

CASE STUDY: MARK & DEVON SLEE

Irrigate smarter and increase farm production

Mark and Devon Slee's dairy farm Melrose Dairy Ltd proves increasing farm production can be achieved alongside environmental gains.

The couple have reduced their water consumption for irrigation by more than 50% in the past decade while more than doubled milk production. These results make them not only one of the top performing dairy farming operations in Canterbury, but show sustainable dairy farming is underpinned by modern irrigation practice.

The Slees use SMART Irrigation techniques including highly efficient centre pivot and k-line systems to target water application. Investing in soil moisture monitoring analysis provides the couple with quality data on how soils are faring so they can ensure water is only added to those paddocks that really need it.

Their results speak for themselves.

	1992	2002	2014
Effective Area ¹	83%	85%	95%
Cows	2.2/ha	3.0/ha	3.8/ha
Production	320 kgMS/cow 704 kgMS/ha	390 kgMS/cow 1170 kgMS/ha	475 kgMS/cow 1805 kgMS/ha
Irrigation	800 mm/ha	675 mm/ha	383 mm/ha
kgMS/mm Water ²	0.469	0.851	1.666
Total N inputs	168 kg/ha	286 kg/ha	382 kg/ha
kgN Leached ³	48	56	47
kgMS/kgN Input	4.2	4.1	4.7
kgMS/kgN Leached	14.7	20.9	38.4
kgN/ha Fert	63 kg/ha	156 kg/ha	234 kg/ha
kgN/ha Fixed ⁴	89 kg/ha	105 kg/ha	105 kg/ha
kgN/ha Imported	16 kg/ha	25 kg/ha	43 kg/ha

1. Assumes 90% irrigation coverage with border dyke and 100% with spray types

2. As a measure of total water used including rainfall at 700mm/ha/year

3. Excludes winter crops. Calculated using Overseer v 6.1.2

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