

Dairying in a Variable Climate 2018 – 21

June 2021: Jane Kay

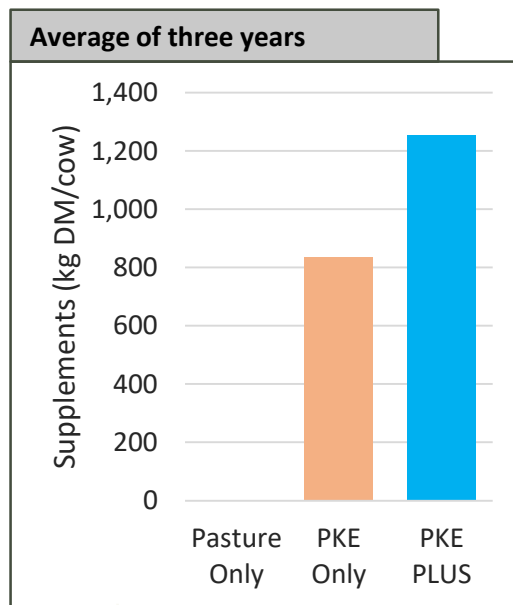


What have we learnt?



Supplements fed (kg DM/cow)

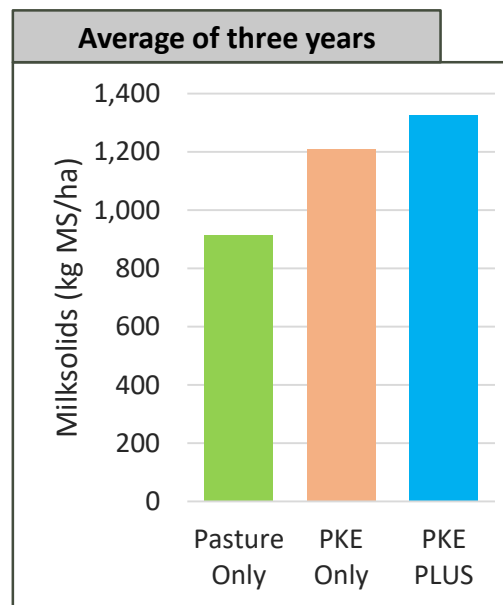
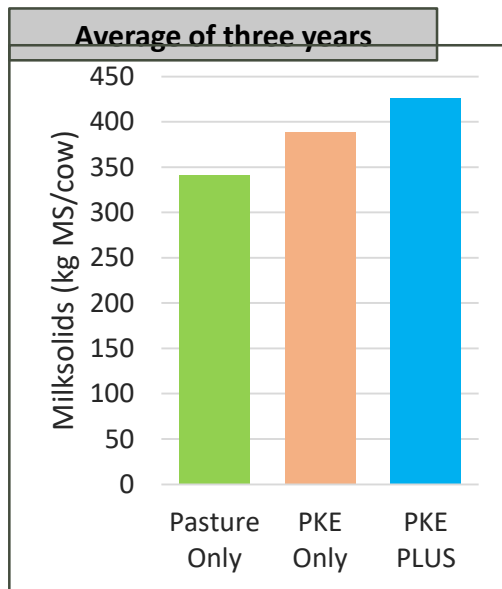
	Imported Supplement kg DM/cow		
	2018/19	2019/20	2020/21
Pasture Only Farm	0	0	0
PKE Only Farm	748	978	784
PKE Plus Farm	1,046	1,410	1,303



Pasture Only = system 1 (0% supplements)
 PKE Only = system 3 (17% supplements)
 PKE Plus = system 4 (25% supplements)

Milksolids prod (kg MS/ha & cow)

	Kg MS/ha			Kg MS/Cow		
	2018/19	2019/20	2020/21	2018/19	2019/20	2020/21
Pasture Only Farm	996	816	936	372	313	340
PKE Only Farm	1,225	1,129	1,272	403	359	405
PKE Plus Farm	1,300	1,279	1,405	423	407	447

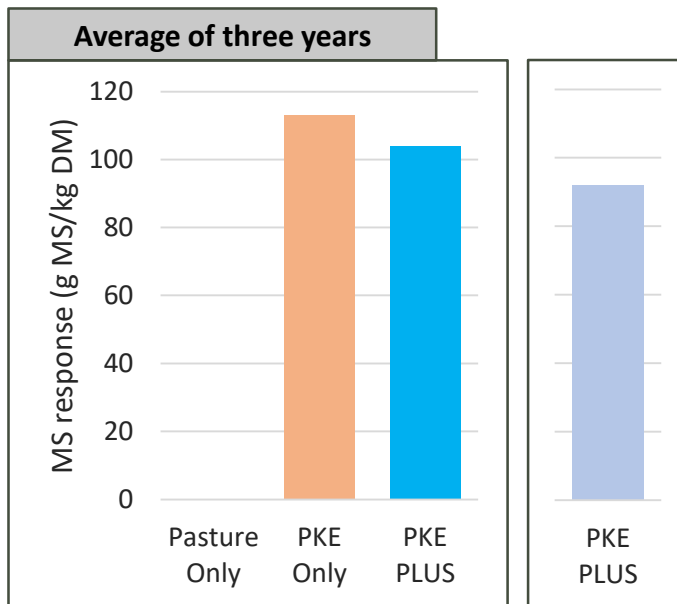


Pasture Only affected most by poor season

More supplement and greater SR
= more milk per cow and per hectare

Milksolids response (g MS/kg DM)

Milk Solids Response g/kg DM fed	PKE Only farm			PKE Plus farm		
	2018/19	2019/20	2020/21	2018/19	2019/20	2020/21
Compared with Pasture Only	100	102	136	94	104	114
Compared with PKE Only				81	112	82

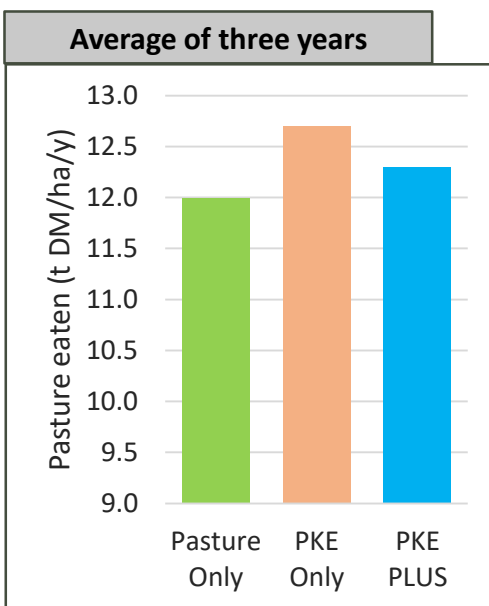


Above average milksolids responses

Milksolids response diminishes as amount of supplement fed increases

Pasture eaten (t DM/ha/yr)

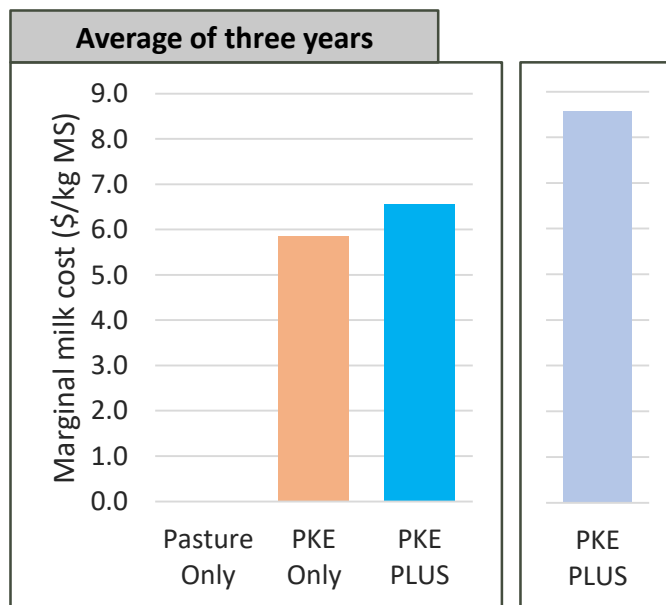
	2018/19	2019/20	2020/21
Pasture Only farm	12.6	10.9	12.4
PKE Only farm	13.2	11.6	13.3
PKE Plus farm	12.6	11.4	12.9
Average across farms	12.8	11.3	12.9



Greater milk solids response is due to greater pasture grown (positive use of substitution)

Marginal milk cost (\$/kg MS)

Marginal milk cost \$/kg MS	PKE Only farm			PKE Plus farm		
	2018/19	2019/20	2020/21	2018/19	2019/20	2020/21
Compared with Pasture Only	\$5.39	\$6.54	\$5.65	\$6.67	\$6.27	\$6.73
Compared with PKE Only				\$10.57	\$5.70	\$9.47



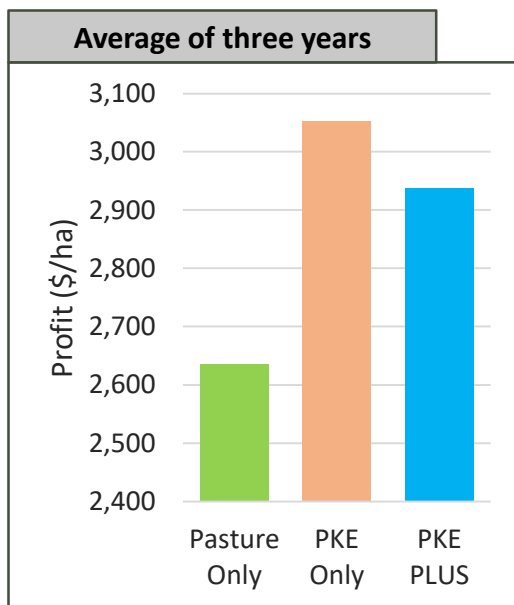
Lower the milksolids response, the greater the marginal cost of milk

Average milk price > \$8.60 for PKE Plus farm to be more profitable than PKE Only

Average milk price < \$5.90, for Pasture Only farm to be more profitable

Operating profit (\$/ha)

	Milk Price \$6.35/kg MS	Milk Price \$7.14/kg MS	Milk Price \$7.55/kg MS
	2018/19	2019/20	2020/21
Pasture Only Farm	\$3,002	\$1,877	\$3,031
PKE Only Farm	\$3,301	\$2,119	\$3,743
PKE Plus Farm	\$2,991	\$2,336	\$3,488

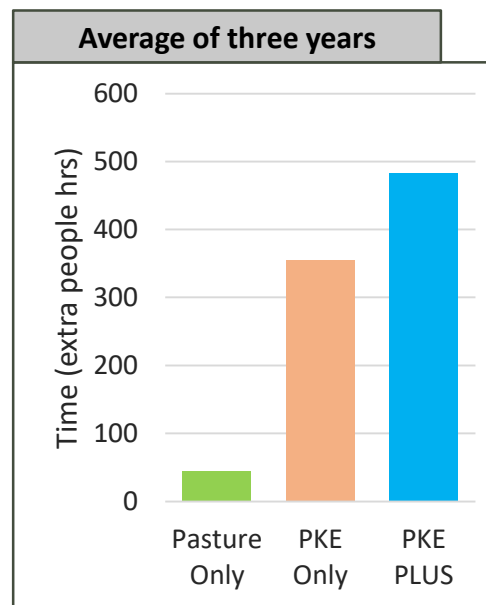
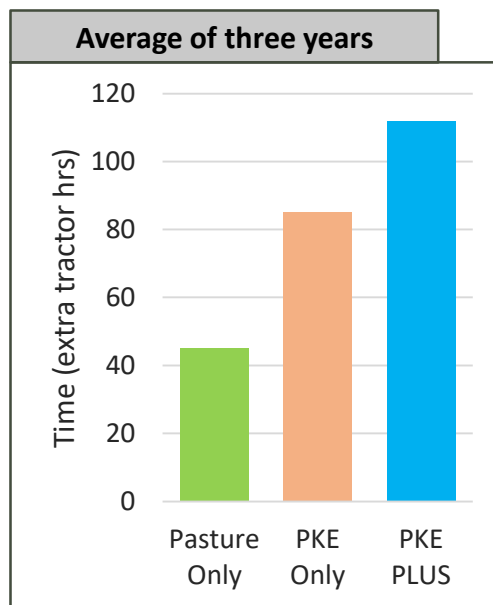


Greater milksolids response
= lower cost of marginal milk
= more profit

Pasture Only = overall least profitable (2 out of 3 yrs)
PKE Only = overall most profitable (2 out of 3 yrs)
PKE Plus = 1 yr most profitable, 1 yr least profitable

Time (extra hrs)

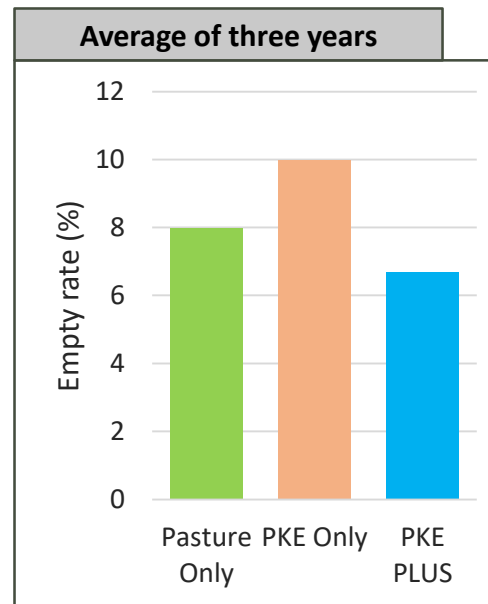
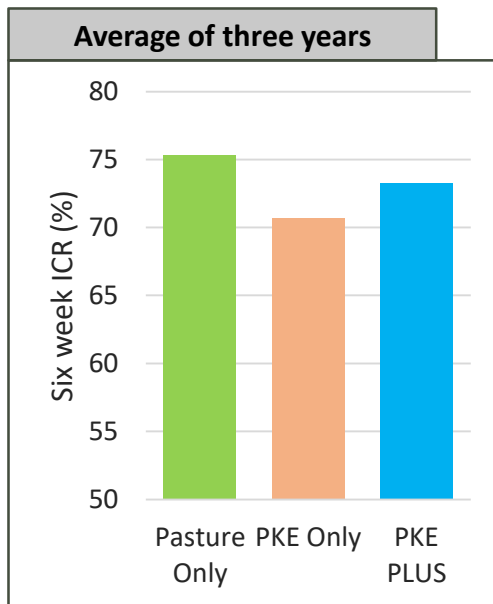
	Additional Tractor Hours	Additional Labour Hours
Pasture Only farm	45	45
PKE Only farm	85	355
PKE Plus farm	112	483



More cows and more
supplement fed
=
more people and tractor
hours

Reproduction

	Six Week in Calf Rate (%)			Empty Rate (%)		
	2018/19	2019/20	2020/21	2018/19	2019/20	2020/21
Pasture Only Farm	79%	71%	76%	9%	6%	9%
PKE Only Farm	67%	76%	69%	11%	6%	13%
PKE Plus Farm	74%	76%	70%	6%	7%	7%



No effect of supplement use or system on reproduction

Which system for me?

- PKE Plus produced most milk
- PKE Only was most profitable (>\$5.86)
 - Greater MS response
 - More pasture grown
 - Lower marginal milk cost
- Pasture Only had least hours (tractor & people)
- No effect of system on reproduction
- Pasture only lower environmental footprint

