



College of Agriculture, Food and Rural Enterprise (CAFRE)

Equine Weight Management Project Owners Report

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1. Introduction

The Equine Weight Management project was set up to aid owners in managing their horses at a healthy body weight (BW) and increase our understanding of the Northern Ireland equine population. On a monthly basis owners were encouraged to estimate their horses BW using an equine specific weigh tape, and to assess fat stores using the 0-5 fat score scale. The following information summarises data from all horses on the project and then provides information specific to your horse.

2. Project Summary – All Horse Data

Twenty-four horses were registered with the project from June 2016 until May 2017, with BW and fat score data provided for 17 horses. The most popular months for providing data were October (15 horse's data) followed by September and November (13 and 11 horse's data, respectively) with the number of data inputs decreasing since January 2017. To encourage more owners to provide their horses information, increased engagement with owners is required. This will be achieved with improved correspondence and more frequent updates of project outcomes.

Seasonal Body Weight Change

The yearly calendar was divided into seasons¹ to enable seasonal changes in BW to be calculated. Calculation of BW changes between seasons provides an indication of how weight fluctuates in response to grazing availability, environmental temperature and potential workloads. In contrast, the reporting of actual BW for the group would provide little useful information as every horse is a different size and build.

There was a trend for loss of BW from the beginning of the project in June 2016 until the end of the winter season in February, with the greatest changes recorded from summer to autumn (average loss of 8.5kg per horse, Table 1). Body weights were most stable during recent months as shown by the small change in weight from winter to spring. Greater awareness by owners of their horse's BW is likely to be a contributing factor to the trend for weight loss throughout the project and is a positive outcome of the project so far. It will be interesting to review the changes in BW from spring to summer when access to pasture is likely to increase for most horses and the potential for weight gain increases.

Table 1. Average seasonal change in body weight (kg) of all horses registered on the CAFRE Equine Weight Management project.

Seasonal Change	Body Weight Change (kg)
Summer to Autumn	-8.5
Autumn to Winter	-6.9
Winter to Spring	0.6

1. Summer – June, July and August
Autumn – September, October and November
Winter – December, January and February
Spring – March, April and May

Weigh Bridge versus Weigh Tape Measurements

On the 14th and 16th February 2017 actual body weight measurements were taken for 11 horses using the CAFRE mobile equine weigh bridge. At the same time as weighing the horses body weight was also estimated using the project weigh tape. The weigh tape was unable to fit around the heart girth of one horse resulting in comparison of actual and estimated body weight for ten horses (Table 2).

Weigh tapes underestimated body weight for all horses with the largest difference being 98kg for horse EQ25. The accuracy of weigh tapes is known to vary depending on the horse's size and build. Studies undertaken at CAFRE found that weigh tapes were most accurate for larger horses (above 16hh) and for Thoroughbred horses. The weigh tapes were least accurate for cob-type and smaller horses due to the tape not accounting for the stocky build and fat storage in the hindquarters and neck area. Such inaccuracies may explain the underestimates recorded when using the weigh tape. Unfortunately a recommendation to routinely add a certain amount of weight to each horse's weigh tape reading cannot be made due to potential variations in BW, and BW changes not necessarily being linear to changes in weigh tape measurements. Regardless of potential errors, equine weigh tapes continue to provide an indication of weight changes when used in conjunction with the fat scoring technique and are recommended for continued use on a monthly basis to help in maintaining horses in a healthy condition.

Table 2. Weigh bridge and weigh tape measurements of horses in February 2017.

Horse ID/Name	Visit Date	Body Weight Measurements		
		Weigh Bridge (kg)	Weigh Tape (kg)	Weigh Tape Accuracy (kg)
EQ14	16/02/2017	590	524	-66
EQ19	14/02/2017	537	503	-34
EQ25	14/02/2017	630	532	-98
EQ29	14/02/2017	501	470	-31
EQ30	14/02/2017	604	524	-80
EQ34	16/02/2017	544	490	-54
EQ48	14/02/2017	451	426	-25
Ludo	14/02/2017	630	574	-56
Pheonix	14/02/2017	534	464	-70
Misty	16/02/2017	728	*	NA
Tyson	16/02/2017	599	538	-61

*: Weigh tape unable to fit around horses heart girth

Fat Score

A fat score (FS) of 3 (on a scale of 0-5) is classed as ideal body condition, with horses having enough fat reserves to support health in times of illness without placing excess strain on joints, ligaments, tendons and the circulatory and respiratory systems. Table 3 shows encouraging results with the majority of horses involved in the project having an overall average FS 3, with a general trend for an increase in the number of horses in FS 3 and a reduction in the number of overweight horses (FS 4 and 4.5). There does however appear to be an effect of season on FS with horses gaining weight in autumn. This change may be due to the second grass growth period that takes place in late summer/early autumn or changes in management and exercise routine with more horses being stabled or ridden exercise reducing. By winter this trend reversed with more horses being classed in ideal body condition once again. The lowest overall FS reported was 1.8, rounded up to FS 2, for one horse during October 2016. Unfortunately no further results were provided for that horse so no comment can be made for its progress to a healthy weight.

The finding that no horses were reported as being FS 5 and that the overall trend was for horses to be in a healthy condition indicates that owners are aware of the importance of keeping their horses healthy and are able to use the fat score system correctly to monitor their horses.

Table 3. Percentage of horses on the CAFRE Equine Weight Management project assessed as having overall fat score of 2 to 4.5 from June 2016 until May 2017 (no horses were assessed as fat score 0, 1, 1.5 and 5).

Month	Overall Fat Score (neck, body and hindquarters average)					
	2	2.5	3	3.5	4	4.5
June	0	0	43	14	14	29
July	0	0	43	29	28	0
August	0	0	50	10	30	10
September	0	8	23	31	23	15
October	7	0	33	34	13	13
November	0	0	18	64	9	9
December	0	0	33	34	33	0
January	0	25	37	25	13	0
February	0	11	45	22	11	11
March	0	0	80	20	0	0
April	0	0	50	50	0	0
May	0	0	75	25	0	0
Trend over duration of project	↔	↑	↑	↑	↓	↓

↔: trend is stable

↑: increasing trend

↓: decreasing trend

Location of Fat Stores

A review of FS for each section of the horse's body found that FS were generally greatest in the body and back. This result supports that from a previous CAFRE study into the FS of 103 horses kept at three livery yards in Northern Ireland where it was shown that FS for the body and back section was the highest for all ages of horse from young (≤ 6 years) to geriatric (≥ 27 years) (Wood *et al.*, 2016). Such findings aid CAFRE in educating owners on what to look for when assessing horse's fat stores and how to perform the assessment correctly.

I want to thank you for being part of the CAFRE Equine Weight Management project and for providing data on a regular basis. I hope you will continue to utilise the techniques and remain on the project in the future.