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Objective

To take a by-product of the British goat dairy industry and rear surplus billy goats for meat, producing a quality, locally produced product to supply local retailers and restaurants.

Background

This business plan is written as a supporting document for a planning application made by Mr and Mrs John Foster for the construction of an agricultural barn at The Grange, in Whiston, Staffordshire. The barn will be used primarily for the housing of goats reared for meat, with storage of feed, machinery and implements for management of the holding. This venture is fuelled by seeing a surplus of male goat kids when visiting family who keep a sizeable goat herd for milk production. The dairy herd has been established for 10 years, and a wealth of skills and knowledge about the industry has been developed within the family. The population of the herd is managed in house resulting in a by-product of billy goats, a small number of which are kept for breeding purposes and to satisfy animal welfare concerns, the rest are euthanized. It is felt that more can be done to make use of this surplus, rearing them for meat as part of an emerging market. Being a smallholding, The Grange is well suited to a small scale, dedicated, standalone facility with an emphasis on goat meat production.

UK Goat Industry

Dairy is by far the largest sector of the British goat industry in terms of numbers and production, with commercial production of goats' milk beginning approximately 25 years ago. The UK has an estimated population of approximately 45 000 milking females on around 120 commercial units. Herd size varies, up to a maximum of 6000 on a single holding (2). Goats' milk is similar in flavour to cows' milk but is easier to digest as the fat globules are smaller and a softer curd is formed in the stomach. It is therefore in demand and can be consumed with great advantage by many of those who are intolerant of cows' milk, or with delicate digestions, and for rearing orphan mammals of all species. Goats' milk is also used to make cheese and yoghurt, with the potential market for speciality goats' milk cheeses being considerable (1)

Whilst it is believed that up to 80% of the world's population have goat in their diet, it is considerably under consumed in the UK. Substantial effort is being put into developing the market for kid and goat meat in the UK, with numerous articles and success stories on the subject in the agricultural press. It is widely believed in the industry that

development of a sustainable goat meat market in the UK should not be impossible, as it makes good eating with considerable health benefits, although there is still some prejudice to overcome (1). Traditionally goat meat production is often the cull from dairy herds, however there is a growing demand from dedicated meat breeds such as the Boer, and through rearing of unwanted billy's born into established dairy herds. It is still considered specialist and better suited to an enterprise on a smaller scale, supplying restaurants and specialty retail outlets.

Breeding

Dairy Goats will milk profitably under a regime of kidding once in every two years (1). Kidding is carried out on the farm, and will maintain a productive herd through replacement of those at the end of their productive life. This process will create a surplus of billy kids, a considerable number of which are euthanised immediately. Farms supplying the Goat Dairy industry who are members of the Provision Trade Federation, adhere to Farm Assurance and Welfare Standards which enable them to carry Red Tractor Accreditation. These standards clearly state that 'Any unwanted, surplus kids are to be euthanised humanely. This should be carried out by a veterinary surgeon or other suitably trained person'. (3) Although a sensitive subject there is a large number of surplus billy kids which are euthanised, which often costs more than they are worth.

Goat Meat Market

Demand

Due to the efforts of UK goat farming industry and goat milk retailers, the market for UK produced goat meat is growing. The majority of consumers are currently from Asian or Afro Caribbean communities, with a growing interest from 'health conscious' consumers with increasing awareness of its versatility as an alternative source of protein. As goat meat is an emerging market, accurate figures for rearing and slaughter in the UK are not readily available, however it has been suggested by the sector that it is around 18-19000 goats per annum. A figure largely supported by a food standards agency snapshot survey taken in March 2022 (2). Research into the demand locally, conducted by ourselves has demonstrated a number of potential outlets in and around the Staffordshire Moorlands.

Health Benefits

Goats lay down fat within the body cavity rather than under the skin, therefore the carcass is a good deal leaner than that of lamb; a good healthy eating point in its favour. In comparison to red meats, goat meat has a reputation as a healthy meat alternative. It is low in fat, cholesterol, calorific energy and saturated fat (50% lower in fat than beef and around 40% lower in saturated fat than chicken) ([Haytowitz et al, 2019](#)) (2).

Ethnic / Regional Variation

The demand for more mature cull goat meat is greater among a number of ethnic communities around the country (2). This demand varies according to region and during religious celebrations with the midlands and north east of the country leading the demand. North Staffordshire is well situated for the production of Goat meat as it sits between two major demand areas this is demonstrated by the number of abattoirs and butchers who process and supply Goat meat.

Billy Goat Rearing Requirements

Legislation and Standards

All goats are classed as farm animals, and relevant legislation applies including that governing identification, movement and holding registration. It is fully accepted that the business will have to comply with this, and with any legislation regarding susceptible to notifiable diseases such as tuberculosis (2). Rearing goats for meat commercially is relatively new to the UK, as such there is limited knowledge and industry regulation. In addition to our existing knowledge and experience on keeping goats and other livestock, the following publications are used as guidance in this business plan:

- Red Tractor Standards Manual – Dairy Goats Standards
- RSPCA – Goat welfare and ownership
- British Goat Society information leaflets
- DEFRA's Code of recommendations for the welfare of livestock - Goats

Housing

Most goat herds are housed all the time, predominantly because goats have only limited age-dependent resistance to gastrointestinal nematodes. (2)

Facilities developed as part of this business plan are being designed using the Red Tractor standards for Dairy Goats, which have the same requirements for welfare as goats reared for meat and shall adhere to the following 5 freedoms:

- Freedom from hunger or thirst; provision of adequate feed and clean drinking water at all times.
- Freedom from discomfort; goats require more protection from inclement weather than cattle or sheep, and those which have access to pasture should have access to suitable shelter at all times. All housing should be dry and draft free.
- Freedom from pain, injury or disease; provision of adequate healthcare.
- Freedom to express normal behaviour; sufficient headroom for the goat to stand upright on its hind legs with neck outstretched. If the goats are housed in a group in the same area a minimum of 2 sq. m. per goat needs to be provided, although more than this minimum is recommended if bullying is to be avoided (1).
- Freedom from fear and distress; supply of conditions to prevent mental suffering.

Areas given special consideration in this business plan are as follows:

Barn construction

It is proposed that the barn is constructed using concrete panels up to a height of 2m, and then slatted up to an eaves height of 4m. A door on the north-east side will provide direct access to the field, with tamper proof latches to prevent escape. All electrical installations will be located on the western end of the barn. A designated secure area for machinery, implement, and feed storage has been included, the emphasis being on the need to create an adequate store to protect farm assets from theft. This secure area will also be inaccessible to the goats for their own safety.

Ventilation

The upper portion of the walls of the barn are slatted up to the eaves, with additional venting in the ridge, to permit a flow of fresh air. The design of the barn with walls being solid up to 2m, will keep the goats free from draught, yet maintain a circulation of air through the barn to cool in summer and reduce condensation in the winter.

Flooring

As the barn will be a new build, we have the opportunity to build the floor to spec. It is proposed that the floor will be a concrete base with a slope of 2% to a lateral drain. This concrete will also be textured to minimize slipping.

Roof

The roof will be constructed from insulated panels to help maintain a constant temperature throughout the year, and reduce condensation. Incorporating transparencies to the north-eastern aspect to allow sufficient natural light.

Lighting

The roof on the north-east facing side will contain transparent panels to provide natural light, and will be solid on the south-west facing side to reduce the effect of heating from the sun. Artificial lighting will be provided and used during the winter months as required.

Space

The minimum amount of space required per goat is 2m² (1). However, as this is a minimum, 3m² per goat is proposed, to minimise bullying and accommodate for fluctuations in the population of the herd.

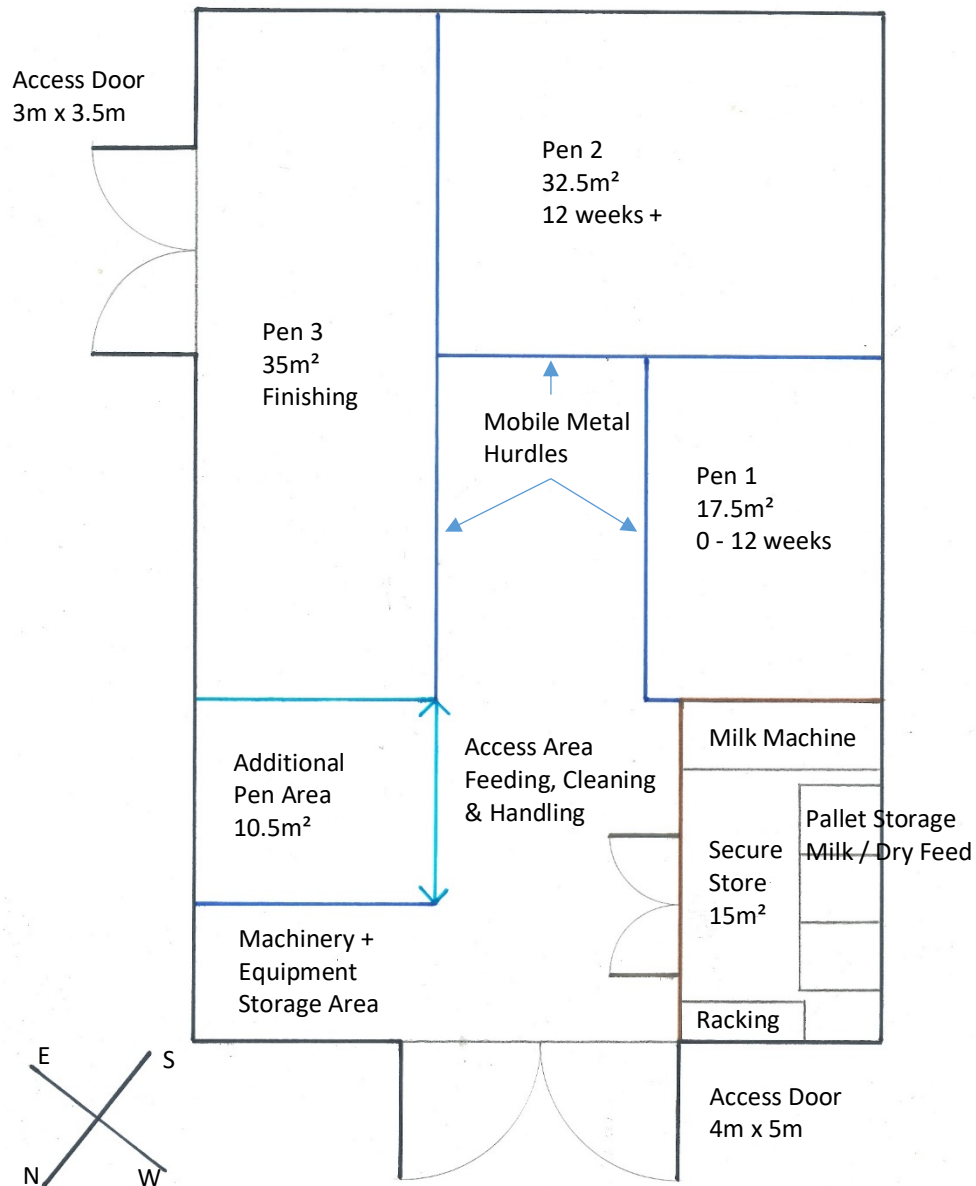
Handling facilities

Internal penning will be made from metal hurdles, which can be moved as the stock levels vary in size. A mobile crush will be kept on site for use during vet visits and to assist in maintaining a healthy herd, along with a suitable stock trailer. The handling equipment will be of a construction with no projections that can injure or cause the goat to become trapped. All electrical wires and fittings will be well out of reach of the goats and well protected. (1)

Barn Internal Layout

The goats will be subject to a rotation system, which is dependant on the age of the stock. This consists of three pens, with the herd being penned separately in three age groups, all pens will be flexible using metal hurdles. Stock rotation and isolation has the advantage of reducing bullying and facilitates a separate pen for the 0 – 12 week goats directly fed by milk from the secure store. Figure 1 below shows our intended layout for the barn.

Figure 1 – Goat Barn Internal Layout



Pen 1

Pen 1 has an area of 17.5 m² and will house up to 11 juvenile goats. The goats will be under 12 weeks old, and fed on milk plumbed directly into the pen from the vermin proof store. Additional hay and nuts will be available to the juvenile herd on the hurdles, and from day 1 fresh drinking water will be available to them from the water bowls mounted on the external walls.

Pen 2

Pen 2 is a fattening pen and has an area of 32.5 m², which will house up to 11 goats aged 12 weeks plus. The goats will be fed on hay and nuts from feeder mounted on the hurdles, and water will be available to them from the water bowls mounted on the external walls.

Pen 3

Pen 3 has an area of 35 m² extendable to 45.5 m² when needed, and will house up to 16 goats for finishing prior to slaughter. The goats will be fed on hay and nuts from feeder mounted on the hurdles, and water will be available to them from the water bowls mounted on the external walls. In addition, the goats will have access to pasture via a dedicated exit. This exit would be open during daylight hours, in acceptable weather conditions but also gated to give visibility and increased ventilation.

Secure Store

The store will be a vermin free controlled environment, locked with a door internal to the barn and no external door. It will contain:

- Milk Machine, which will be plumbed directly into pen one. All pipework will be housed in the store, inaccessible to the goats with only the feeding nipples mounted to the wall in the pen.
- Bulk Milk storage on pallets, accessed through internal door
- Bulk Food (nuts) storage on pallets, accessed through internal door
- Racking containing medicines, cleaning equipment, PPE and other sundries

Machinery and handling equipment Storage Area

This is an area of the barn set aside for storage of equipment used for keeping the goats, which would be unsuitable to be kept outside. It will include:

- Crush for vet visits and husbandry
- Pallet Truck and loader for handling of the feed, bales of hay and bedding, and other equipment

We would also keep a small quantity of hay and straw in this area, located for convenience during daily feeding.

Barn External

Doors

Two doors provide external access to the barn. A main access door located on the north-western gable end will be a 4m x 5m double barn door style and allow general access for bedding, feeding, mucking out with access to secure store. A second door will be on the north-eastern elevation and will be a 3m x 3.5m double barn door style. This will provide access to pasture for goats housed in pen 3 and will also be gated internally to provide additional ventilation during inclement or hot weather.

Access to pasture

All goats are ruminants, and as such there are many similarities with sheep and cattle management systems in the UK. Goats have a tendency to browse and range for their food, so do not graze pasture in the sense that sheep or cows would, they will pick at hedgerow and a variety of other plants, grazing selectively. The Grange has a land holding of approximately 4.5 acres available for pasture, with a minimum recommended area per goat of 0.15 acre, anything less would soon become soiled and the goats would not eat it (1). The goats kept as part of this business plan will be reared from a young age and in the interests of biosecurity will be kept indoors to minimize the risk of illness through gastrointestinal nematodes or other disease risks. Weather and pasture conditions permitting, older goats may be let out to supplement their diet of hay available in the barn, for finishing before slaughter. By this time their digestive system will be more developed and more resistant to gastrointestinal nematodes, which can be reduced further with pasture management and use of suitable worming medication. If the goats are kept in successive age groups, there will be a small number of goats in the herd ready to be let out, which will give the pasture a chance to recover and allow us to use the goats to help maintain the pasture as part of the management of the holding. Boundaries of the pasture will consist of post and wire stock fence, with supplementary electric fencing. Access to native hedgerow will be monitored to protect it from decimation and to maintain its ecological value.

Feed and Water

Feed and hay will be placed outside the pens, and the Goats feed by placing their heads through a slatted barrier. To prevent bullying, there will be a sufficient number of openings in the slats for every goat to feed at once, all goats will have access to salt lick at all times.

Water

Fresh drinking water will be piped to automatically filling drinking bowls from the existing mains water supply. In the interest of keeping bedding as dry as possible these will be installed at the lowest point to ensure efficient drainage of excess water or overflows. Pipework will be routed around the barn and shielded in a manner that makes it inaccessible to the goats.

Feed

Feed and hay will be sourced from assured sources, and comply with UK law and Red Tractor Scheme standards, with records kept of each purchase for traceability and verification of composition. The diet will vary depending on the age of the goat, an exact composition will be determined with nutritionist advice and supplied accordingly.

- 0-12 Weeks - Newborn kids require colostrum from the nanny as soon as they are born, definitely within 6 hours, and kids up to 12 weeks of age can be fed on a powdered milk substitute. Whilst we do not intend to birth kids as part of this business plan, we would take kids younger than 12 weeks to be raised artificially on powdered milk. The process for this is the same as for sheep, and after weaning, they would move onto dry feed and hay.
- 12 Weeks plus - Feeding regimes for the goats will vary depending on breed and age, but a total mixed ration based on grass and maize silage is most common.
(2) This is essential for the healthy function of the ruminant, and will be supplemented with dry feed.

Feed Storage

Storage of feed will be in the western corner of the barn, inaccessible to the goats in a dedicated store room to minimize risk of contamination and vermin interference. We intend to use the existing open barn at The Grange for the bulk storage of hay for feeding, and straw bedding materials. This makes good use of assets already present onsite as its size and its design suggests that it may traditionally have been used for storage of hay and straw in the past.

Health and Welfare

Illnesses

Common illnesses which are of note where goats are kept indoors include Johne's disease, Scrapie, and Listeriosis (2). Goats also suffer acutely in extreme weather conditions, all breeds have little oil in their coats and can soon get soaked to the skin, quickly leading to illness. When a goat gets ill, it can soon deteriorate so timely identification of illness, and good husbandry practices in the barn are crucial. We will be proactive in our relationship with our veterinary practice and in our husbandry practices to minimize discomfort due to illness.

Cleanliness

The design and layout of the barn will assist us in the cleaning process we choose to employ; a central access route will allow easy cleaning and distribution of feed. As this is a small-scale enterprise, it is not foreseen that there will be a large amount of waste. Waste bedding and dung from goats consists of straw and solid dung, which we intend to deal with on site by spreading onto the holding. The husbandry policy employed by this enterprise will ensure compliance with welfare standards, and minimise the risk posed through poor bio-security measures.

Security

The barn will have a CCTV system installed to cover the interior pens and central access, along with exterior access points to the barn. Remote access to this footage in real time will allow additional welfare checks to be made and will further protect against poaching and machinery theft. In addition, access gates to the pasture from the barn, and around the holding will be kept locked.

Breed

The Boer is the breed of goat most suited to meat production, but other breeds used in the dairy industry can also be successfully reared for meat. The majority of the surplus billy kids born into the dairy herd are Saanen, these would be a cost-effective purchase as they can grow favourably for meat, however would likely need to be kept for a little bit longer to 'lay down' the meat before slaughter. A further advantage of the Saanen is their docility and placidness, in a contented herd, fighting, bullying, jumping out of pens and other bad habits is much less likely. Typically, the Saanen would be kept for around six months or until it reaches 50 kilograms, a suitable weight before slaughter.

Whiston Grange

Location

The Grange is on Whiston Eaves Lane, in the vicinity of Whiston village. It is well located, with easy access to local suppliers and outlets for the business in Leek, Cheadle, Ashbourne and Uttoxeter. The proposed location of the barn is in the field behind the house, and forms part of the field boundary to the garden.

Suitability

Although demand is present and growing, goat meat production is perhaps not yet viable for a large commercial enterprise, as demonstrated in the source material. The success stories are all small-scale enterprises which are part of larger farm businesses. Although this is a new, independent enterprise at The Grange we would work closely with the existing dairy business, having the opportunity to build a 'purpose built' facility for the specific needs of rearing goats for meat, and exploring the market locally.

The Barn

The barn would have an overall footprint of 150m². The intended layout gives a minimum of floor space to goats of 57%, up to 64% if required by the extension of pen 3 into the equipment and handling store. The remaining area is for access, feed storage, machinery, and implement storage. It has direct access onto the pasture on the north-eastern aspect.

Stock Levels

We plan to rear a succession of different age groups, to maintain a steady flow of goat through the business, and to accommodate any potential peaks in demand. To meet welfare standards, the maximum number of goats housed in the barn would be 38 and will vary with breed and time of year. Goats are seasonal breeders which would cause the stock numbers to vary; however, this would not affect us as much if we are taking unwanted billys from the dairy herd as their breeding is managed all year round.

Manpower

The workload to keep a small herd of goats is not substantial, they would need to be checked daily to confirm the welfare of the herd and that the feed and water is available. Initially this enterprise would be staffed by the family, but as the business grows there may be potential for a part time vacancy for a local person / young farmer / retired person. It would suit someone who is looking for a supplementary income, and may be interested in the business or considering a career in the agricultural industry or a career working with animals.

Sustainability

A key ethos of this business plan is to stay local. The stock may come from outside of the area depending on availability, but we fully intend keep the suppliers, manpower, and outlets as local as possible and offer a quality product locally produced.

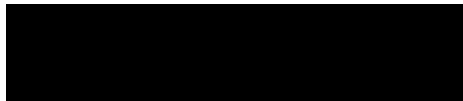
Business Growth

The Grange is well positioned for potential sales to the Moneystone Park development when it is operational, and Whiston Golf Club and other local restaurants, either directly or through a business partner. This enterprise is intended to be independent from the existing family business, a benefit of this would be our ability to take surplus Billys from other dairy herds with minimal bio-security risk.

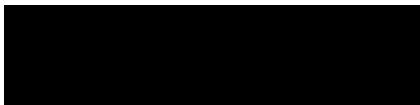
Contacts

Suppliers

Staffordshire Hay



Mears (animal feeds)

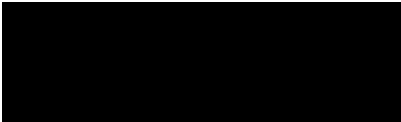


Wynnstay (animal feeds & general supplies)



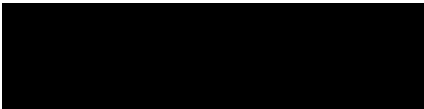
Vets

Shires

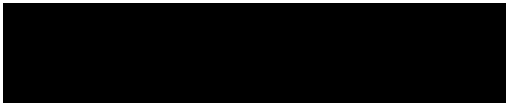


Abattoirs

Dunwood Farm



Manifold Meats



T G Sargeant & Sons

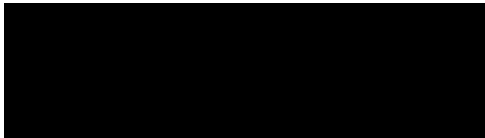


Outlets

J W Ash & Sons



Dunwood Farm



Gourmet Sausage Company
Leek Butter Market

Conclusion

The rearing of Billy goats at the Grange can be summarised as follows:

- This is a small scale, specialist enterprise which would focus on meeting a growing demand for quality goat meat.
- The billy kids we plan to rear are essentially a by-product of the dairy industry which would normally be euthanised at birth, we plan to add value and return them to the food chain.
- The Grange is a smallholding ideally situated in both size and location to succeed in maximising the benefit of the business plan. As such it also adds diversity and value to the local rural economy.
- This enterprise would be independent from the existing business, but will develop alongside using the industry knowledge and contacts gained over a number of years. It will venture into another side to the industry which is as yet not viable for a large commercial operation, but is suitable for a smallholding and will introduce an additional revenue stream.

Sources and reference material

Consultants

Mr & Mrs James Verney (Sister and Brother-in-Law) – Dairy Goat Business Managers

Publications

- (1) - British Goat Society information leaflets
- (2) - UK Vet Livestock
- (3) - Milking Goat Association UK
- (4) - Red Tractor standards manual for Dairy Goats
- (5) - DEFRA Code of recommendations for the welfare of livestock – Goats
- (6) - RSPCA – Goat welfare and ownership

Articles

How a young farmer developed a goatmeat business – Farmers Weekly

Goats prove a viable meat business for farming couple – Farmers Weekly

No Kidding – Western Telegraph