

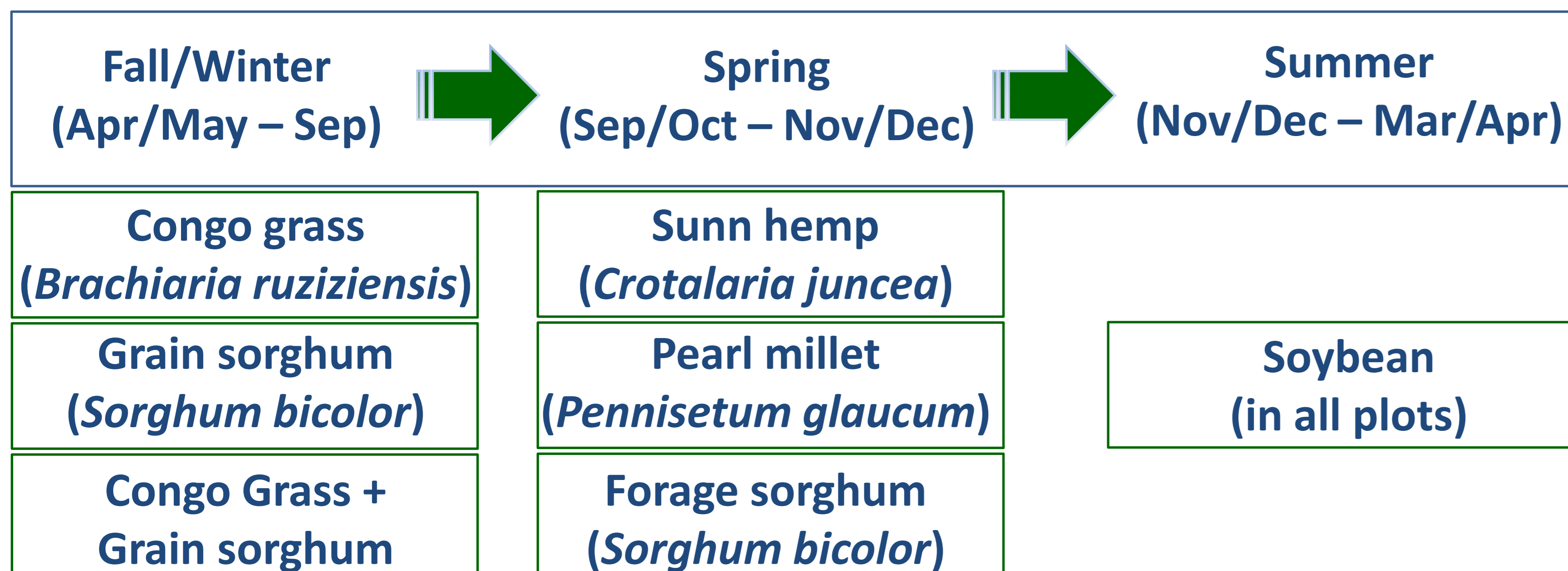
## INTRODUCTION

- ✓ Nitrogen (N) as NH<sub>3</sub> might be emitted from plant leaves and straw in decomposition.
- ✓ There is no much information about the magnitude of this process, mainly in tropical conditions.
- ✓ Obtaining such information would contribute to a better understanding of the dynamics of N.

➤ We aimed to quantify the NH<sub>3</sub>-N emission from leaves and straw of a cropping system under long-term no-till in Brazil.

## MATERIAL AND METHODS

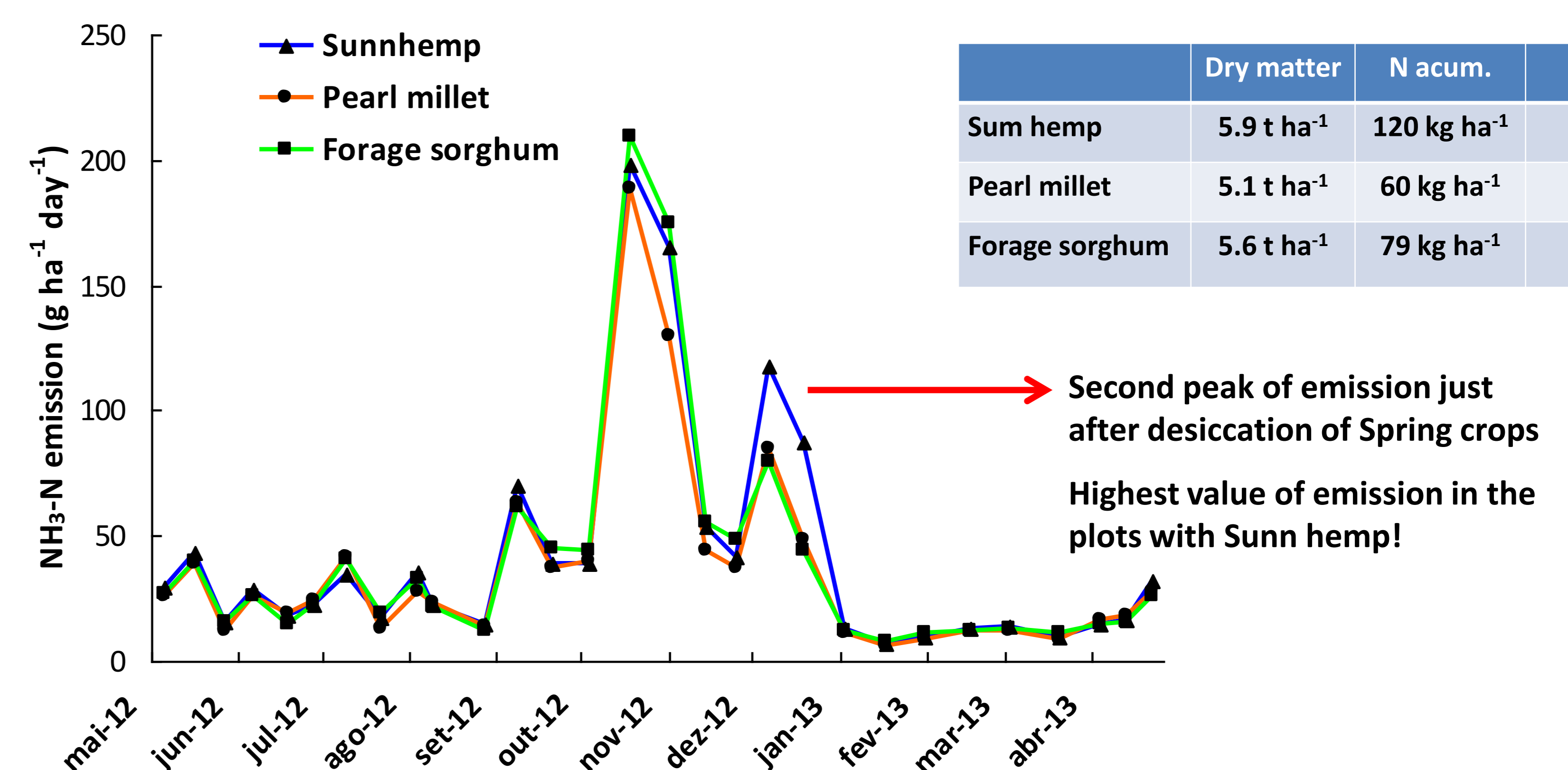
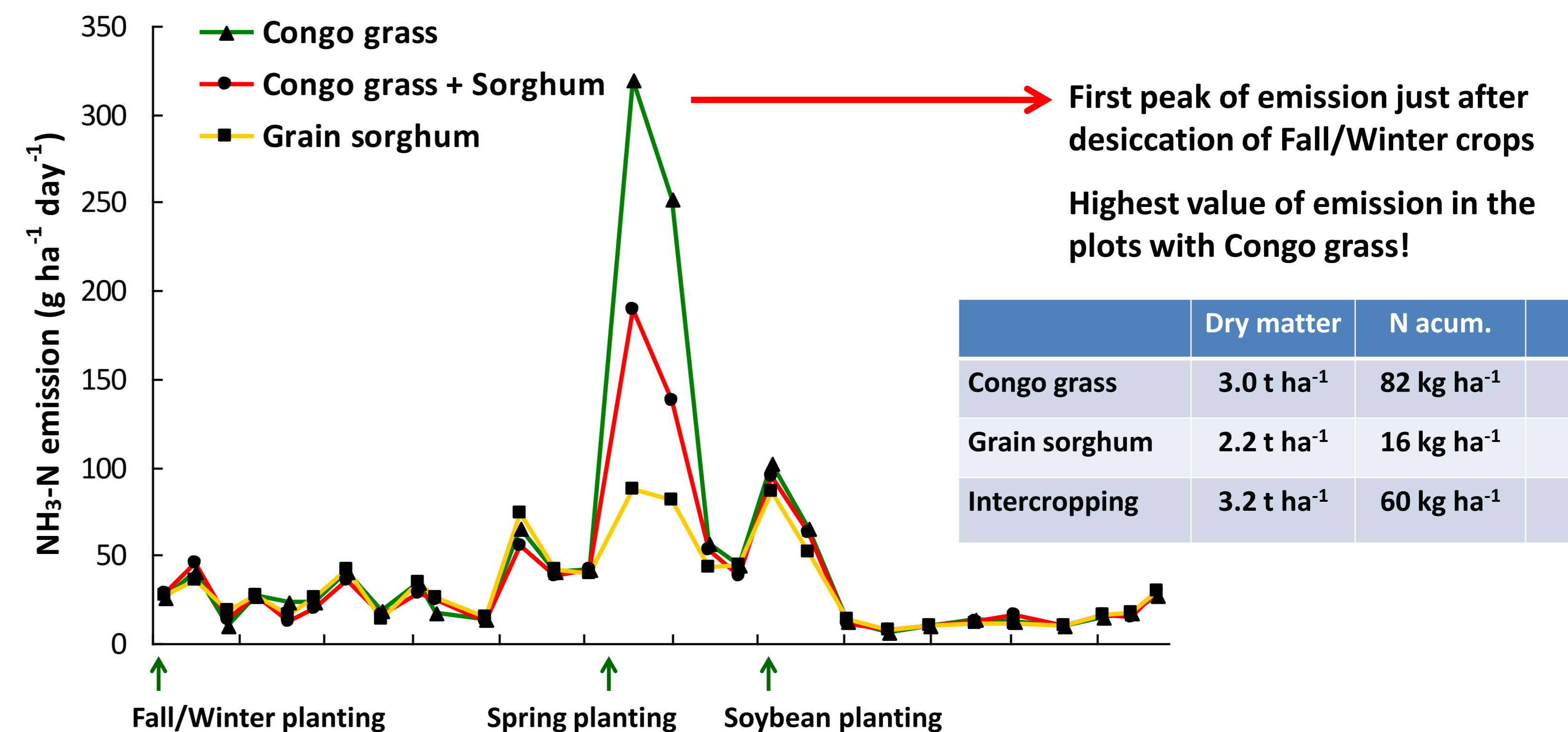
- ✓ Location: Botucatu, SP, Brazil
- ✓ Experiment has been conducted since 2006
- ✓ Treatments: nine crop rotations under no-till (three crops per year and there is no N supplied)



- ✓ Measurement: NH<sub>3</sub>-N emission from plant leaves and straw (continuously throughout a year – May 2012 to April 2013)
- ✓ NH<sub>3</sub>-N sampler
  - ✓ Foam soaked with a solution of glycerin and phosphoric acid and surrounded by a layer of tape
  - ✓ Placed 2 cm above the canopy and switched every 12 days



## RESULTS



Fall/Winter Season	Spring Season	NH <sub>3</sub> -N emission (total)
		kg ha <sup>-1</sup> year <sup>-1</sup>
Congo grass	Sunn hemp	18.8
Congo grass	Pearl millet	15.6
Congo grass	Forage sorghum	18.3
Congo grass + Forage sorghum	Sunn hemp	14.8
Congo grass + Forage sorghum	Pearl millet	13.4
Congo grass + Forage sorghum	Forage sorghum	12.8
Grain sorghum	Sunn hemp	11.9
Grain sorghum	Pearl millet	10.4
Grain sorghum	Forage sorghum	12.3

## CONCLUSION

- ✓ In tropical cropping systems, the NH<sub>3</sub>-N loss by straw and plant leaves may reach 18.8 kg ha<sup>-1</sup> year<sup>-1</sup>, even without N fertilizer supplied.
- ✓ The senescence (in this case induced by herbicide action) is the phase of the plant cycle with the greatest potential of NH<sub>3</sub> emission.
- ✓ The magnitude of the NH<sub>3</sub>-N emission seems to be directly related to the N content and to the quantity of N accumulated in the vegetal tissue.

## Acknowledgments

