



SAC Farms at Bush Estate

Overview

The Bush Estate lies eight miles South of the centre of Edinburgh, adjacent to the A702 road. The farms extend to approximately 1,013 hectares (2,490 acres). The land ranges in altitude from the 500 metres above sea level, down to 150 metres. There is a wide range of slopes, soil types, aspects and terrain. Annual rainfall is 800 - 1200 mm.

The Farms exist and are managed to achieve the multiple objectives of provision of resources for Research & Development, Teaching and Extension work in the context of good commercial farm practice.

Research & development

Some of the current topics of research being carried out using the Farms are:

Beef

- Beef composition and eating quality
- AI and triple synchronisation of oestrus
- Evaluation and utilisation of wholecrop cereals
- Evaluation of purebred Charolais cows as sucklers
- Outwintering systems – cattle welfare

Sheep

- Genetic and nutritional influences on maternal behaviour
- Pre- and perinatal effects on development of neonatal livestock
- Sustainable breeding strategies for hill sheep
- Incorporating x-ray computed tomography into selection programmes to improve the quality of sheep meat
- Methods to predict growth efficiency and carcass composition
- Selection indexes for crossing sire ("Longwool") sheep to breed crossbred ewes of superior economic performance

- Evaluating the anthelmintic effect of tanniniferous herbs on grazing lambs

Farm data

The main sets of buildings are at Boghall, Woodhouselee, Easter Howgate and Castlelaw, with additional land at Glencorse and House O'Muir. The farms cover a range from NVZ arable to heather moorland in the Pentlands, consisting of:

Hill	300 - 500 m	656 ha(55 ha improved)
Upland	250 - 300 m	152 ha
Lowground	150 - 250 m	205 ha

Sheep

Hill

There is a total of 1100 Scottish Blackface ewes on Castlelaw and Turnhouse hills, both of which are classified as Less Favoured Areas (LFA). Ewes are brought down to the enclosed and improved fields to lamb in mid April, after which those with singles are returned to the hill and those with twins are kept on the improved land. Normally, 130 lambs are weaned per 100 ewes mated. The Castlelaw flock has been the focus for the Hill Sheep Breeding Project, successfully seeking to improve both maternal and lamb characteristics through selection. The flock is also part of Blackface Elite group breeding scheme.

Upland

A flock of 750 April lambing Mule ewes are maintained on upland areas. Within the flock a variety of mules crosses from different hill breed dams has just been completed in the 'Longwool' project. They are crossed with Texel, Suffolk and Charollais rams to produce prime lambs, with replacements being purchased from high health status flocks. The ewes are housed at Woodhouselee from January until lambing in late March/April, when they are put back out to grass.

Success through **Knowledge**



SCOTTISH EXECUTIVE

This project is funded by SEERAD



Normally, 170 lambs are weaned per 100 ewes mated. They provide stock for arrange of projects, particularly on factors associated with internal parasites in sheep.

Lowground

Two flocks are based at Woodhouselee. One containing Suffolk, Blackface and their crosses is used mainly for neonatal behavioral studies. The other, pure Texels, is involved in genetic work into muscling ability and meat quality.

Beef

A herd of 200 suckler cows is based at Easter Howgate. Replacement heifers have since 1994 been homebred, with Limousin and Aberdeen Angus breeds being evaluated for their suitability as sires of replacement heifers. Charolais are also used as terminal sires.

Cows are bred by Artificial Insemination to calve during April and May. The calves are weaned in October and housed. Finished animals are sold mainly to local abattoirs at 12-14 months of age, with a proportion on studies to investigate carcass composition using CAT scanning of primal joints and then subsequent dissected composition and eating quality. The cows are housed at weaning and fed a straw based diet through the winter. During the coming autumn/winter there will be continuation of SAC's work on outwintering, this year focussing upon understanding welfare issues.

Arable

On the 74 ha of best land there is an intensive arable crop rotation. Cereals and grass are conserved as silage and hay, providing winter feeding for the cattle and sheep enterprises.

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25/09/0069