

Amino Acid profile evaluation on Argentinean on farm sampled soybean

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Background: Soybean (*Glycine max* (L.) Merr.) is the most important crop in Argentina, while soybean meal (SBM) represents the main national exportation income. SBM is a relevant source of protein and amino acids (AA) for feed worldwide. Particularly, SBM's Key AA (%) represents a relevant tool for feedstuffs international marketing, which is defined by the sum of *Methionine, Cysteine, Tryptophan, Lysine* and *Threonine*.

Objectives: Explore the national distribution of soybean composition (protein, oil and PROFAT content) and AA around the productive regions.

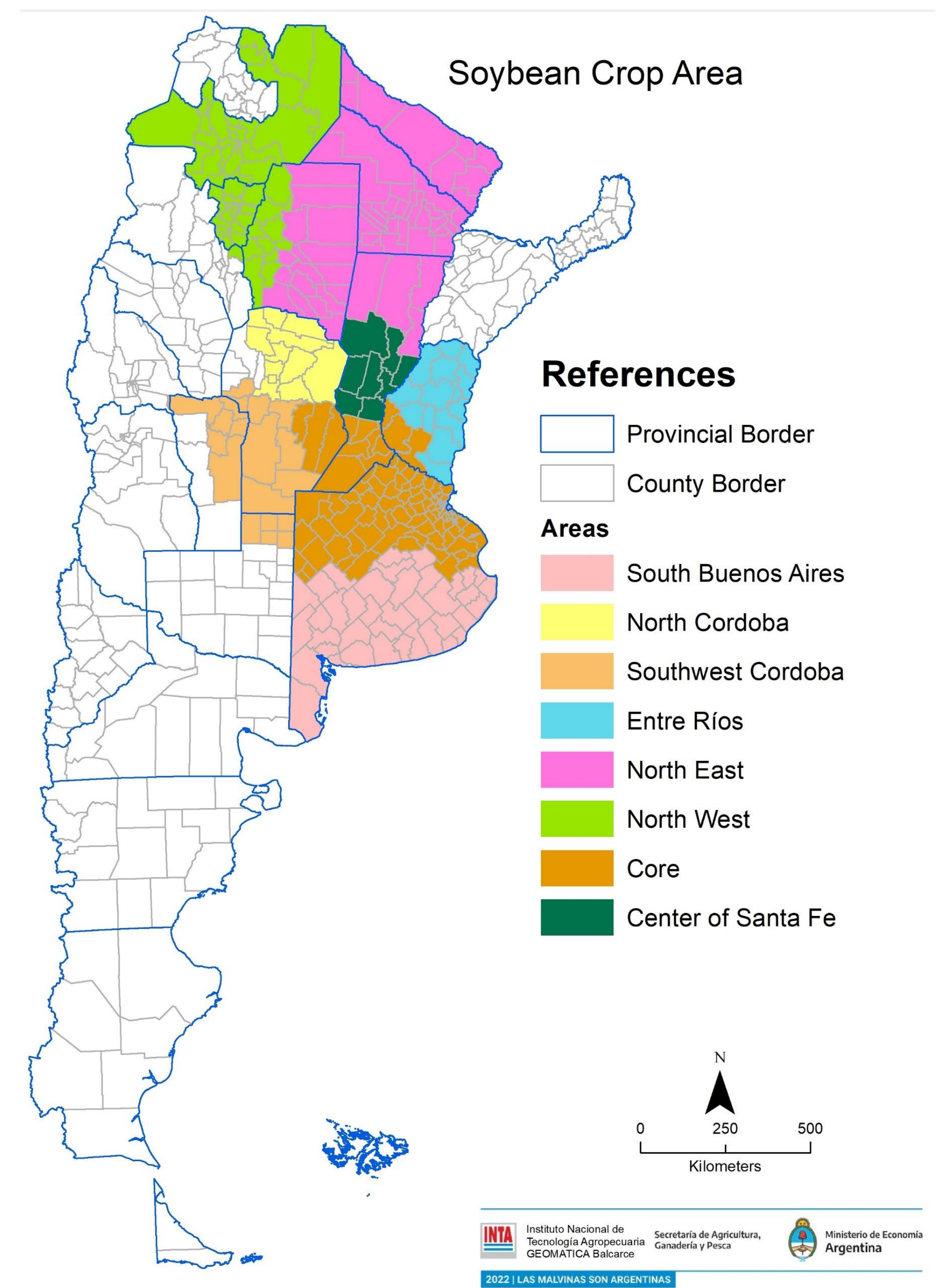


Fig 1. Argentine cropping areas

Materials and Methods: Grain on-farm samples (n=544) from eight homogenous Argentine cropping areas (Fig. 1), were analyzed to assess their protein (% db), oil (% db), and PROFAT. AAs profile was determined from a subsample (n=100). Both a near infrared spectroscopy (NIR) device and HPLC Ms/tQ methods were used.

Results: Quality mean values of total samples were 36.6 % (db) of protein, 23.0 % (db) of oil and 59.6 % (db) of PROFAT. Essential AA, non-essential AA and Key AA (%) mean values from the subsample were 41.18 %, 58.82 % and 14.36 %, respectively. Key AA (%) composition is detailed in Fig. 2. In Fig. 3, Key AA location is presented for Core Area. Remarkably, we found no relationship (p=0.95) between Lysine (%) and protein (% db).

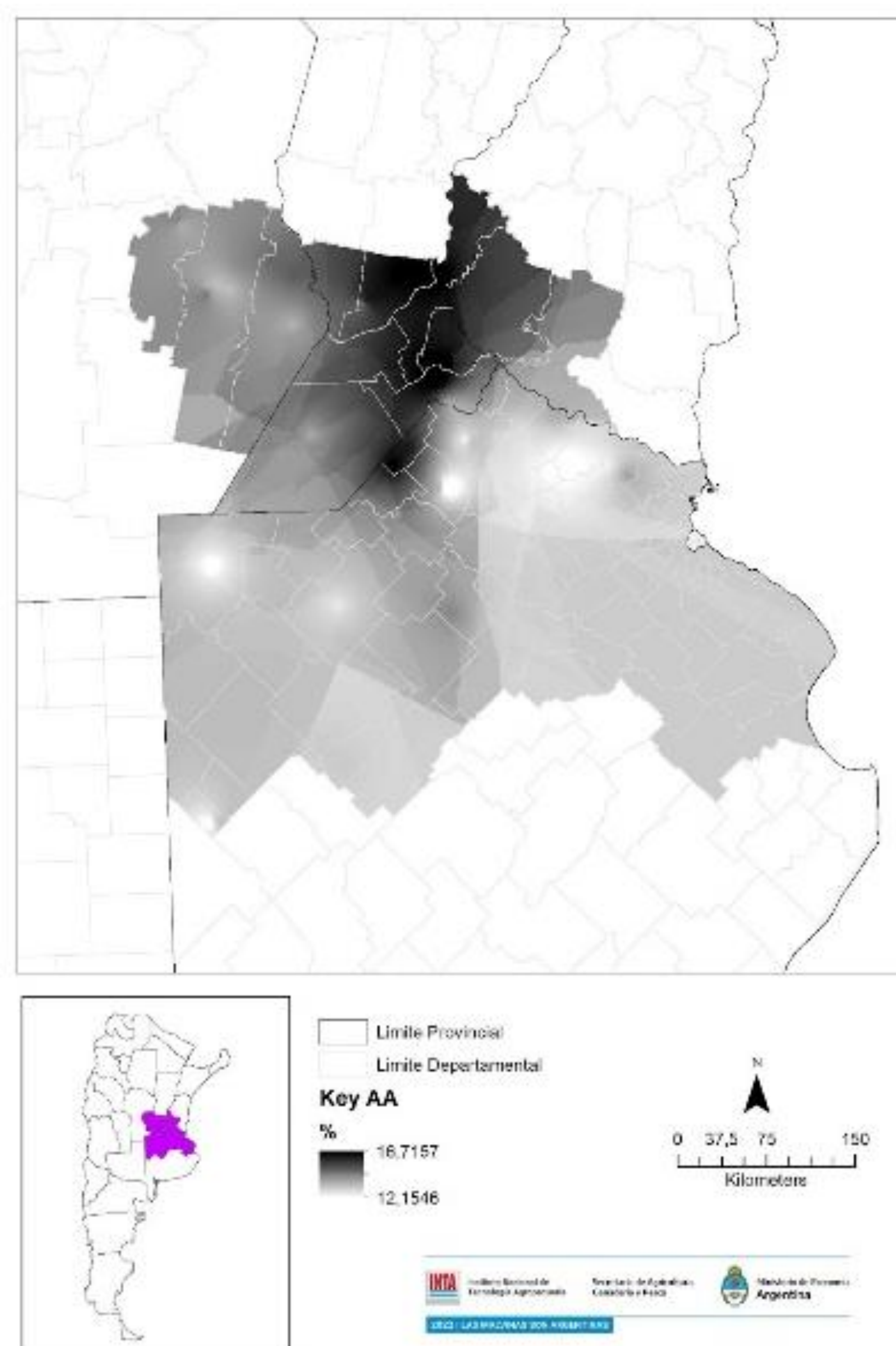


Fig 3. KAA Spatial distribution

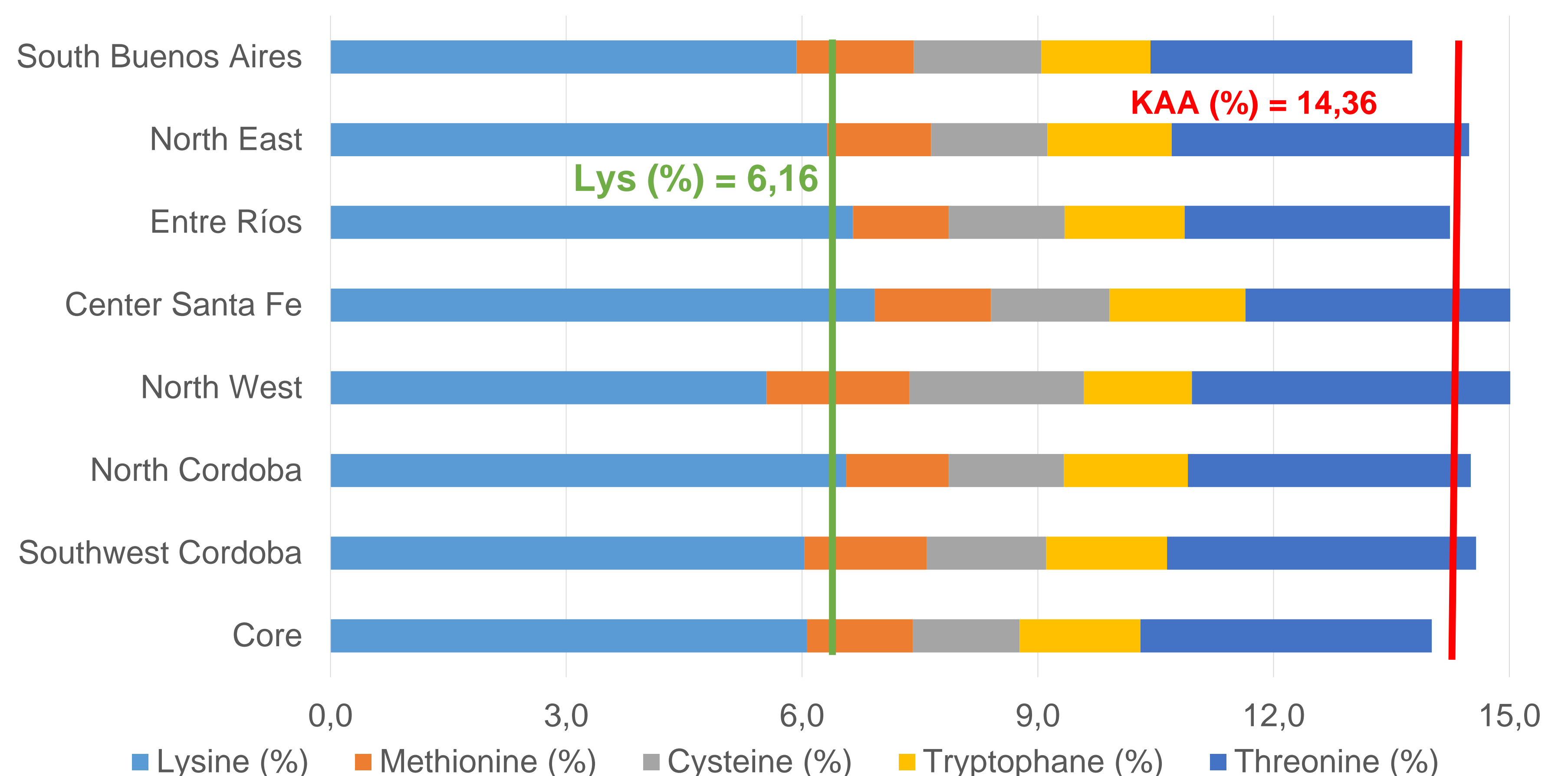


Fig 2. KAA composition in the different areas

Conclusions: This first approach of the study indicated that Argentinean soybean composition, KAA and Lysine mean values were similar to those presented in international SBM reports and they varied between the different evaluated areas.