressure of livestock farming on the land area

Table 1 – Proposed Maximum Livestock numbers and livestock Units for Westwood Hall Farm

Livestock Type	Number of animals	Average livestock unit	Total livestock unit
Calf up to 3 months	100	0.34	34
Calf 3 months to 5 months	100	0.34	34
Calf 5 months to 12 months	100	0.34	34
12 – 16 months	100	0.65	65
TOTAL	400		167 Livestock units

Nix, J. 2023. *Farm Management Pocketbook*. 53rd Ed. Corby: The Andersons Centre.

Taking into account the type and number of livestock units as proposed at Westwood as seen in table 1, it is clear that it would be 1 livestock unit per acre if they were

all to grazing, However the calves under 5 months old would not be grazed at any point during the year and therefore would be housed all year round and would be fed on milk, water, concentrate feed and roughage such as straw or hay. The animals aged over 5 months to 16 months would be housed for 6 months of year (The Autumn and Winter period) and grazed in the Spring and Summer. During the grazing period they will be grazed on the grassland there would be a maximum of 200 grazing animals these would be a total of 99 livestock units grazing over of land at rate of between 1.4 LSU per ha and 2.2 LSU per ha depending on age of the animal, it nutritional requirements and the quality and availability of forage in the field, less nutritious forage a lower stocking rate will be used, in more productive field set stocking grazing pattern will be used, if required cattle will be fed surplus conserved forage in the fields as supplementary feedstuff

Until 2024 The UK Government had an **extensification** scheme which paid additional subsidy to farmers who kept their livestock at less than an average of 1.4 LUs per hectare, as it was deemed as an extremely low stocking rate and therefore grazing and forage requirements for the proposed 200 head of young beef animals which would be grazed is not intensive and there is adequate land to allow summer grazing and conserved winter forage, this has been highlighted in table 2

Table 2 – Forage requirement for different aged beef young stock in Kg of dry matter

Age in month	Weight in kg	Forage intake kg/dm/day	Number of animals	Total forage DM required in kg per month	Total DM required in Kg per year
1	55.5	0.8	25	600 (straw)	7200
2	71	1.6	25	1200 (straw)	14400
3	96.5	2.25	25	1687.5 (Straw)	20244
4	122	2.9	25	2175 (straw)	26100
5	148	3.4	25	2550(straw)	30600
6	174	3.9	25	2925	35100
7	200	4.35	25	3262.5	39150
8	226	4.8	25	3600	43200
9	252	5.3	25	3975	47700
10	278	5.8	25	4350	52200
11	299.5	6.1	25	4575	54900
12	321	6.4	25	4800	57600
13	342	6.6	25	4950	59400
14	363	6.8	25	5100	61200
15	384.5	7.1	25	5325	63900
16	406	7.4	25	5550	66600
				48,412.5	580,950

Table 2 shows a requirement for 48,412.5kg DM (49tonnes) of forage per month or over a 12-month period 581tonnes of dry matter for the maximum proposed 400 head of youngstock.

Grass production

The world record for dry matter (DM) yield of grass is around 25 t DM per hectare. Yields in the Recommended Grass and Clover Lists trials tend to be around 16–18 t DM per hectare under cutting regimes, with newly sown plots and with high levels of nitrogen being applied. The target for commercial grazing systems in the UK and Ireland is to utilise 10 t DM per hectare. Ref AHDB *Expected costs and yields from grass leys*.

The land at Westwood is split into extensive grazing grass and intensive mowing grass I have calculated that 45ha is extensive and is grazed only and 23.68ha is extensive mowing grass which used for mowing and supplying winter forage

Given the nature of the land and assuming that land will produce a on average 10 tonnes of DM per hectare there would be production for both grazing and mowing of 686.8tonnes of DM over the 68.68ha, the requirement for 400 head of stock at the ages proposed would be 49tonnes of dry matter per month or 581t per year, which would allow surplus forage to be stored for future use if the grass growth is below optimum, wet springs, dry summers or to be sold as surplus to neighbouring farmers to feed their stock. There is also 105t of surplus DM production which always for poor growing years when the average might drop below 10t/ha of dry matter, the surplus can be stored and used at a future date to compensate for season when the grass growth is less than optimum, wet spring, dry summers, early housing periods or the surplus can be sold to neighbouring farmers and the fund would be used to buy the 98 tonnes of straw required to feed the very young calves in order to develop their rumens with scratch fibre which grass does not provide. The surplus 105t of dry matter also means the average DM production could be 8.5t per ha and there would still sufficient forage for the proposed animals

In conclusion this report shows that the farm is capable of accommodating upto 400 head of young cattle at various ages from a few weeks to 16 months of age in term of grazing capacity and also forage production of the grazing and winter feeding period.