

Outwintering replacement heifers

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A trial carried out by Harper Adams University investigated the feasibility of outwintering in-calf dairy heifers on stubble turnips and good-quality haylage. The study found that daily liveweight gains (DLWG) of 0.7-0.8kg/day can be achieved on an outwintering system, which is comparable to performance from housed heifers fed grass silage. Although this study focused on dairy heifers, the results could be applicable to growing beef cattle.



Outwintering can substantially reduce fixed costs. It has been demonstrated that, for every day a suckler cow or growing animal is out at grass, a saving of 60-90 pence per day is made per animal. The current average grazing period in the UK is around 140 days, meaning that on average cattle spend 60% of their lifetime indoors.

While it is acknowledged that stubble turnips and forage rape are not very 'winter hardy', recent mild winters have enabled these forages to be effectively grazed through to spring at Harper Adams. Furthermore, they can be sown from late July to the end of August and work well as a catch crop following cereals on a mixed arable and livestock enterprise. The nutritional analysis of these crops is shown in Table 1.

Table 1: Nutritional analysis of stubble turnips and forage rape

	Stubble turnips	Forage rape
Dry Matter (%)	10-15	10-12
Metabolisable energy (MJ/kg DM)	10-11	10-11
Crude Protein (% in DM)	17-18	19-20
Sugars (% in DM)	55	-

Method

The study began on the 21 November 2007 and involved 28 in-calf dairy heifers aged 22 months, with an average weight of 476kg. The heifers were split into two groups and either outwintered or housed.

The outwintered heifers were initially offered *ad libitum* (*ad lib*) straw, however, this was replaced by haylage (10.6 ME MJ/kg DM) after 48 days due to poor performance. Free access mineral blocks were also provided. The heifers were strip grazed, with the electric fence moved three times a week.

The housed heifers were fed *ad lib* grass silage (11.1 ME MJ/kg DM) and whole crop (10.3 ME MJ/kg DM). They were initially fed 1.5kg concentrates per day but this was replaced with 100g minerals after 48 days. Both groups of heifers were turned out onto grass on the 20 March 2008 and performance subsequently monitored until the 1 July 2008 when the first heifers started to calve.

Results

The performance of the two groups of heifers on trial are shown in Table 2. Over the duration of the trial there were no differences in the performance of the in-calf heifers.

Table 2: Heifer performance whilst on trial

Daily liveweight gain (kg)	Housed	Out-wintered
Start – turnout (120 days)	0.85	0.70
Turnout – finish (120 days)	0.78	1.08
Start to finish	0.82	0.88

The initial poor DLWGs of the outwintered heifers meant a change from feeding straw to haylage was needed. This resulted in significant compensatory growth being recorded. Growth rate of the housed heifers did not improve post turn-out as it had done for the outwintered heifers, which meant there was no significant difference in overall DLWG between the two groups from start to finish.

There were no significant differences in locomotion or dirtiness score and body condition scores, except after 48 days, when the housed heifers recorded a higher condition score – hence the removal of the 1.5kg of concentrates.

Silage dry matter intakes of 10.2kg/day were recorded for the housed heifers. Estimated intakes of stubble turnips ranged from 37-51kg/head/day (4.2-5.8kg DM/head/day) plus 7.5kg/head/day (6.2kg DM) of haylage and 90g/head/day of mineral block. Utilisation of the stubble turnips was estimated at 38-44%. The majority of the stubble turnips left ungrazed were the roots, with the heifers preferring to eat the leaves. It was estimated that utilisation of the leaves was 90%. In this study 0.75ha provided sufficient stubble turnips for 120 days for one heifer.

Recommendations

Utilisation of the crop can be improved by introducing cattle to the crop slowly, this ensures that the rumen adapts to the change in diet and the cattle become familiar with eating all of the crop. This is done by restricted access to small amounts over a period of a week to ten days, gradually building up to the area you require them to eat on a daily basis. Moving the electric fence each day will also increase utilisation as the cattle will tend to stay on the feed face.

To ensure outwintering on brassicas is successful:

- Introduce stock slowly over a week to 10 days
- Provide a grass run-back area
- Offer good-quality haylage/silage *ad lib*
- Minerals and water should also be available
- Weight record throughout the winter period to monitor performance

Further information can be found in the BRP manuals [The Home-grown Forages Directory](#) and [Using Brassicas for Better Returns](#).