Predicting N excretion in commercial grazing system dairy farms

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- Large N surpluses have been reported for dairy production systems worldwide
- Reduction in N excretion by animals on commercial farms
  - observed relationship between N surplus and N in animal manure
- Prediction equations for N excretion
  - assist with the development of nutrient and manure management plans for confinement based systems (e.g. Nennich *et al.* 2005; Knowlton *et al.* 2010; Jonker *et al.* 1999; Nousiainen *et al.* 2004)
- Compare prediction equations for grazing systems with international equations
  - data collected from Australian grazing system farms

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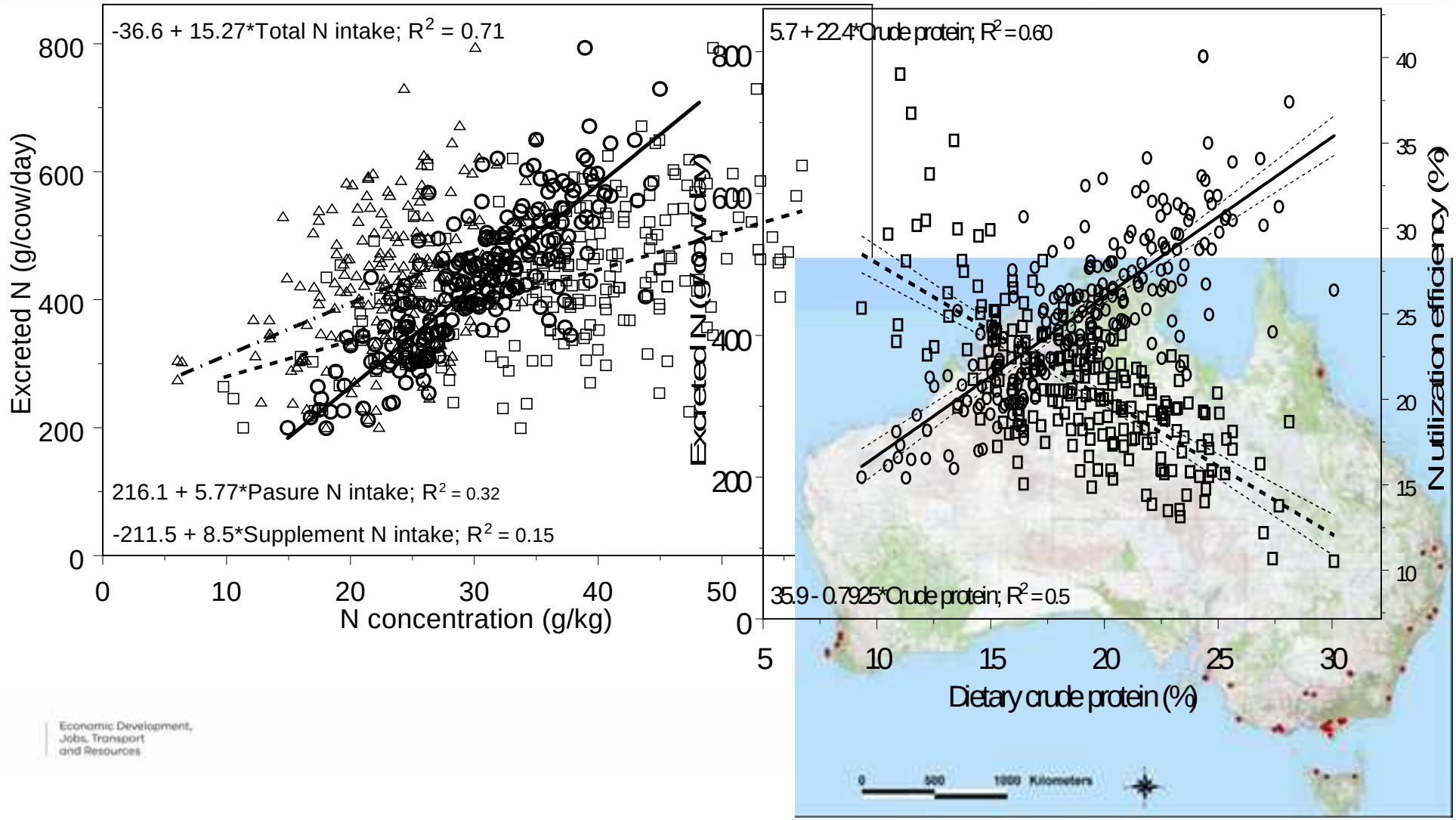

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Regression equations	R^2	Source
N excretion (g/cow/day)		
$N_{[illegible]}$ = 0.55Int + 43 (below 400 g/c/d)	0.78	Castillo et al. 2000
$N_{[illegible]}$		
M		
N_{e}		
M		
Ex		

Regression equations	R^2	Source
N use efficiency (%)		
N_{mi} = -0.0002Int + 0.36	0.21	Castillo et al. 2000
Milk N/N intake = −0.672 CPc + 350	0.13	Yan et al. 2006
NUE = -0.009376N_{In} + 25.9	**0.08**	**This study**
NUE = -0.7925CP + 35.8792	**0.5**	**This study**

- Relationships similar to confinement/research
- Relationships not as strong
  - Due to variation in grazing systems
- For more information – poster # 80

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