

# Investigation on milk production and composition during early lactation in Hanwoo cows

Xaysana Panyavong<sup>1</sup>, Deok Hwangbo<sup>2</sup>, Nayeon Kim<sup>3</sup>, Seongjin Kim<sup>3</sup>, Viengsakoun Napasirth<sup>4</sup>, Kyoung Hoon Kim<sup>1,5</sup>

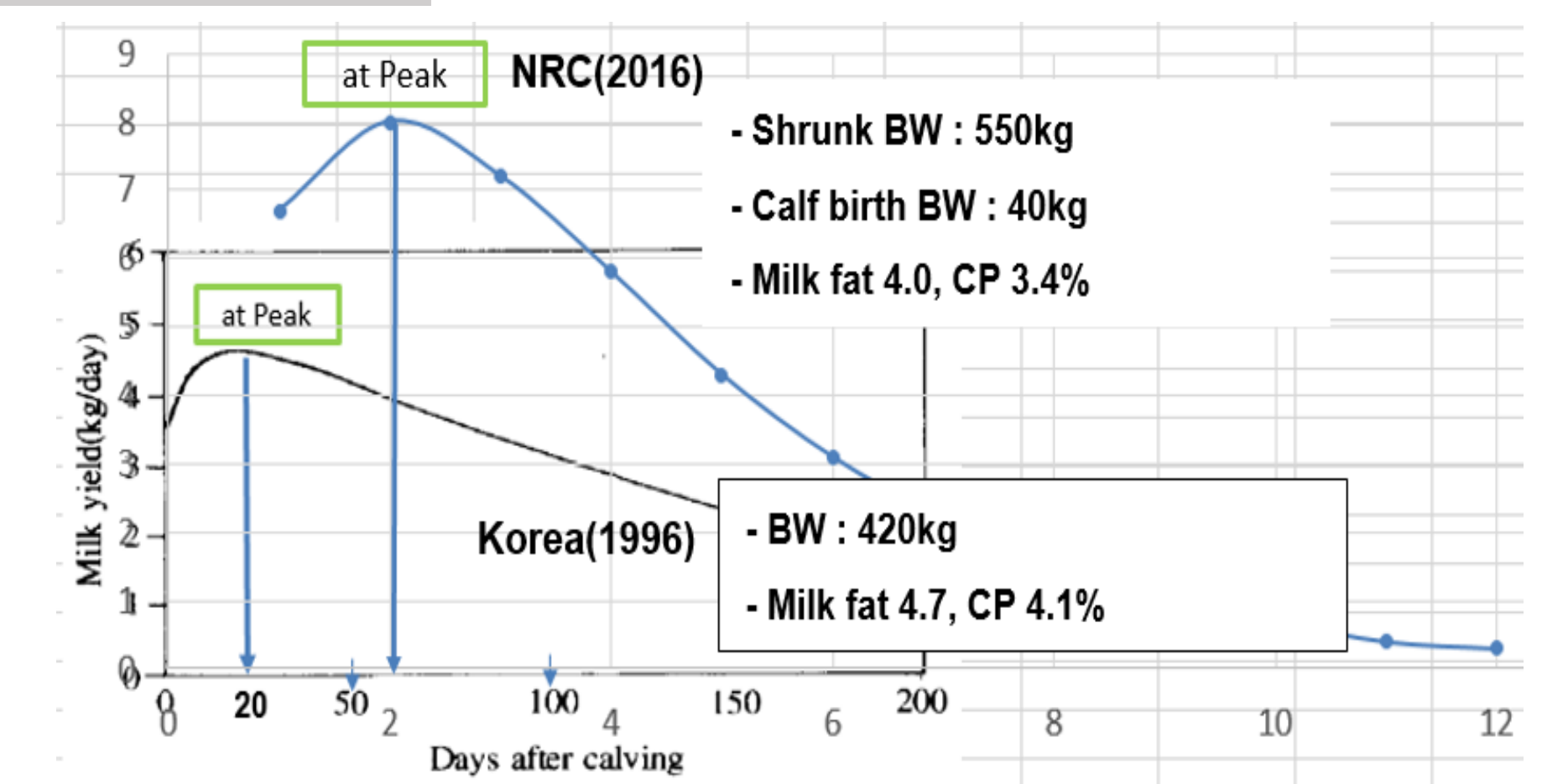
<sup>1</sup>Graduate School of International Agriculture Technology, SNU, Korea; <sup>2</sup>Department of Animal Science & Biotechnology, GNtech, Korea <sup>3</sup>Asian Pacific Ruminant Institute, Korea; <sup>4</sup>Faculty of Agriculture, NUOL, Laos; <sup>5</sup>Institute of Green Bio Science & Technology, SNU, Korea  
(E-mail: khkim@snu.ac.kr)

## Introduction

The milk production and composition are important to the calculation of energy and protein requirements. Since 2000, however, the milk production and composition in Hanwoo breeding cows has not been investigated. This is why 20 years old data have been used to estimate nutrients requirements for Hanwoo lactating cows in Korean feeding standard 2017. This is the interim report on milk production and composition conducted with 11 post-calving Hanwoo cows.

## Materials and Methods

- Eleven post-calving Hanwoo cows were used to collect data on milking production.
- Calvings occurred during March to June 2020. The calf is separated from its dam immediately after birth and can be fed milk replacer from automatic feeder in individual pen.
- Milk production was estimated by weighting milk collected with machine milking two times (9 a.m. and 5 p.m.) per day.
- Cows were fed TMR once a day, consisting of (as fed basis) 35% IRG hay, 35% Pineapple by-product, 12% Soy-sprout, 6% Commercial concentrate base, 6% Barley brewers Gain (wet), 6% Cotton seed.
- Protein, lactose, fat and solids-not fat in samples of milk at each milking were determined by Fourier transform infrared technology (MilkoScan FT)



## Results

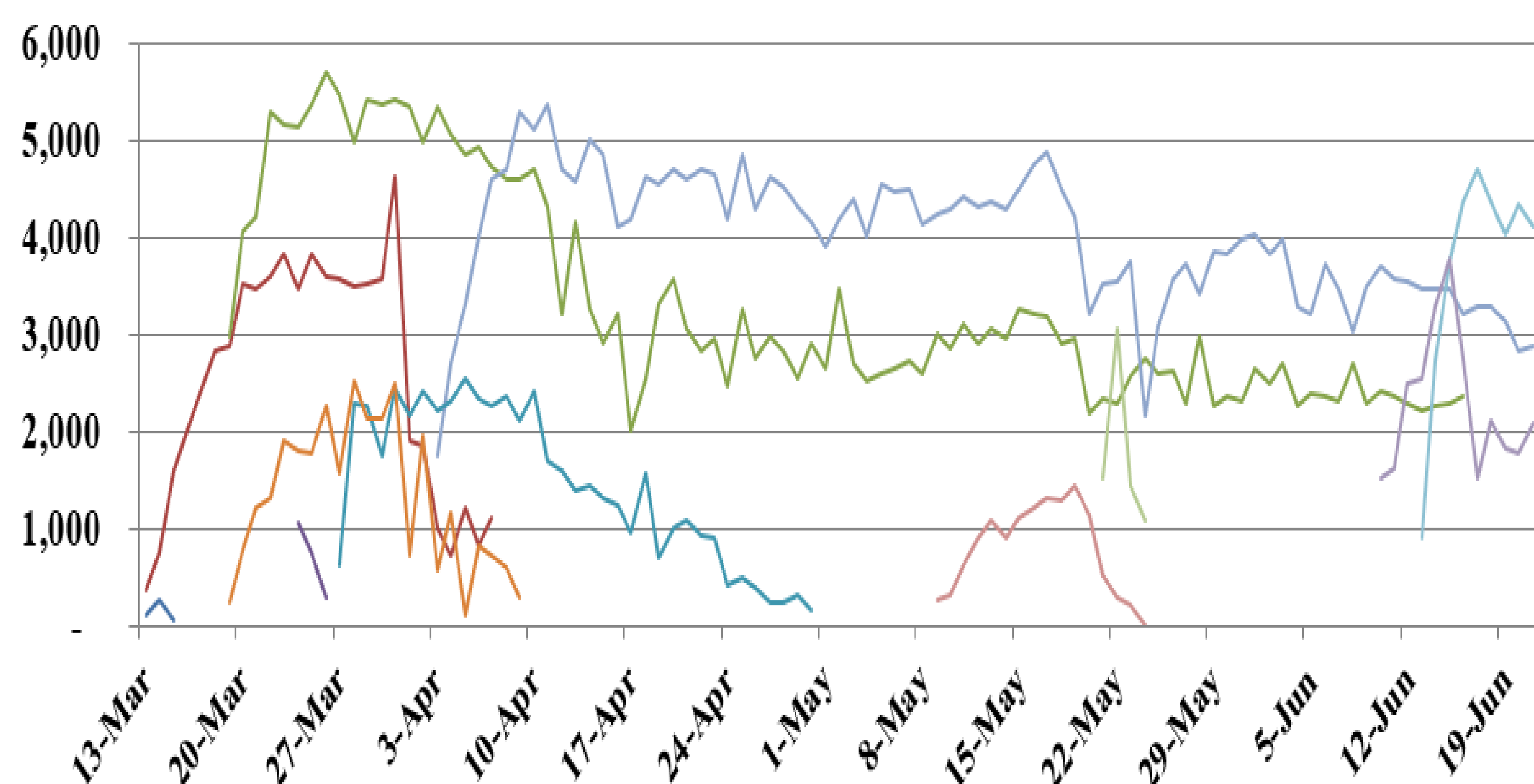


Figure 1. Milk production curves from 2<sup>nd</sup> (n=5) and 4<sup>th</sup> parity (n=6) Hanwoo cows from March to June 2020.

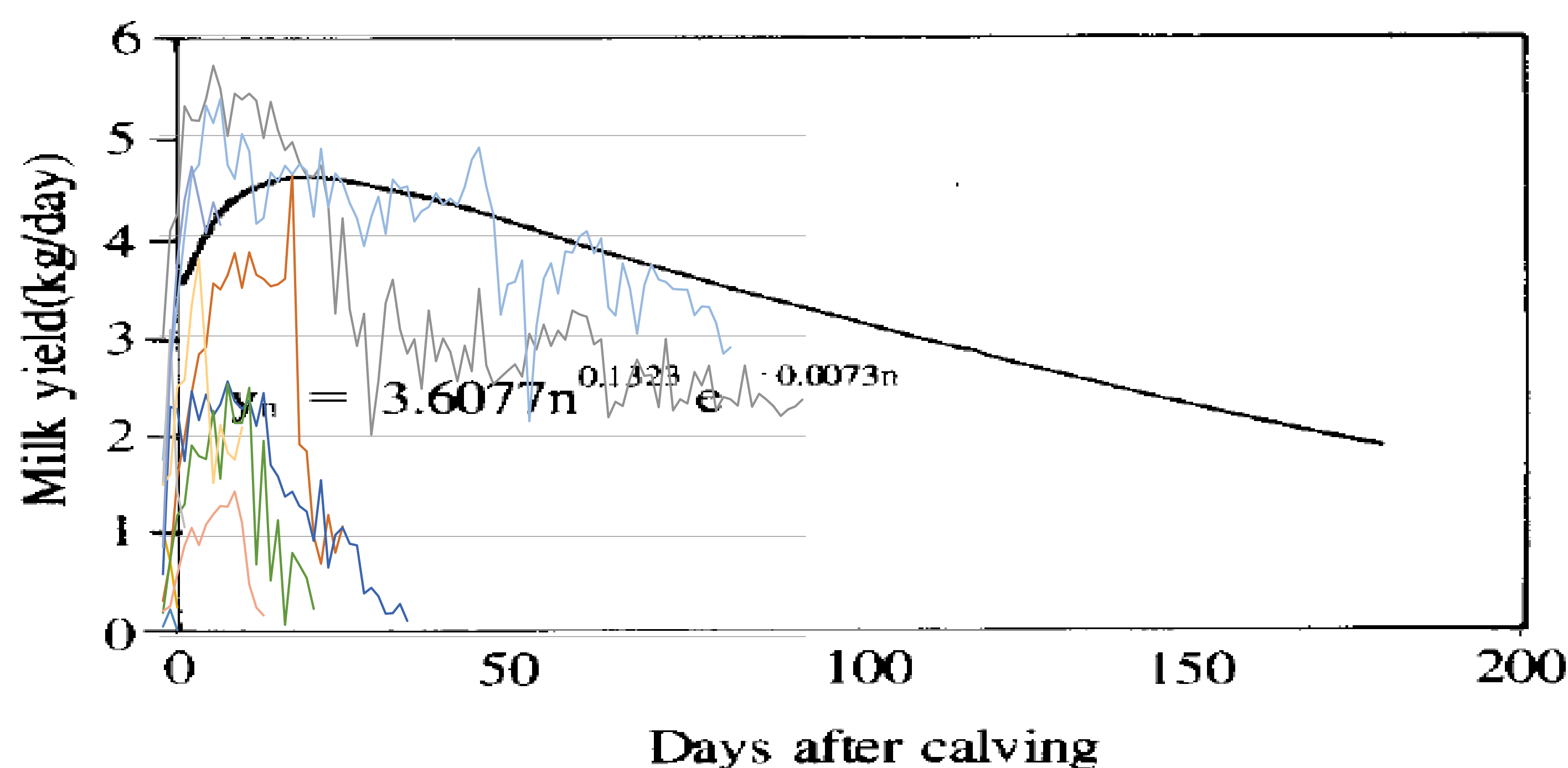


Figure 2. Comparison of milk production curves of current data with that performed in 1996.

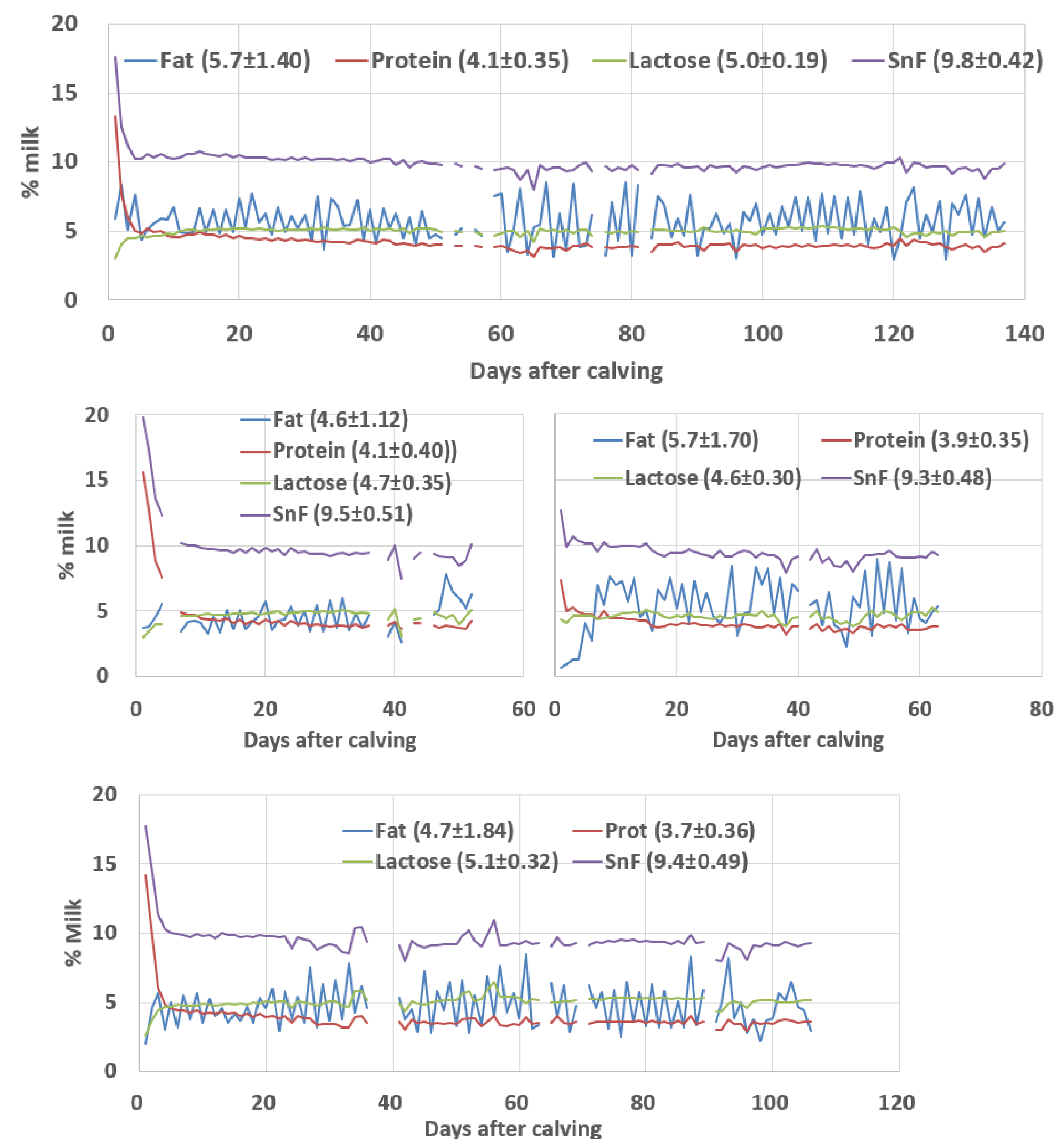
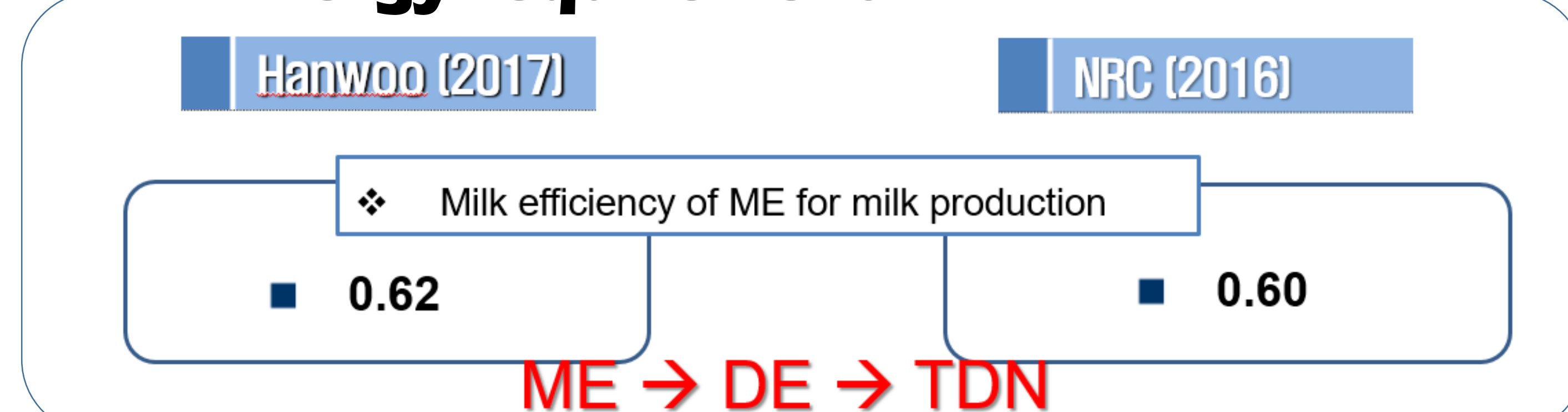


Figure 3. Mean values (±SD) and changes in milk composition of four Hanwoo cows.

## Conclusion

This investigation will be continued because it is important to calculate energy and protein requirements for beef cow and calf before weaning even though the assessment of milk production in the beef cow is difficult.

### ❖ Energy requirement



### ❖ Protein requirement

