

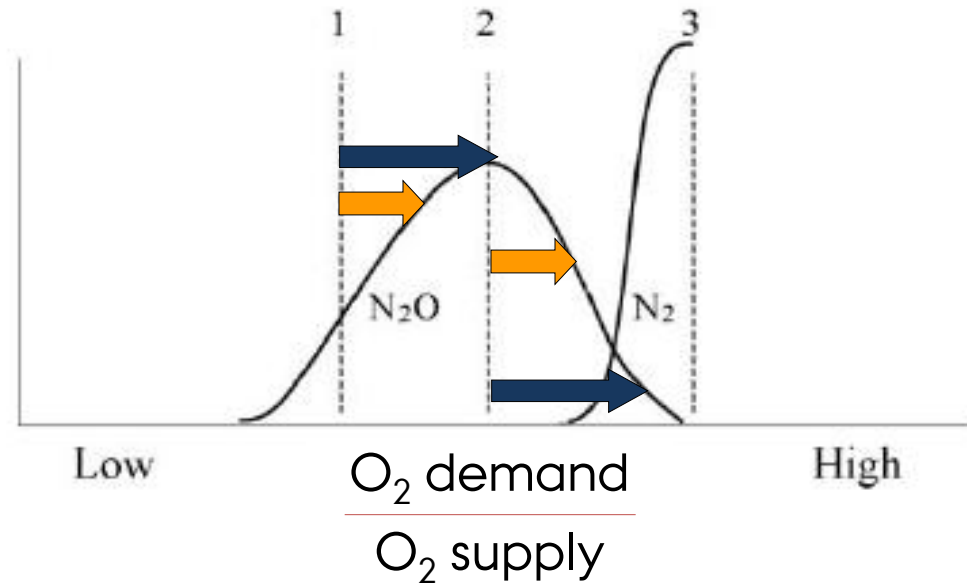
Oxygen supply and demand

O₂ demand:

- > manure VS composition
- > slurry redistribution

O₂ supply:

- > texture
- > compaction
- > moisture



Effects of vinasse on N₂O emission

- 100 t ha⁻¹ (10 mm water) limiting oxygen supply
- Soluble C increasing oxygen demand

Carmo et al. (2013)

Treatments (crop trash level) (Mg ha ⁻¹)	<i>Vinasse</i>	[†] Added N (kg ha ⁻¹)	[*] Emission factor (%)
0	With	142	0.59 ± 0.29
	Without	120	0.68 ± 0.41
7	With	142	1.19 ± 0.84
	Without	120	0.96 ± 0.46
14	With	142	1.89 ± 1.00
	Without	120	0.76 ± 0.30
21	With	142	3.03 ± 1.22
	Without	120	2.03 ± 1.15

Effects of vinasse on N₂O emission

- Limited N input (<20 kg N ha⁻¹)
- Interaction with crop residues

Carmo et al. (2013)

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Conclusions

- N₂O emissions from soil are a major source of agricultural GHG emissions
- Inventory methods based on N input can not account for observed variability
- Balance between oxygen supply and demand is important for the N₂O emission potential
- Effects of vinasse on N₂O emission should be related to residue management



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Thank you!

