

Antimicrobial use in Belgian livestock

A review, data comparison and extrapolation attempt to national level

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Background Information

- It is crucial to measure and monitor the levels of antimicrobial (AM) use in animals, given the risks associated with antimicrobial resistance and the EU requirements (ESVAC project).
- Belgium holds the 6th position in the sales of AM in the EU (EMA, 2013) → HIGH! Despite a 7.2% decrease between 2011-2012 (BelVet-SAC, 2012).

-AIM: (1) COLLECT & COMPARE recent AM use data in Belgium per sector, i.e. broilers, pigs, veal calves
(2) EXTRAPOLATE farm-level data to national-level data

Methodology

- Data used: Persoons et al., 2012 (broilers); Callens et al., 2012 (pigs); Pardon et al., 2012 (veal calves)

- (1) Unit of measurement for AM use: **Treatment Incidence (TI)**, i.e. the number of animals per 1000 treated with one defined daily dose animal (TI_{DDDA}) or one used daily dose animal (TI_{UDDA}), calculated as :

TI_{DDDA} or $TI_{UDDA} = [\text{total amount of AM drug administered (mg)}] / [\text{DDDA or UDDA (mg/kg)} \times \text{number of days at risk} \times \text{kg of animal}] \times 1000$ (Timmerman et al., 2006).

- (2) Extrapolation made according to the **ESVAC methodology (2013)**:

$[\text{Amount of AM drugs administered nationally (tons)}] = (\text{amount of AM used in the studied population}) \times [(\text{whole national population}) / (\text{studied population})]$

Results

(1) Treatment Incidence based on UDDA and DDDA in Belgian broilers, pigs and veal calves

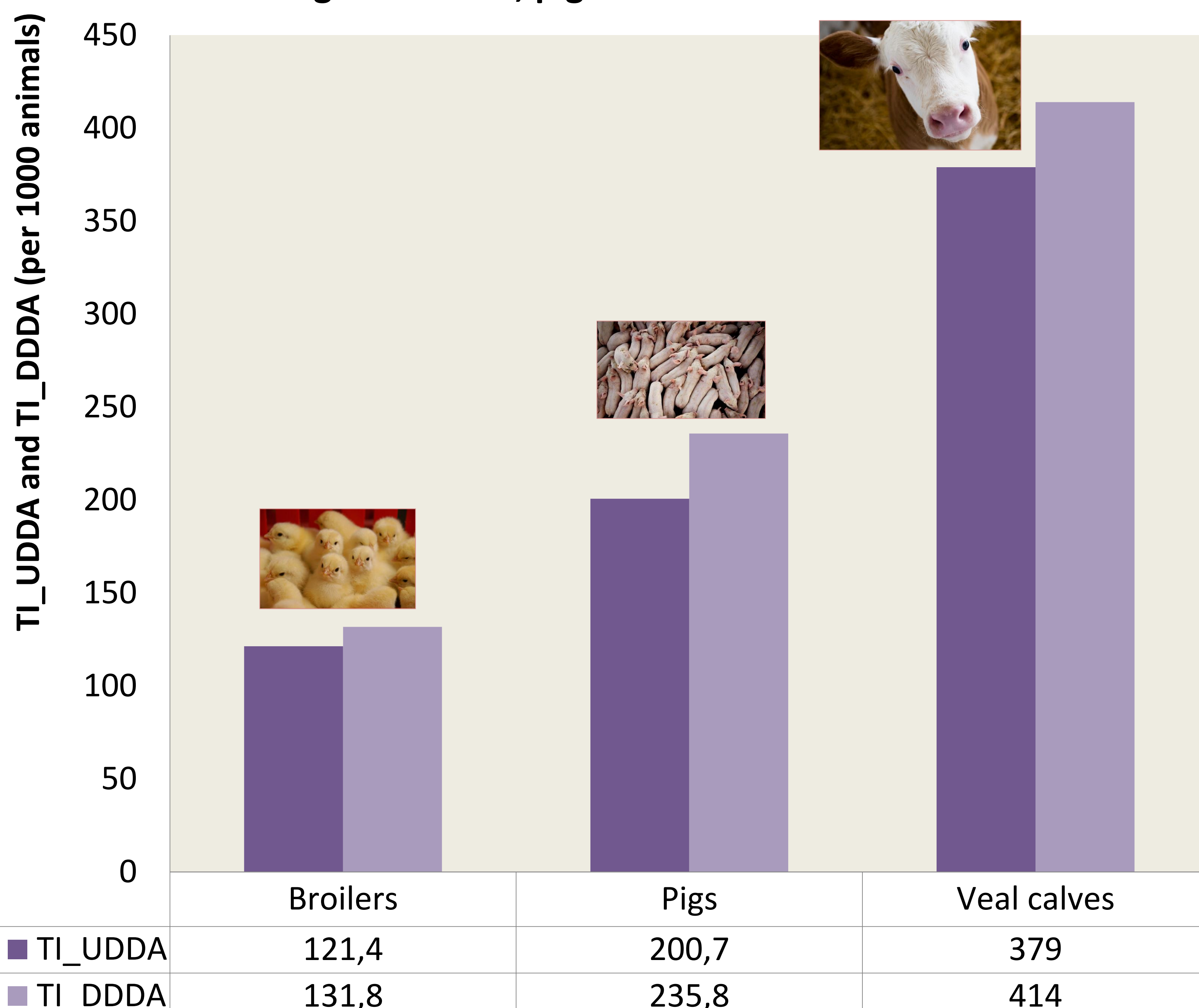


Fig.1. Comparison of the Treatment Incidences among Belgian broilers, pigs and veal calves. The data were collected in different years during the period 2007-2012, but the use of TI as unit of measurement for AM use allows for this general comparison.

(2) Extrapolation attempt of the amount of veterinary antimicrobials consumed by the Belgian pig, broiler and veal calf population (in tons)

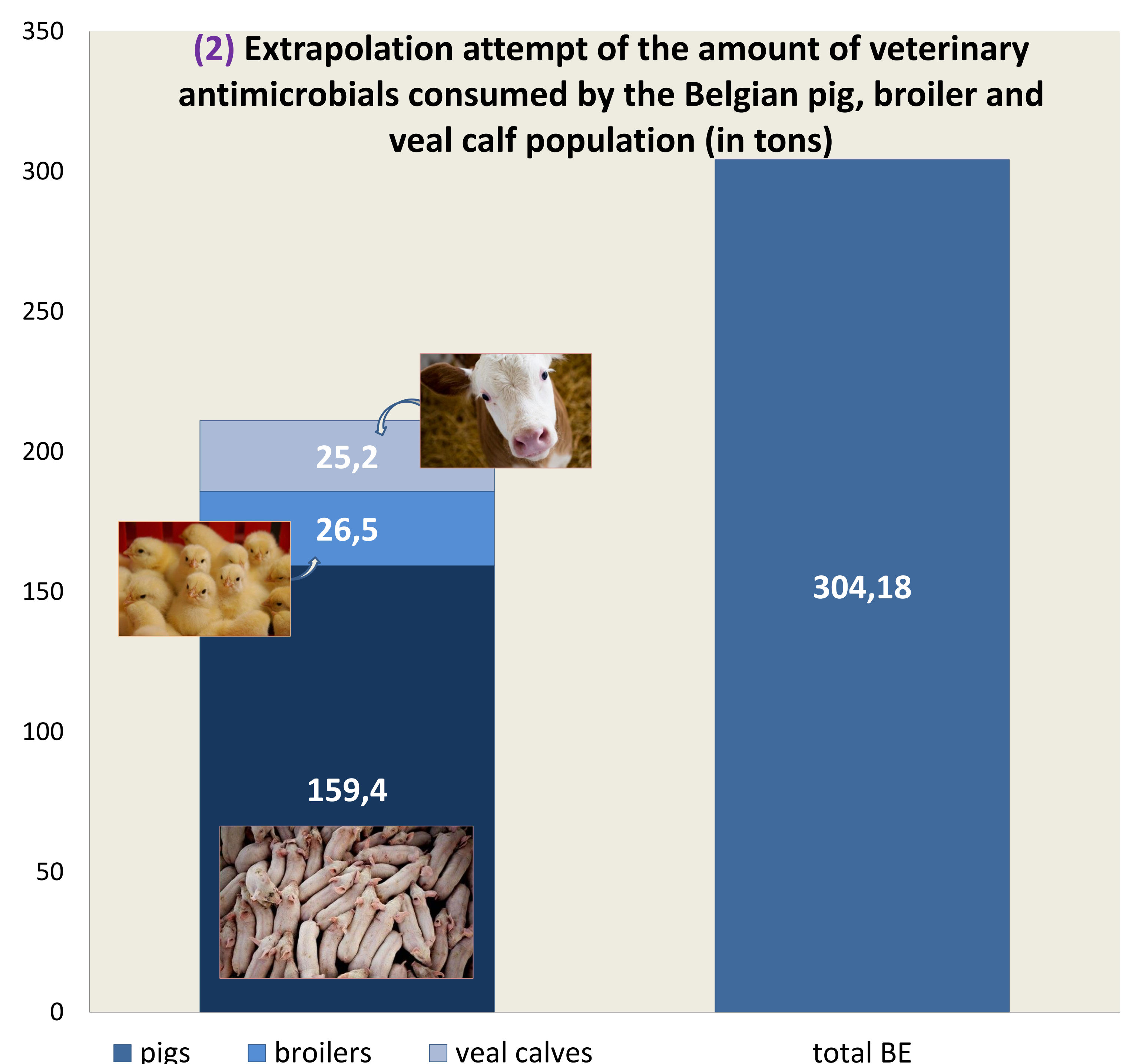


Fig.2. Left column: estimated amount of AM used in Belgian broilers, calves, pigs after extrapolation of farm-level data from selected studies; Right column: total amount of AM and medicated premixes used in BE in 2009 (almost equal to '08, '10 & '11) (BelVet-SAC, 2012); The difference between the columns mainly reflects the lack of species-specific data for horses, small ruminants, cattle, layers, companion animals.

Conclusions

- Among broilers, pigs and veal calves: **veal calves** are treated **more frequently** with AM (1) but in absolute values **most AM are consumed by pigs** at a **national level** (2)
- **TI**: methodologically, a **practical** quantification unit of AM use, allowing for **comparisons** between different sectors, countries, etc.
- Even though the extrapolation estimates might be quite rough due to limited data available, it is **important to attempt extrapolate** farm-level data from a representative sample of farms, in order to provide estimates on AM sales and consumption **for the actual species** and better **target the efforts to reduce AM usage** at national and EU level