

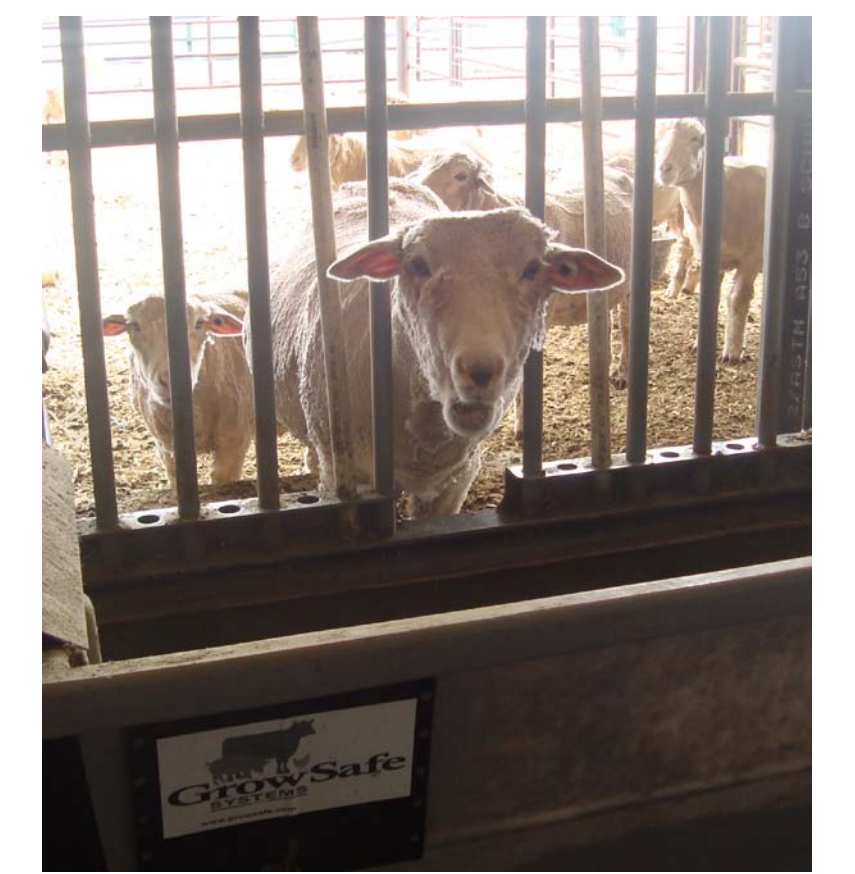
# Intake Does Not Differ Between Rambouillet Ewes Bred for High and Low Reproduction or Between Open and Pregnant Ewes



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## Abstract

Forty five years ago the Montana Agricultural Experiment Station began breeding two lines of Rambouillet sheep for and against reproductive performance. Using ultrasound and seven months of intake data, we tested conception rates between the two lines and corresponding changes in feed intake by breeding line and pregnancy status. Our results found a higher conception rate among high line ewes. However, no significant differences were observed across all periods between breeding lines or between pregnant and open ewes.

## Introduction

Nutrition and Reproduction are Two Important Components of Livestock Profitability (Hess et al., 2005).

Nutrition Affects Sheep Ovation, Embryonic and Fetal Development and the Viability of Lamb Neonates (Robinson, 1996).

Montana Agricultural Experiment Station (MAES) Have Selected Two Lines of Rambouillet For and Against Reproductive Performance.

### The objectives of this study:

Determine if Feed Intake Differs Between Rambouillet Lines.

Determine if Feed Intake Differs between Pregnant and Open Ewes.

## Methods

57 high and low line Rambouillet ewes have been housed at the Bozeman Agriculture Research and Teaching Farm since October 2012.

All ewes bred to Rambouillet rams and had the opportunity to re-breed with Suffolk rams for 18 d.

Ewes were given *ad-libitum* access to feed as shown in Table 1, water, salt and mineral.

Individual intake has been monitored using GrowSafe nodes.

Ewes were ultrasounded at 60 d to determine pregnancy status.

Days with low assigned feed disappearance (<92%) or high bunk noise (>12) were removed from the data.

Late gestation phase was analyzed until prior to shearing (March 15).

## Results

### Conception Rates

Overall conception rate was greater for high line (83%) than low line (73%) ewes.

### Maintenance Period Intake (October 6 – November 12 2012)

No significant difference between high (3.4 +/- 0.69 lbs) and low line (3.5 +/- 0.83 lbs) ewes (p = 0.62)

No significant difference between ewes that became pregnant (3.3 +/- 0.66 lbs) and those who remained open (p = 0.25)

### Breeding Period Intake (November 12 – December 18 2012)

No significant difference between high (4.6 +/- 1.06 lbs) and low line (4.8 +/- 1.42 lbs) ewes (p = 0.63)

No significant difference between ewes that became pregnant (4.6 +/- 1.2 lbs) and those who remained open (5.0 +/- 1.3 lbs; p = 0.38)

### Early Gestation Period Intake (December 18 2012 – February 5 2013)

No significant difference between high (4.8 +/- 1.18 lbs) and low line (5.3 +/- 1.37 lbs) ewes (p = 0.26)

No significant difference between pregnant (5.0 +/- 1.24 lbs) and open (5.2 +/- 1.39 lbs) ewes (p = 0.53)

### Middle Gestation Period Intake (February 5 – February 28 2013)

No significant difference between high (4.6 +/- 1.09 lbs) and low line (4.6 +/- 1.14 lbs) ewes (p = 0.78)

No significant difference between pregnant (4.5 +/- 1.06 lbs) and open (4.7 +/- 1.29 lbs) ewes (p = 0.63)

### Late Gestation Period Intake (February 28 – March 14 2013)

No significant difference between high (5.7 +/- 1.05 lbs) and low line (5.9 +/- 0.94 lbs) ewes (p = 0.48)

No significant difference between pregnant (5.9 +/- 1.04 lbs) and open (6.0 +/- 1.03 lbs) ewes (p = 0.79).

## Summary/Conclusions

Rambouillet Ewes Selected for Reproductive Performance Had a Higher Overall Conception Rate

Selection For or Against Reproductive Performance Has Not Altered Ewe Intake During Maintenance, Breeding, or Gestational Periods.

Pregnant and Open Ewes Given *Ad-libitum* Access to Feed Do Not Have Differing Intakes During Maintenance, Breeding, or the Pregnant Ewes Gestational Periods.

## References

Hess, B.W., S.L. Lake, E.J. Scholljegerdes, T.R. Weston, V. Nayigihugu, J.D.C. Molle, and G.E. Moss. 2005. Nutritional controls of beef cow reproduction. *J. Anim. Sci.* 83: E90-106.

Robinson, J.J. 1996. Nutrition and Reproduction. *Anim. Reprod. Sci.* 42: 25-34

## Acknowledgements

This study was generously funded by the Montana Agriculture Experiment Station, EPSCoR and the MSU VP for Research.

Table 1 Feeding Periods

GrowSafe Period	Feed
Maintenance	Chopped Grass Hay
Breeding	Alfalfa Hay
Early Gestation	Alfalfa Hay
Middle Gestation	Alfalfa Hay
Late Gestation	Alfalfa/Barley/Molasses Pellets

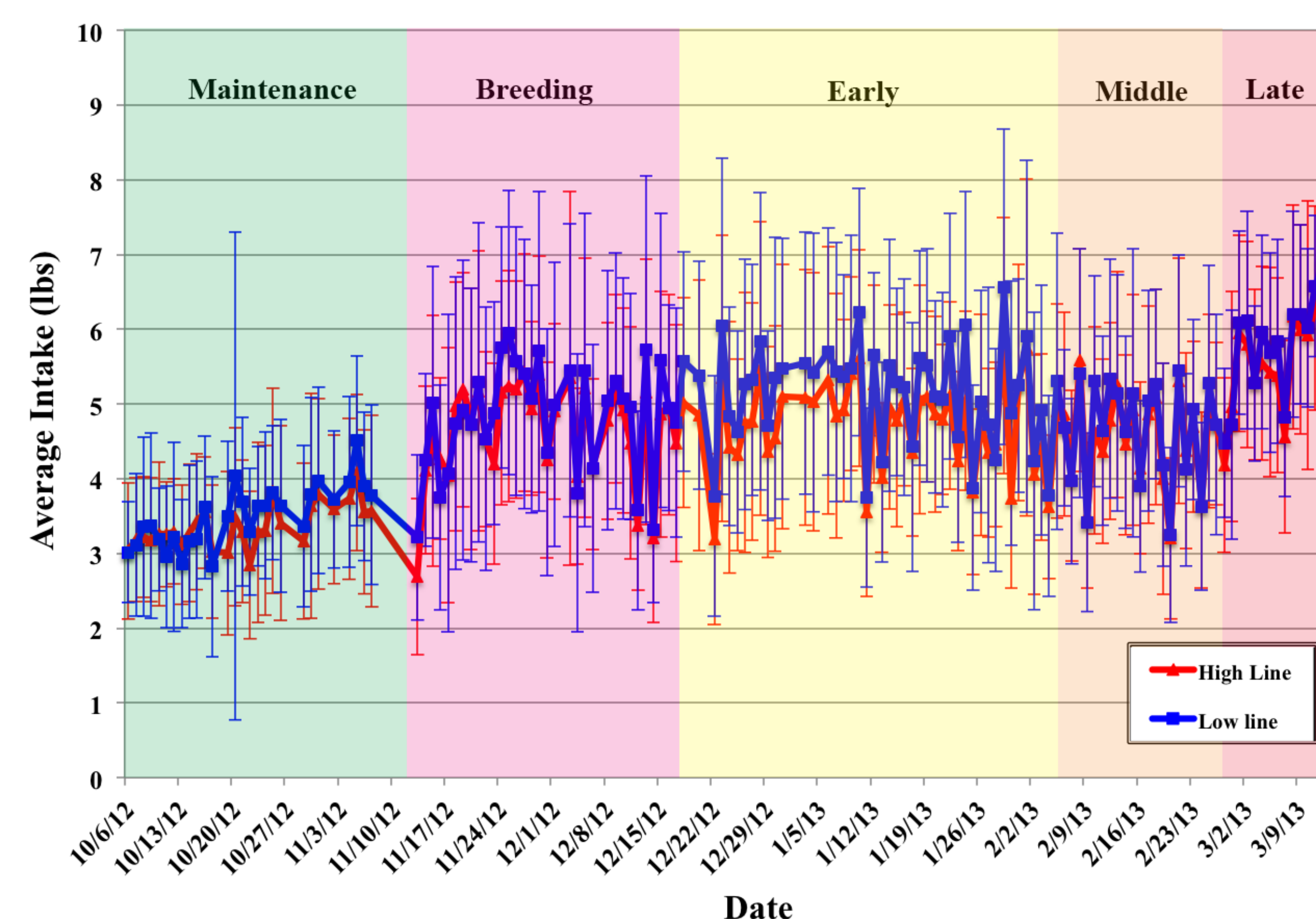


Figure 1 Intake of Ewes Selected for High and Low Reproduction

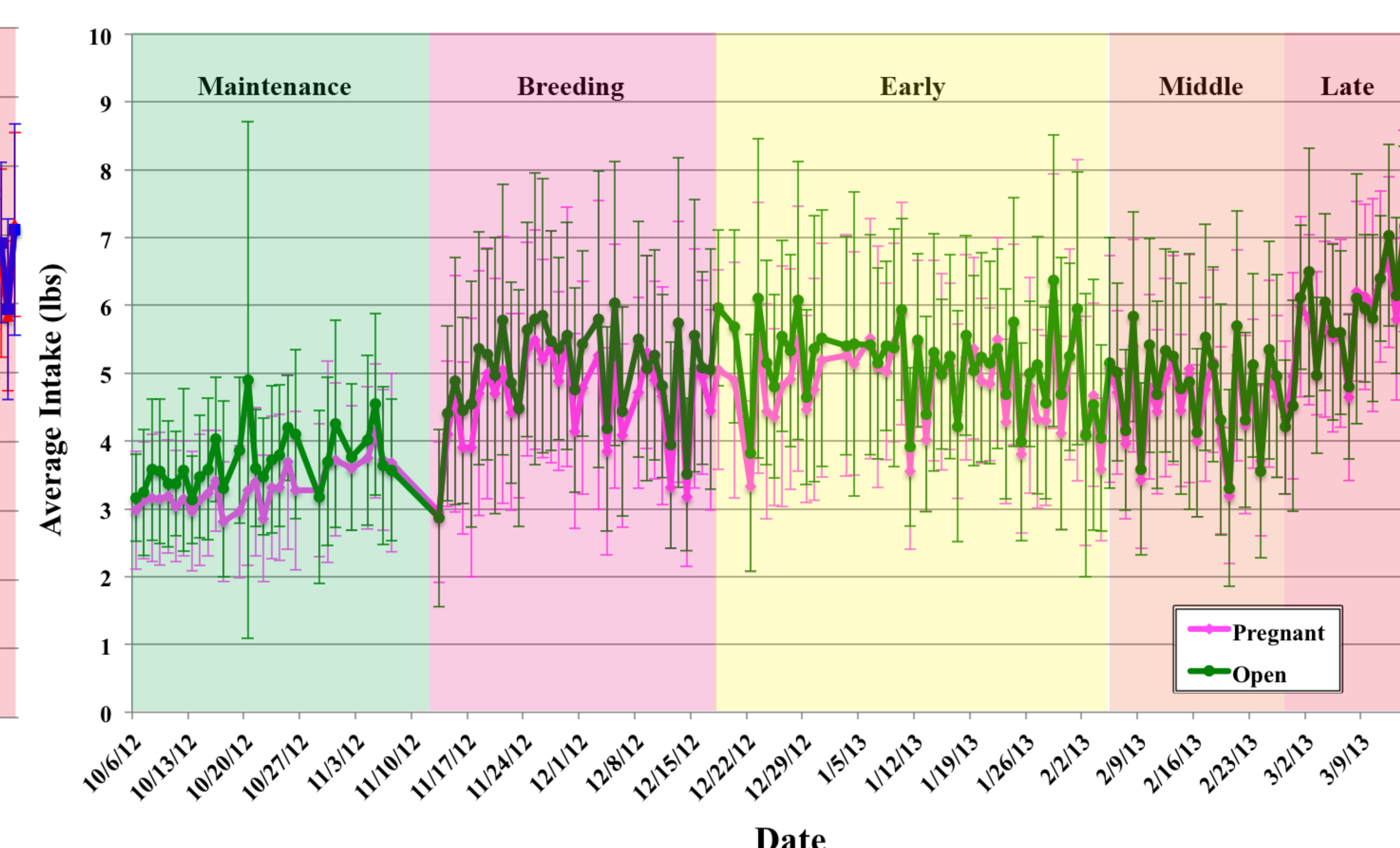


Figure 2 Intake of Open and Pregnant Ewes