Dairy Australia

# “Incorporating effluent and other organic fertilisers into farm nutrient management plans”


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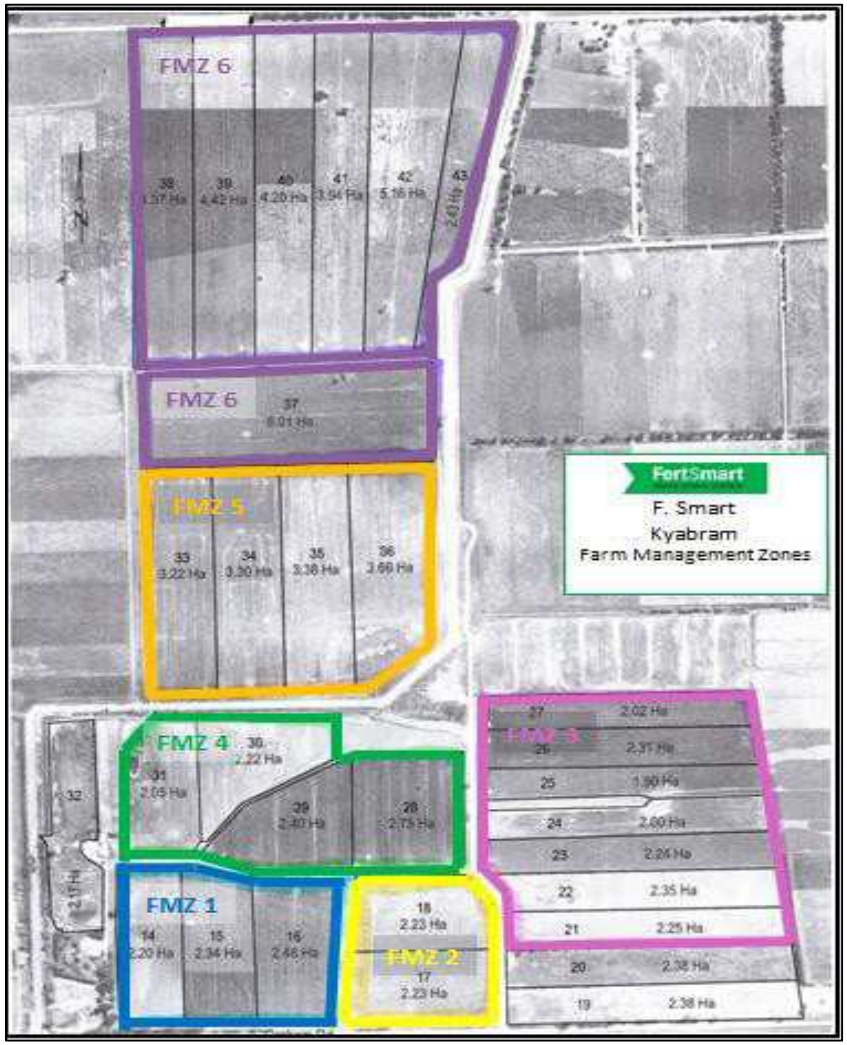
# Farm Nutrient or Fertiliser Management Plans

- All farms should have a *Fertiliser Management Plan*
- Assists in:
    - Optimum fertiliser usage
    - Budgeting for fertiliser expenditure
    - Reduces environmental risks
    - Accounting for other nutrients brought onto the farm.  e.g. in grain and hay

# Farm Management Zones



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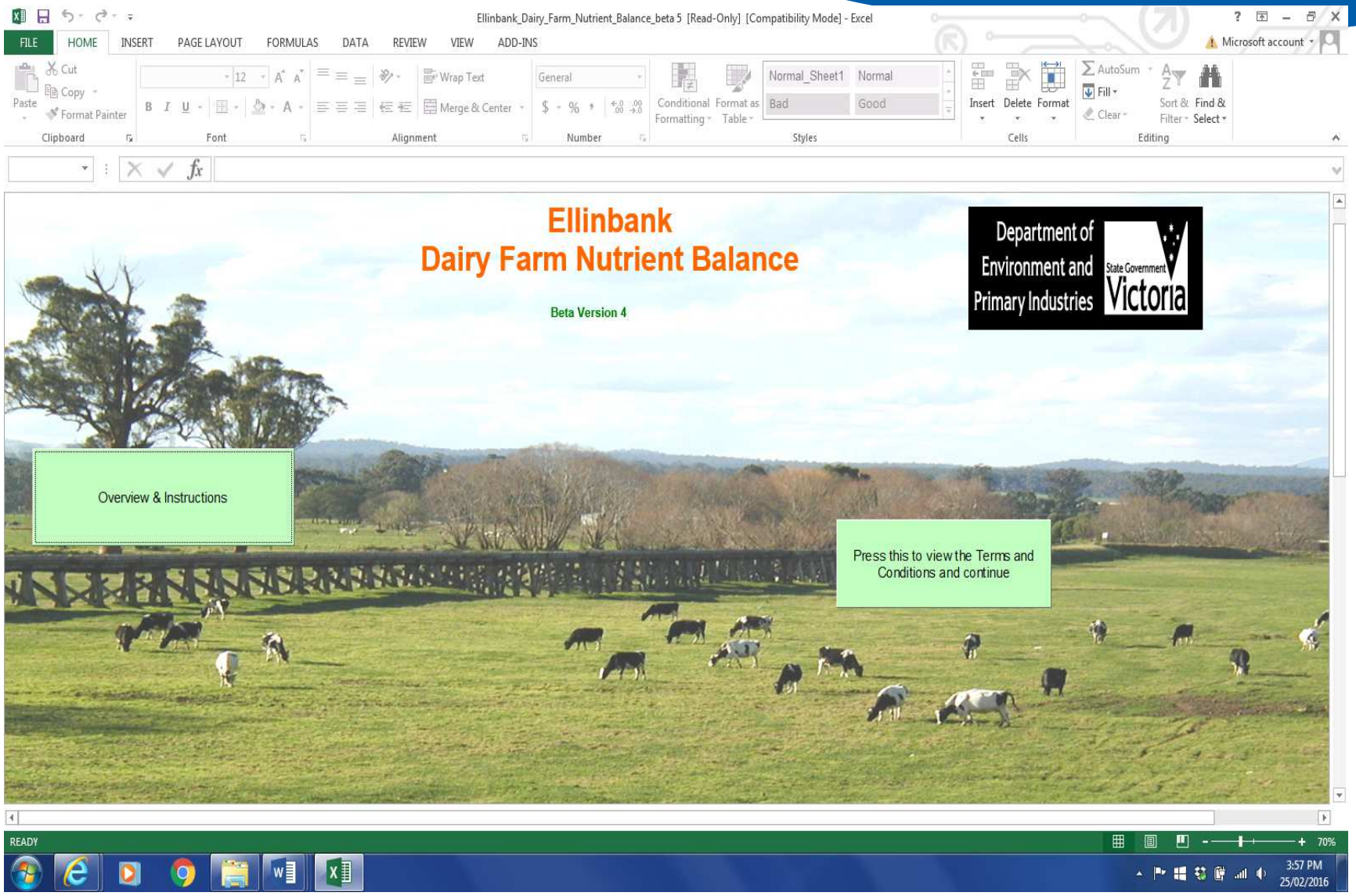

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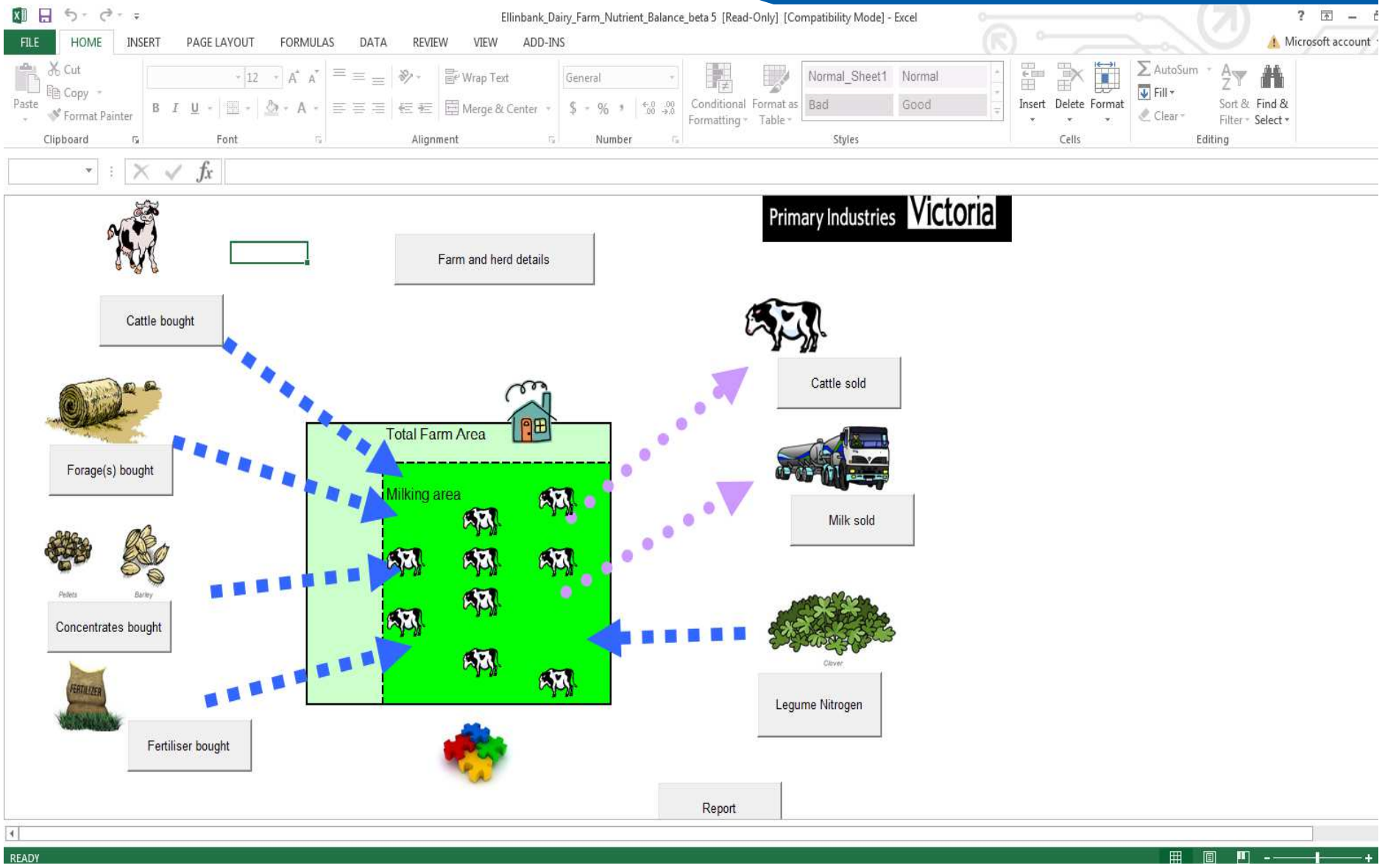

## Fertiliser Program 2012/2013

Fertiliser products top-dressed unless otherwise indicated using DairySAT BMP (best management practices). Products are based on past use. Discuss all aspects fully with your Fertcare C accredited advisor.

| | | | Fertiliser kg/ha | | | | 2012 / 2013 | |
|---|---|---|---|---|---|---|---|---|
| FMZ | | Area | N | P | K | S | | Fertiliser Program |
| 1 | No 14-16 (Perm't) | 7.4 | 193 | 13 | 0 | 16 | Spring<br>Summer<br>Autumn<br>Autumn<br>Winter | 2 x 70 kg/ha Urea NPKS 46:0:0:0<br>Nil<br>1 x 150 kg/ha Single Super NPKS 0:9:0:11<br>2 x 70 kg/ha Urea NPKS 46:0:0:0<br>2 x 70 kg/ha Urea NPKS 46:0:0:0 |
| 2 | No 17-18 (Perm't) | 4.6 | 161 | 13 | 0 | 16 | Spring<br>Summer<br>Autumn<br>Autumn<br>Autumn<br>Winter | 2 x 70 kg/ha Urea NPKS 46:0:0:0<br>Nil<br>Gypsum required. Refer FMZ 2 notes<br>1 x 150 kg/ha Single Super NPKS 0:9:0:11<br>2 x 70 kg/ha Urea NPKS 46:0:0:0<br>1 x 70 kg/ha Urea NPKS 46:0:0:0 |
| 3 | No 21-27 (Perm't) | 16.0 | 161 | 0 | 0 | 0 | Spring<br>Summer<br>Autumn<br>Autumn<br>Winter | 2 x 70 kg/ha Urea NPKS 46:0:0:0<br>Nil<br>Gypsum required. Refer FMZ 3 notes<br>2 x 70 kg/ha Urea NPKS 46:0:0:0<br>1 x 70 kg/ha Urea NPKS 46:0:0:0 |
| 4 | No 28-31 (Perm't) | 10.1 | 129 | 0 | 0 | 0 | Spring<br>Summer<br>Autumn<br>Winter | Irrigated with effluent pond liquid *<br>Irrigated with effluent pond liquid *<br>2 x 70 kg/ha Urea NPKS 46:0:0:0<br>2 x 70 kg/ha Urea NPKS 46:0:0:0 |
| 5 | No 33-36 (Perm't) | 13.5 | 129 | 21 | 24 | 27 | Spring<br>Summer<br>Autumn<br>Autumn<br>Autumn<br>Winter | 1 x 70 kg/ha Urea NPKS 46:0:0:0<br>Slurry likely to be applied<br>Gypsum required. Refer FMZ 5 notes<br>1 x 300 kg/ha Super Potash 5:1 NPKS 0:7:8:9<br>2 x 70 kg/ha Urea NPKS 46:0:0:0<br>1 x 70 kg/ha Urea NPKS 46:0:0:0 |
| 6 | No 37-43 (Annual) | 32.0 | 97 | 35 | 40 | 45 | Spring<br>Summer<br>Autumn<br>Autumn<br>Autumn<br>Winter | 1 x 70 kg/ha Urea NPKS 46:0:0:0<br>Nil<br>Agricultural lime required. Refer FMZ 6 notes.<br>1 x 500 kg/ha Super Potash 5:1 NPKS 0:7:8:9<br>1 x 70 kg/ha Urea NPKS 46:0:0:0<br>1 x 70 kg/ha Urea NPKS 46:0:0:0 |

* Effluent pond liquid is applied to FMZ 4, but slurry will be pumped out onto FMZ 6 in summer 2013.

Nutrients in all effluents, sludge's, composts and other organic amendments should be accounted for:

- *Difficulties include:*
    - Unknown nutrient content, e.g. sludge
    - Variability in nutrient content
    - Nutrients present in a range of forms:
        - Total nutrient present, e.g. N
        - Plant available N
        - Nutrients that slowly become available

# “Nutrients from Effluent and Sludge Calculator”

- Developed by Dairy Australia as part of the “Fert$mart” program

- Being finalised, will be found in:

http://fertsmart.dairyingfortomorrow.com.au/

# Nutrient availability from compost:

Available nutrient levels in compost depend on:

- Compost type
- Chemical properties
- Maturity
- Rate & method of application
- Crop
- Soil type
- Environment

# Estimated Nutrient Availabilities – Year 1

| | |
|---|---|
| Nitrogen | 5 - 10% |
| Phosphorus | 40 - 50% |
| Potassium | 60 - 80% |
| Sulphur | 50% |
| Calcium | 50% |
| Magnesium | 30% |

# Total V's Available Nutrients

| | | Total Applied | | "Available" Yr1 | |
|---|---|---|---|---|---|
| Nutrient | % DM | 2 t/ha | 10 t/ha | 2 t/ha | 10 t/ha |
| Nitrogen | 1.24 | 19 | 97 | 2 | 10 |
| Phosphorus | 0.33 | 5 | 25 | 2 | 10 |
| Potassium | 1.07 | 17 | 83 | 13 | 67 |
| Sulphur | 0.20 | 3 | 16 | 2 | 8 |
| Calcium | 1.70 | 27 | 133 | 13 | 66 |
| Magnesium | 0.47 | 7 | 37 | 2 | 11 |

## Compost Benefits Calculator

Angus Campbell Recycled Organics Unit with support from NSW compost industry has developed a Compost Benefits Calculator as an iPhone App.

-App can be downloaded through the App Store onto your iPhone or iPad.


COMPOST VICTORIA

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- **Compost Benefits Calculator**

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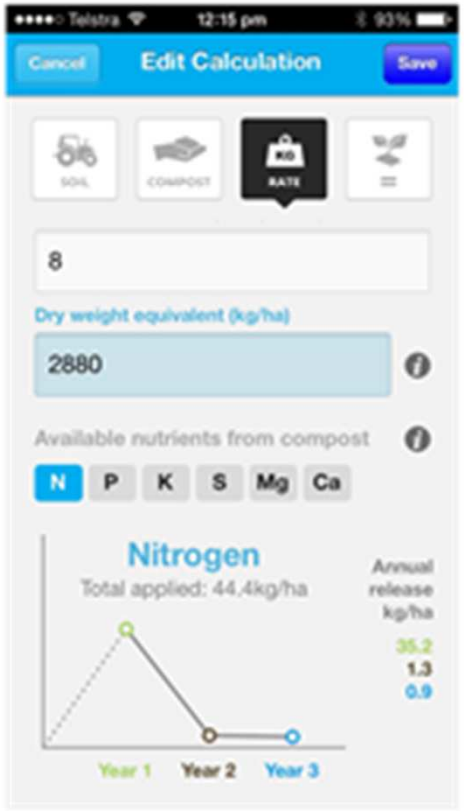
# Compost Benefits Calculator



# In Conclusion:

- Nutrients from applied organics should be accounted for
- Nutrient content of organics are variable and often unknown
- Nutrients can become plant available over several years
- There are some calculators becoming available