

SOURCE OF SE SUPPLEMENTATION AFFECTS MILK AND BLOOD SERUM SE CONCENTRATIONS IN DAIRY CATTLE

L Vandaele¹, B Ampe¹, S Wittocx², L Segers², M Rovers², A van der Aa³, S. De Smet⁴,
G du Laing⁴, S De Campeneere¹

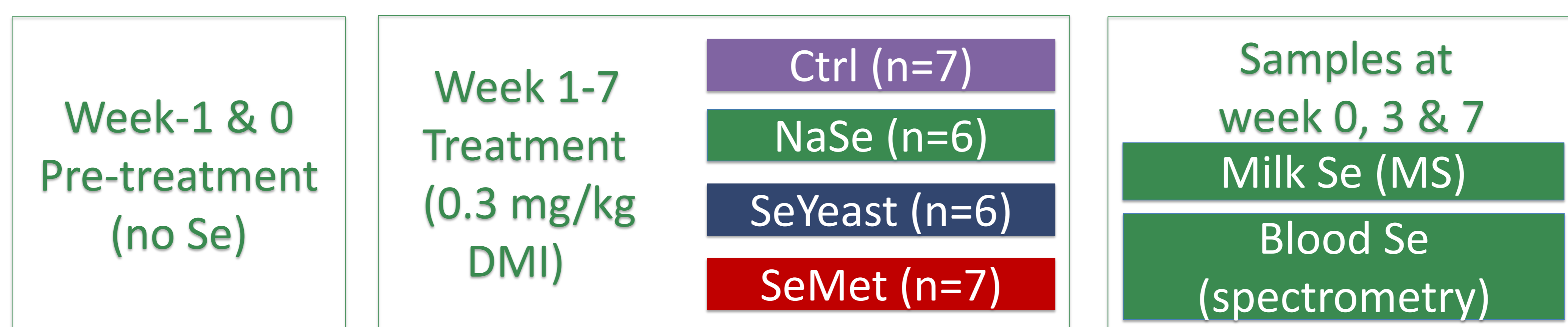
¹ ILVO, Melle Belgium – ² Orffa Additives BV, Werkendam, The Netherlands – ³ Excentials BV, Werkendam, The Netherlands –
⁴ Ghent University, Gent, Belgium

INTRODUCTION

Adequate **Selenium (Se) levels** are beneficial for dairy cattle health and fertility. Since many regions in the world have soils with low Se content, **supplementation** of this trace element is very often warranted. The aim of the present study was to **evaluate three different Se sources**: sodium selenite (NaSe), selenium-yeast (SeYeast, product name Selplex) and L-selenomethionine (SeMet,, Product name Excential Selenium₄₀₀₀, Orffa) in their potential to achieve adequate **blood and milk Se levels** in comparison with controle (Ctrl)

MATERIALS & METHODS

Feeding trial with 26 high producing Holstein Friesian cows. Diet: maize silage, prewilted grass silage and rapeseed/soybean meal ad libitum, a balanced concentrate based on individual needs. Se sources were mixed in the rapeseed/soybean meal and in the balanced concentrate to achieve **0.3 mg Se supplementation per kg dry matter intake (DMI)**



Within week, blood serum and milk Se data were analysed with a general linear model (GLM in Statistica , version11). A longitudinal model (Proc MIXED in SAS) was used to model the longitudinal nature of Se data over the trial weeks.

RESULTS

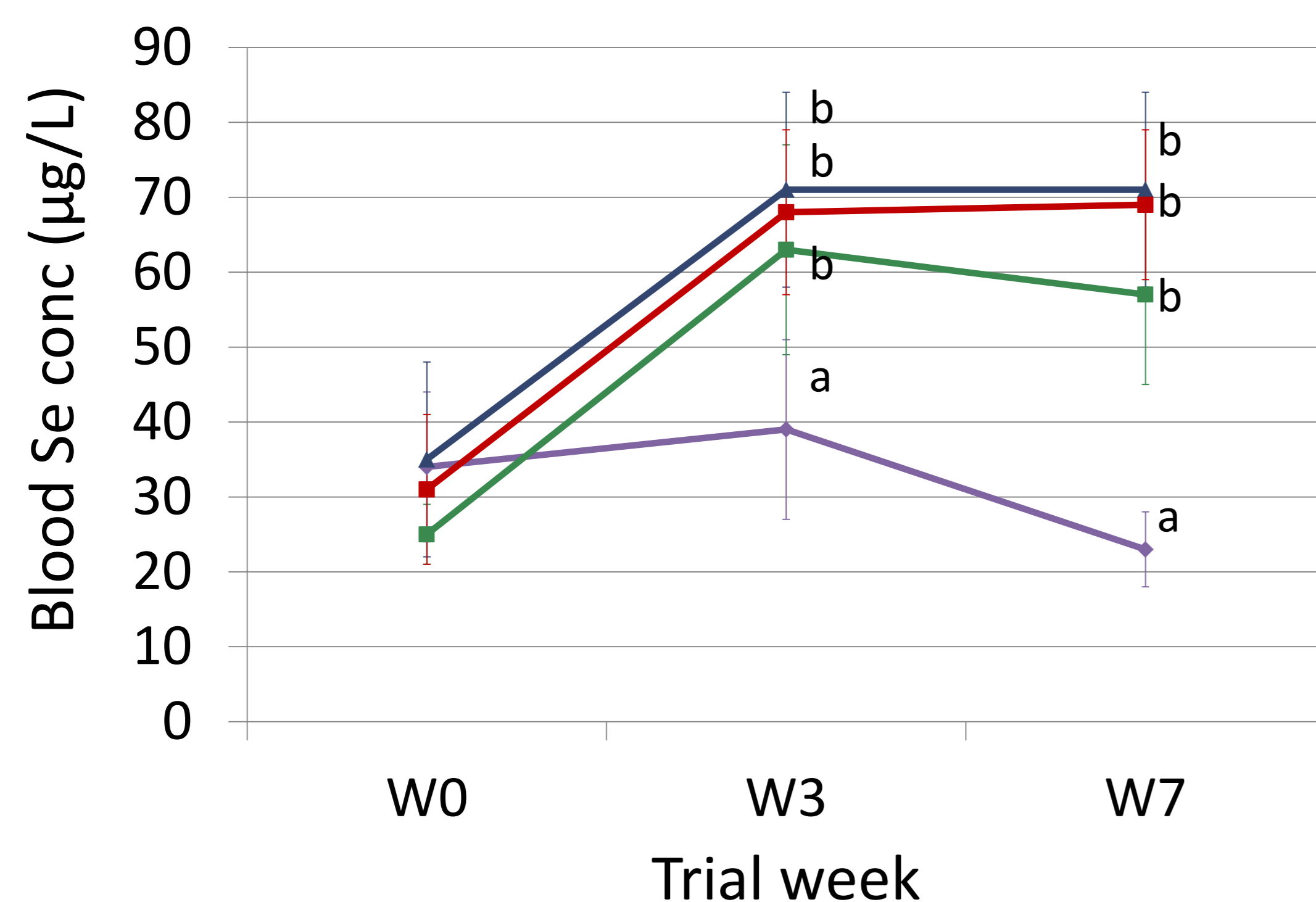


Fig 1. Blood Se content at W0, W3 and W7

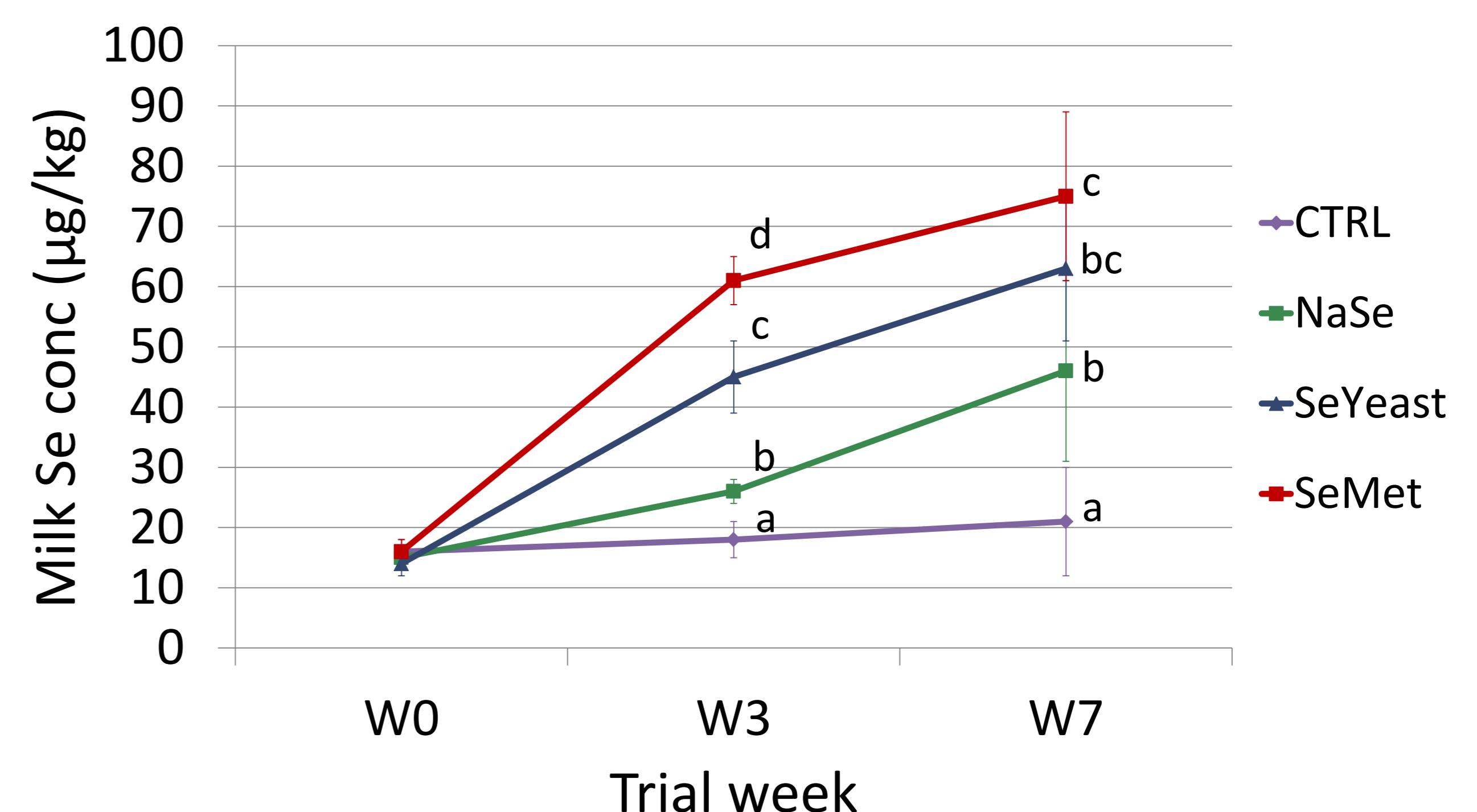


Fig 2. Milk Se content at W0, W3 and W7

- The DMI and milk production were not significantly affected by treatment.
- The increase in blood serum Se levels is not significantly different between sources (Fig 1), whereas the increase in milk Se concentration is clearly affected by type of Se source (Fig 2).
- Organic sources (SeMet and SeYeast) result in higher milk Se levels in comparison with inorganic NaSe.
- Within the organic Se sources, the amount of Se in the form of selenomethionine (estimated at 63% and 100% for SeYeast and SeMet, respectively) is the determining factor in the increase and the absolute level of Se in the milk.

CONCLUSIONS

- Adequate blood levels are reached with all three Se sources within three weeks of supplementation.
- Not the absolute concentration of Se, but rather the amount of Se given as selenomethionine is driving the milk Se levels in high producing dairy cattle.