



Australian Government
Australian Centre for
International Agricultural Research



Fertiliser use by upland farmers in the Magwe region of the Central Dry Zone of Myanmar

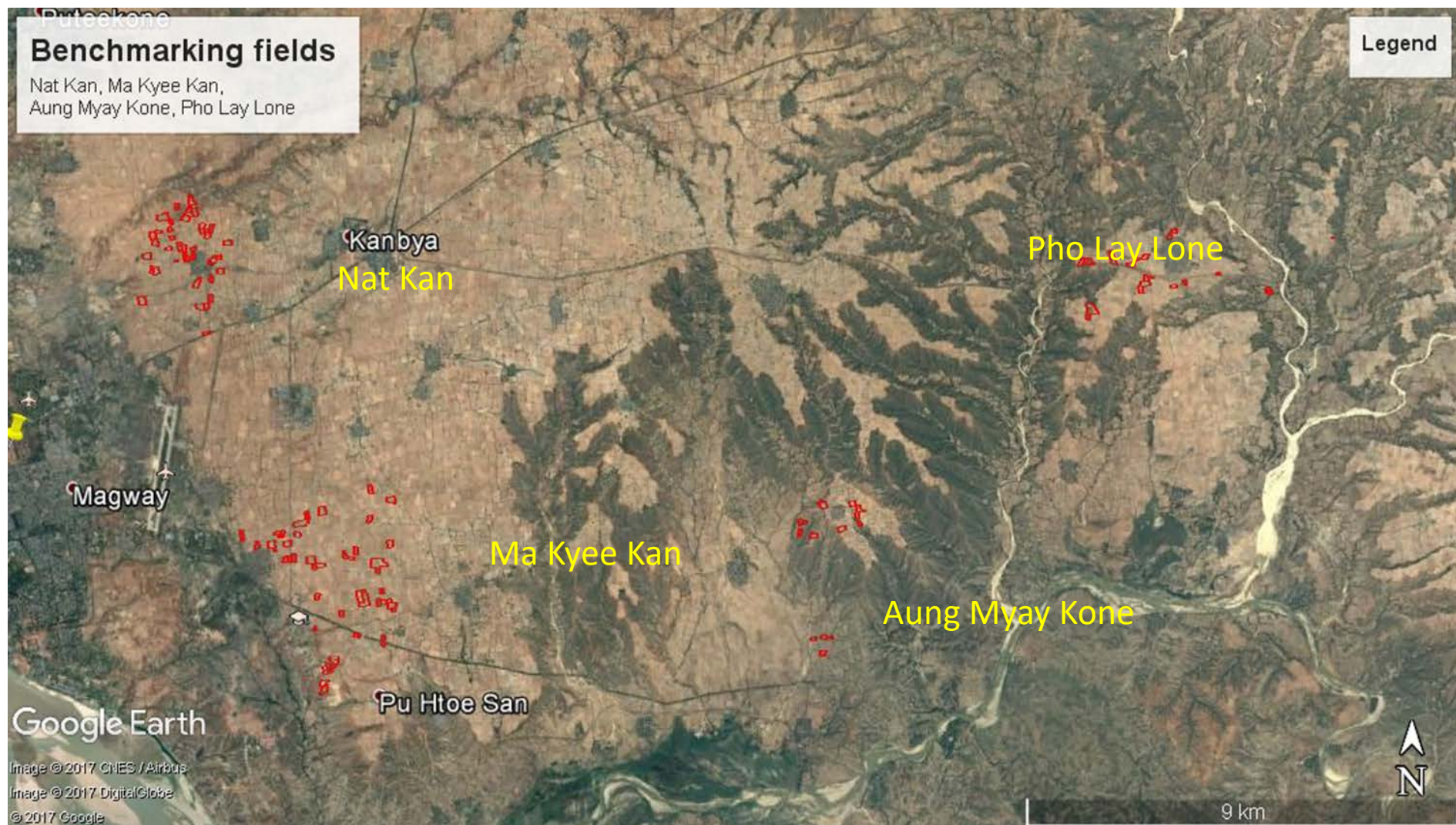
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Su Su Win

Objective:

- To document fertiliser inputs and practices by CDZ farmers as part of a Farmer Participatory Crop Benchmarking program



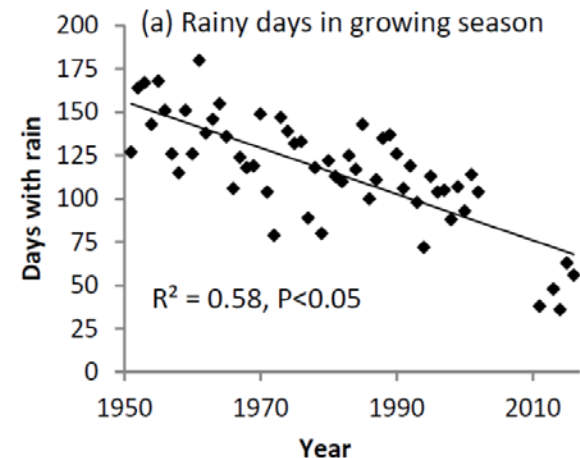
Study area: 4 villages in Magway Township area



Approximately 150 fields and 90 farming families involved

Cropping environment

- Sandy soils
- Annual rainfall 754mm (670mm in growing season)
- Leaching events are frequent, with average of 100mm deep drainage (Cornish et. al, unpublished)
- Decreasing number of rain days, but increasing number of larger falls as rainfall has not changed



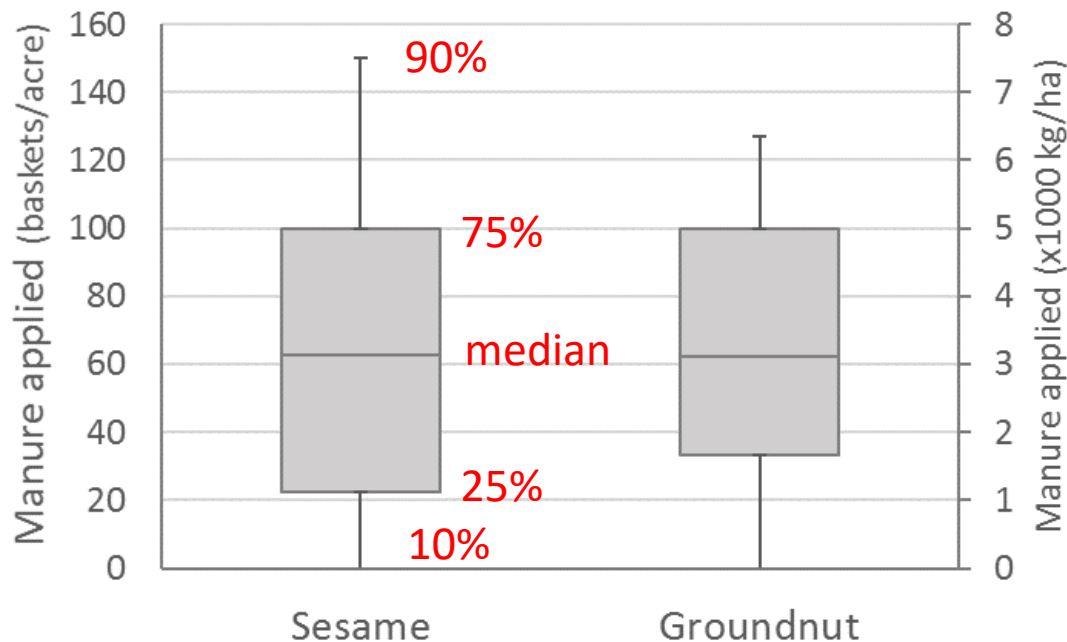
Method

- Farmers were given datasheets to record all crop management practices and inputs, and final yields
- Farmer group meetings were conducted during the season to discuss fertiliser use and to understand their practices,
- Data recording and collection supervised by village DoA extension staff

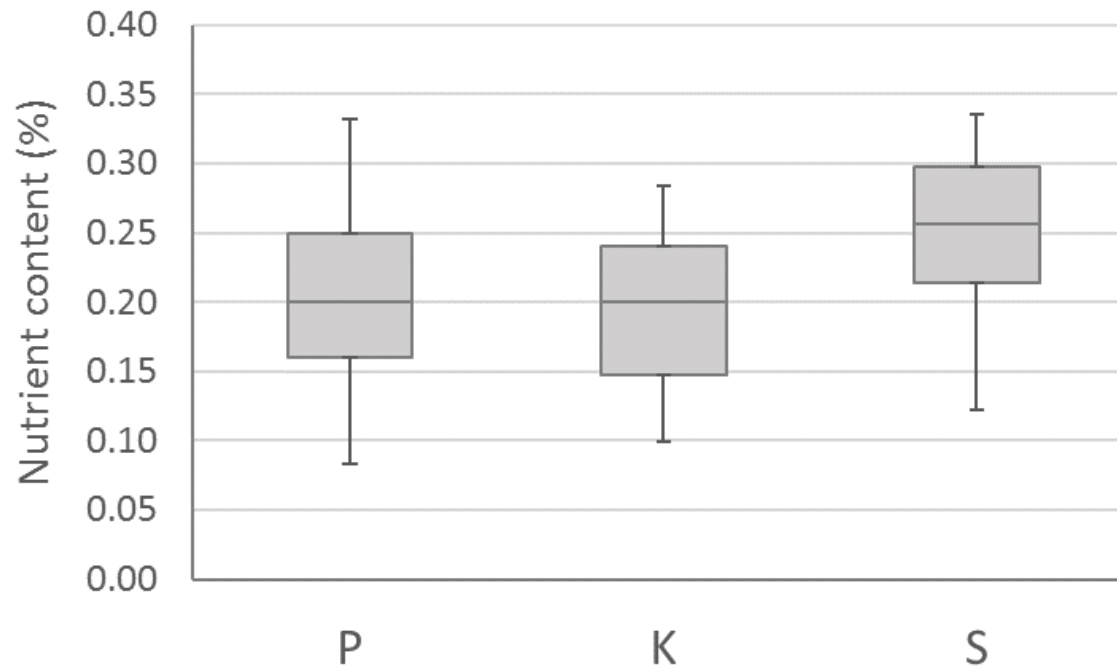


Results:

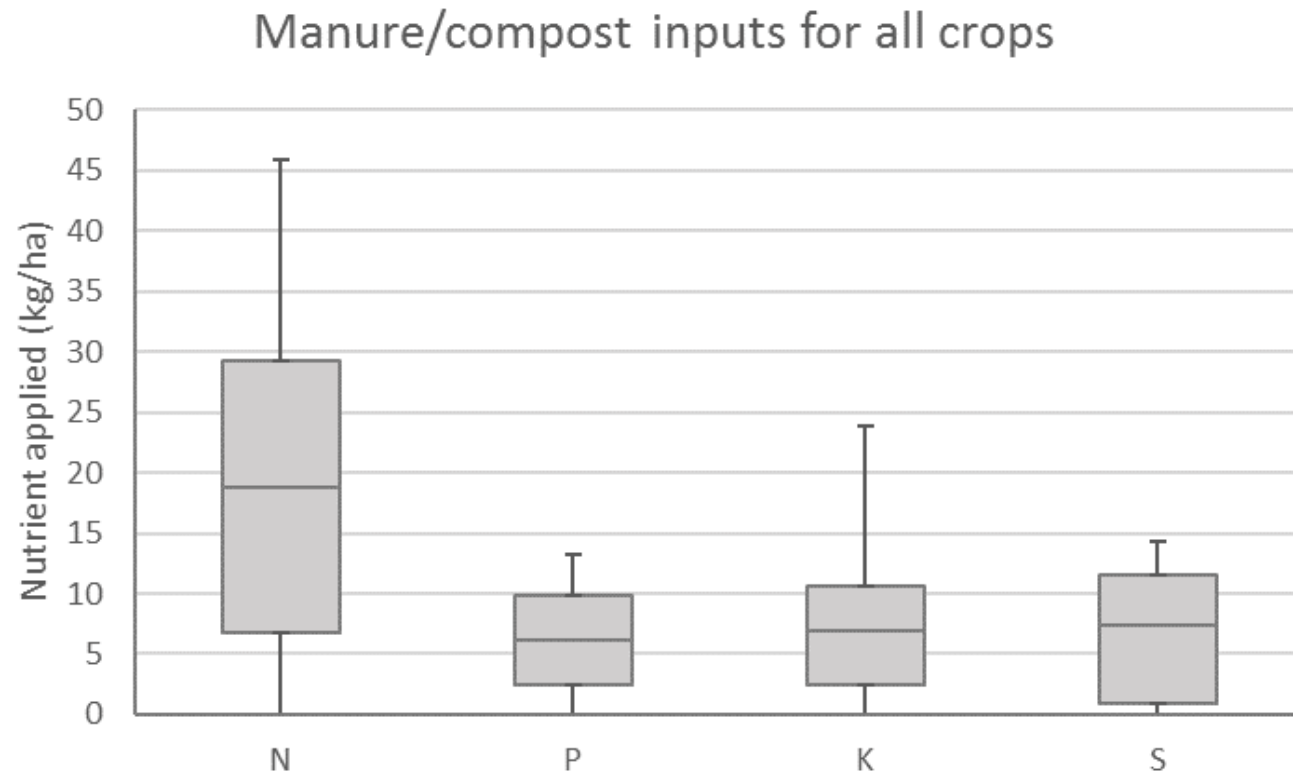
- Manure is applied in the pre-monsoon dry season between February and May in most fields (78% sesame, 87% groundnut).
- Cattle manure most common, but goat, chicken, other organics also used



Nutrient content of 20 manure samples



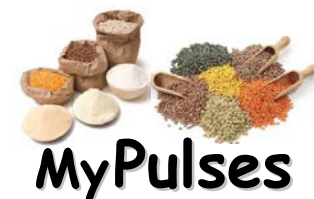
Nutrient inputs from manure



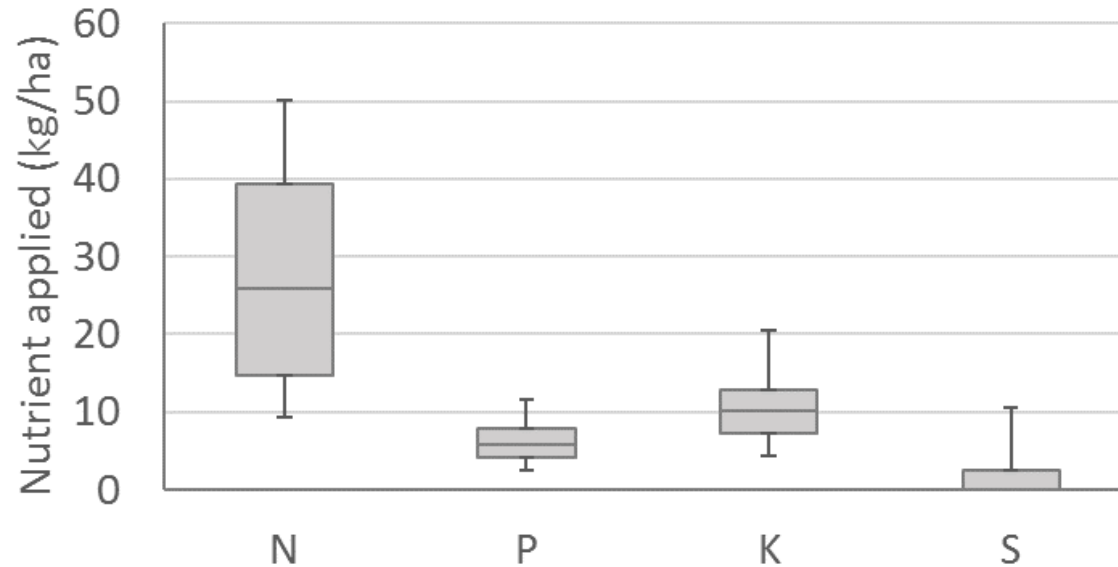
Fertiliser inputs

- Applied mostly as compound fertilisers
- Typically applied at sowing as a 'basal' application, followed by one or more broadcast applications, and mostly finished by 45DAS

Fertiliser type	% of applications
Compound	50.2
Urea	19.2
Gypsum	23.1
TSP	2.6
Potash	2.4
Other	2.4
Total no. of applications	536



Fertiliser inputs for sesame crops

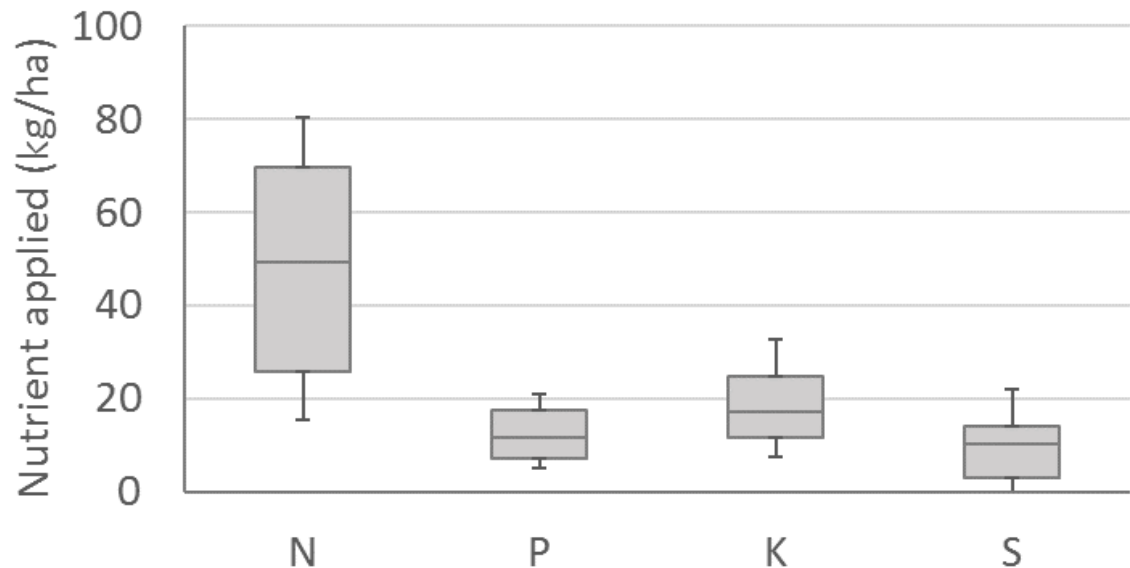


Sesame inputs

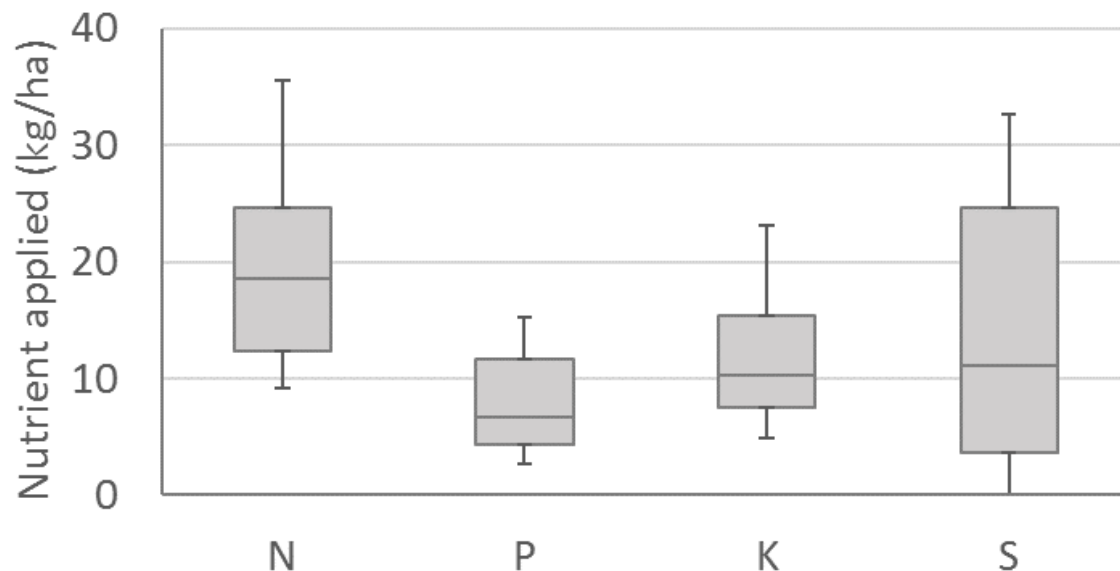
Total nutrient inputs for sesame crops

% nutrient supplied by manure

N	P	K	S
47	51	40	100



Fertiliser inputs for groundnut crops



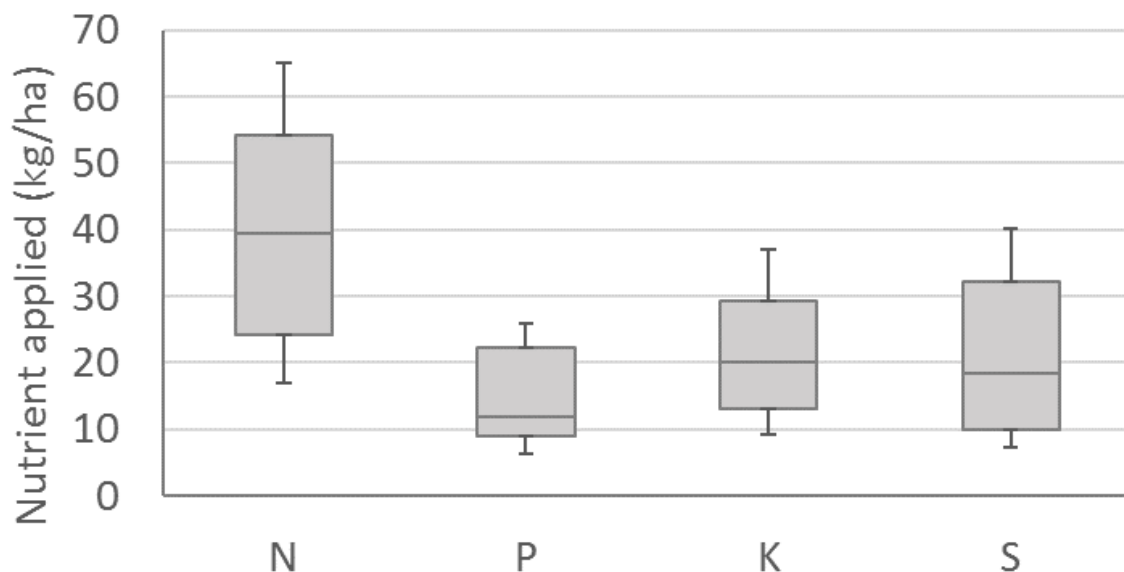
Groundnut inputs

% nutrient supplied by manure

N	P	K	S
53	43	49	40

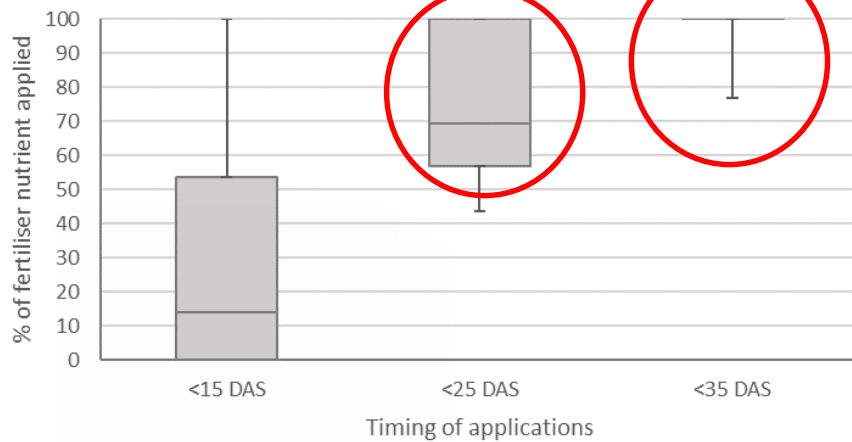


Total nutrient inputs for groundnuts

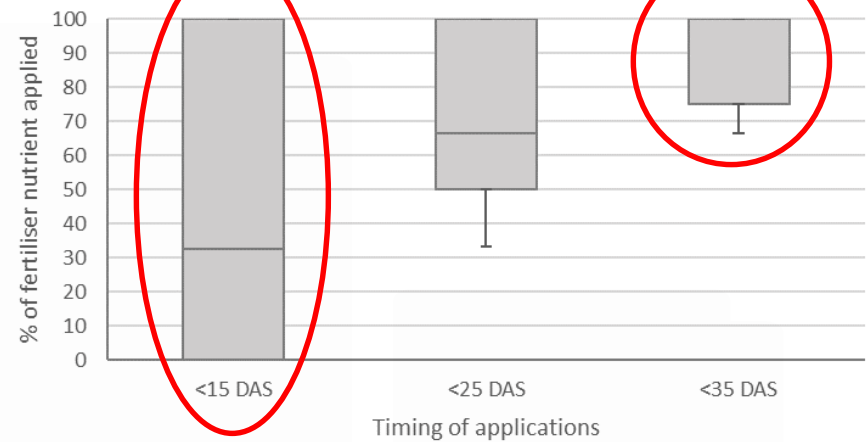


Fertiliser application timing in sesame

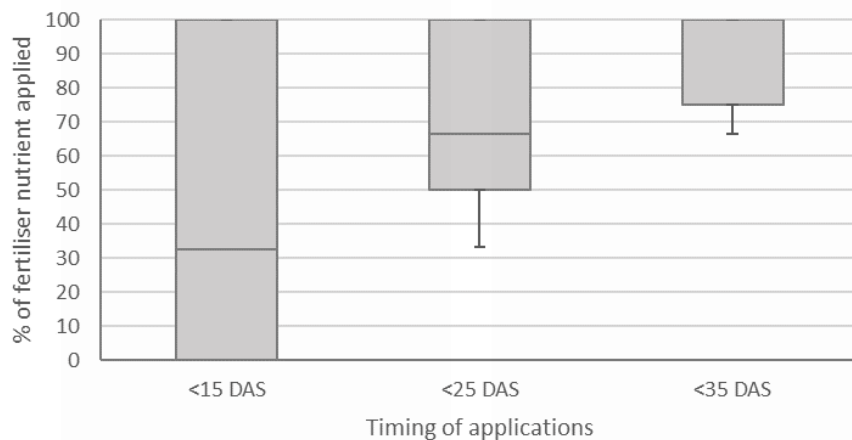
N fertiliser timing for sesame crops



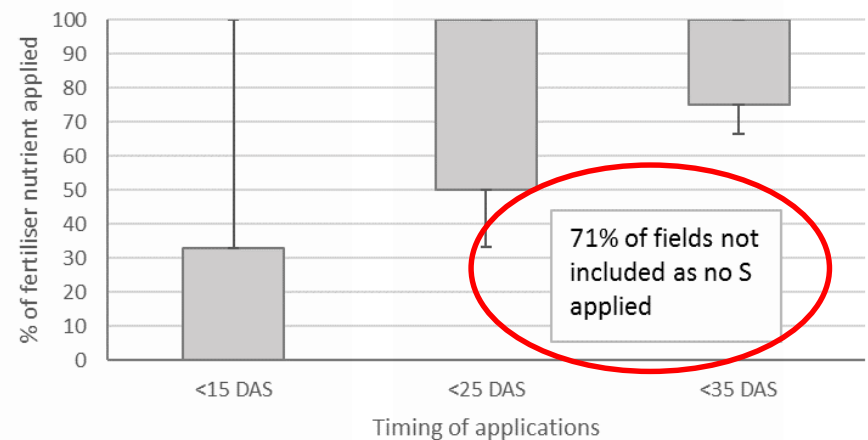
P fertiliser timing for sesame crops



K fertiliser timing for sesame crops

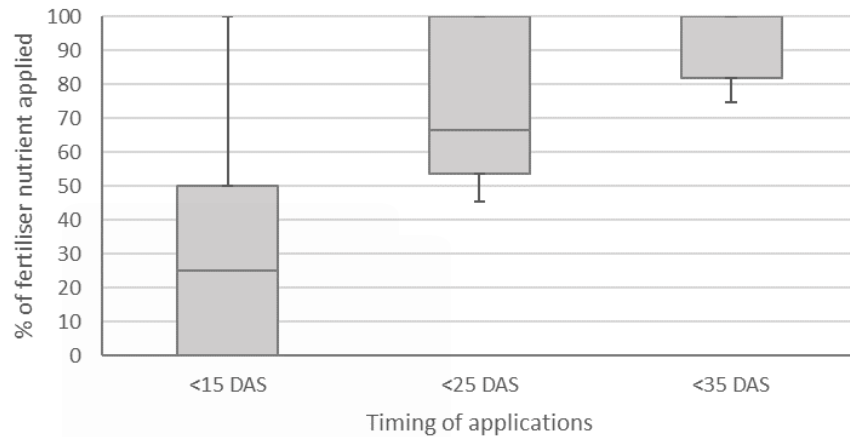


S fertiliser timing for sesame crops

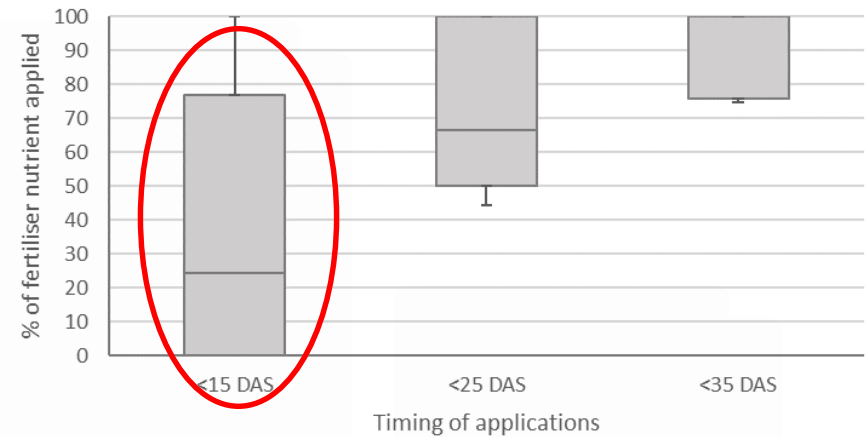


Fertiliser application timing in groundnut

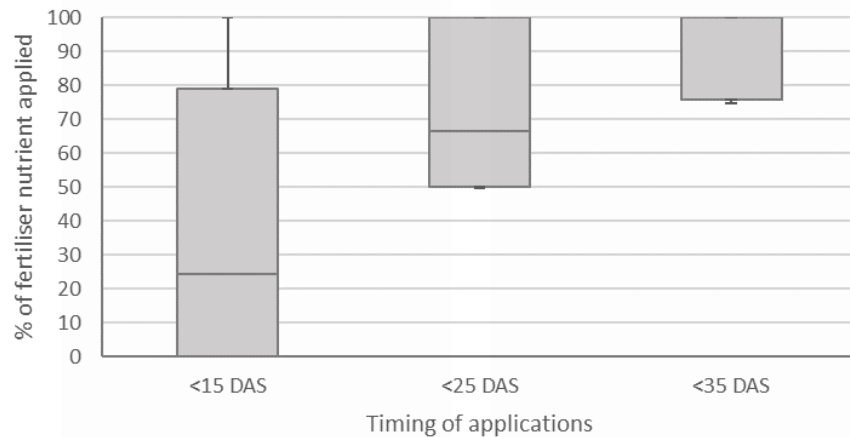
N fertiliser timing for groundnut crops



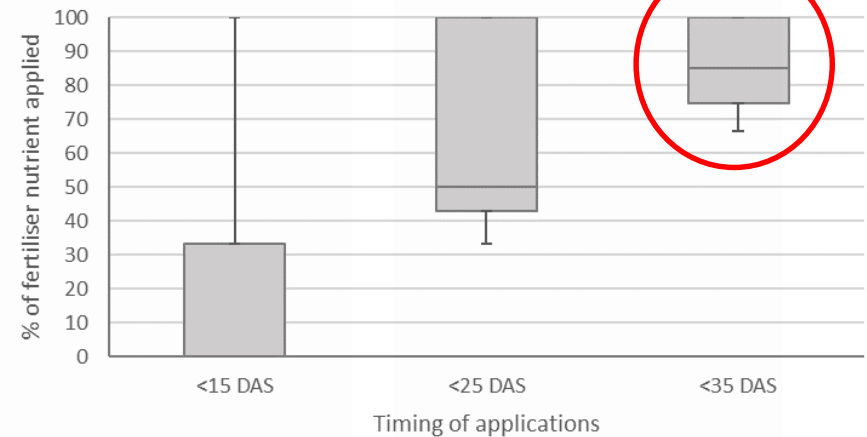
P fertiliser timing for groundnut crops



K fertiliser timing for groundnut crops



S fertiliser timing for groundnut crops



Compound fertiliser cost v value

Fertiliser	Price	Value	Ratio
15:15:15:7, Armo	37,500	23,863	1.6
16:16:8:13	35,500	25,910	1.4
10:10:5 (no S), Armo	17,000	10,913	1.6
15:9:8:6 Arrow world	20,000	17,795	1.1
15:15:15 Buffalo	38,000	19,313	2.0
Manure	400	281	1.4



Conclusions

- There is a wide range of nutrient inputs across the fields studied
- Manure is a significant source of nutrients for the cropping system, supplying 40-50% of inputs
- Compound fertilisers make up 50% of the fertilisers used,
 - higher costs for farmers
 - incorrect or inefficient timing of application for some nutrients – especially late P applications



Conclusions

- Mobile nutrients like S and N are likely to need multiple and later applications to minimise losses through leaching, and late season deficiencies



Acknowledgements

- DoA village staff involved in data collection
- Other members of MyPulse and MyLife who contributed during village visits
- Funded as a X-project between MyPulse and MyLife



Questions?

