

## NUCLEON

### ALMONDS: NUCLEON APPLIED VIA DRIP IRRIGATION

ALMOND CENTRE OF EXCELLENCE  
LOXTON, SOUTH AUSTRALIA

#### Nucleon features

- Liquid enzyme additive with lipase and mannanase to enhance nutrient uptake in horticultural crops
- Helps stimulate native microbial populations
- Can be applied with liquid fertilisers at planting, through fertigation or side dressed in crop
- Helps improve soil and plant health, growth and yield

#### Treatments

| Treatments |                                     | Rate mL/ha |
|------------|-------------------------------------|------------|
| 1          | Grower fertiliser program           | --         |
| 2          | Nucleon + Grower fertiliser program | 50         |
| 3          | Nucleon + Grower fertiliser program | 100        |

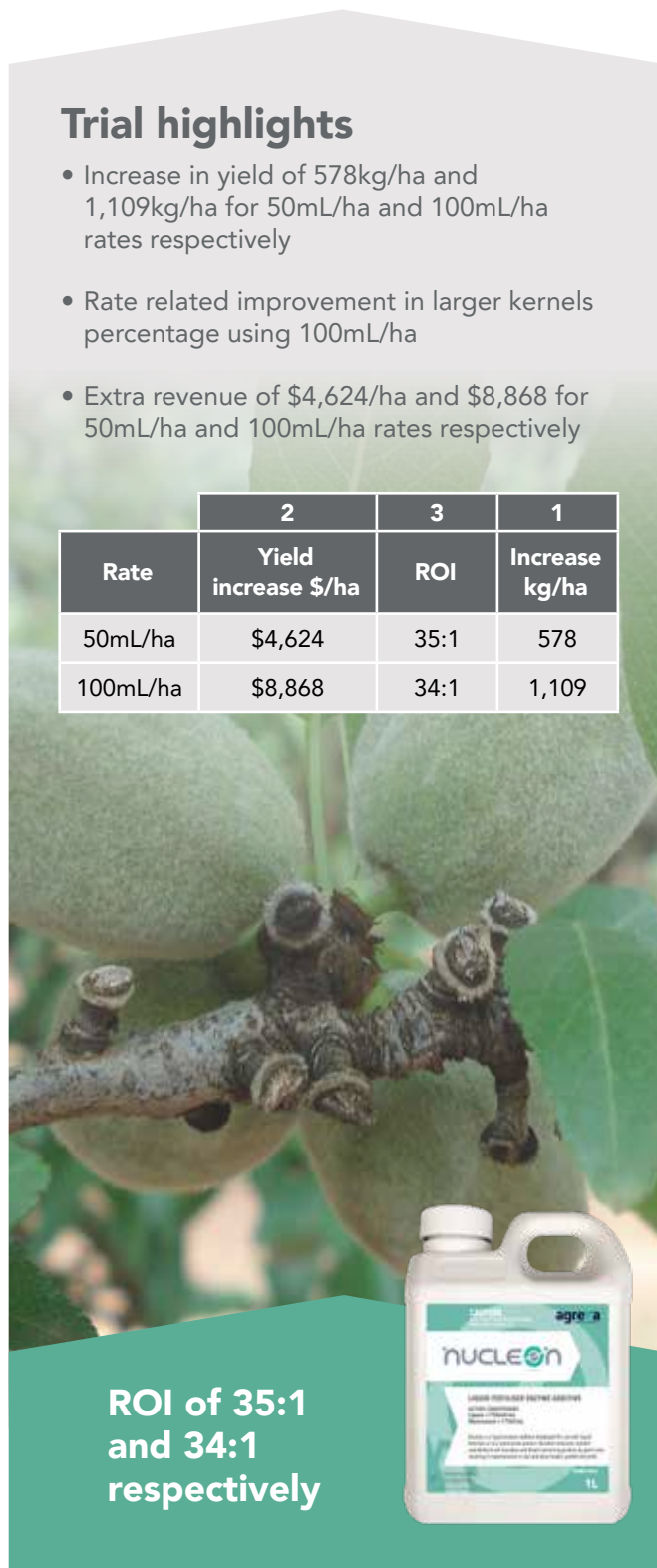
- Tree spacing 7 x 4.5m, 4 years of age, Nonpareil variety
- Drip irrigation rate 1.31mm/hr, irrigation interval 1 day, application rate 16mm per irrigation
- Product applied to whole row via Ezeflow injector
- Trees harvested commercially and weighed into bins
- 200 entire fruit randomly selected from each treatment for quality measurements
- Each sample hand cracked and each kernel weighed individually
- Yield estimated by applying calculated crack out to field weight

| Application | Timing      | Growth stage   | mL/ha |
|-------------|-------------|----------------|-------|
| 1           | 15 Sep 2021 | Early nut fill | 50    |
| 2           | 26 Oct 2021 | Late nut fill  |       |
| 3           | 29 Mar 2022 | Post harvest   |       |
| 1           | 20 Sep 2021 | Early nut fill | 100   |
| 2           | 19 Oct 2021 | Late nut fill  |       |
| 3           | 01 Apr 2022 | Post harvest   |       |

#### Trial highlights

- Increase in yield of 578kg/ha and 1,109kg/ha for 50mL/ha and 100mL/ha rates respectively
- Rate related improvement in larger kernels percentage using 100mL/ha
- Extra revenue of \$4,624/ha and \$8,868 for 50mL/ha and 100mL/ha rates respectively

| Rate     | 2                    | 3    | 1              |
|----------|----------------------|------|----------------|
|          | Yield increase \$/ha | ROI  | Increase kg/ha |
| 50mL/ha  | \$4,624              | 35:1 | 578            |
| 100mL/ha | \$8,868              | 34:1 | 1,109          |



ROI of 35:1  
and 34:1  
respectively

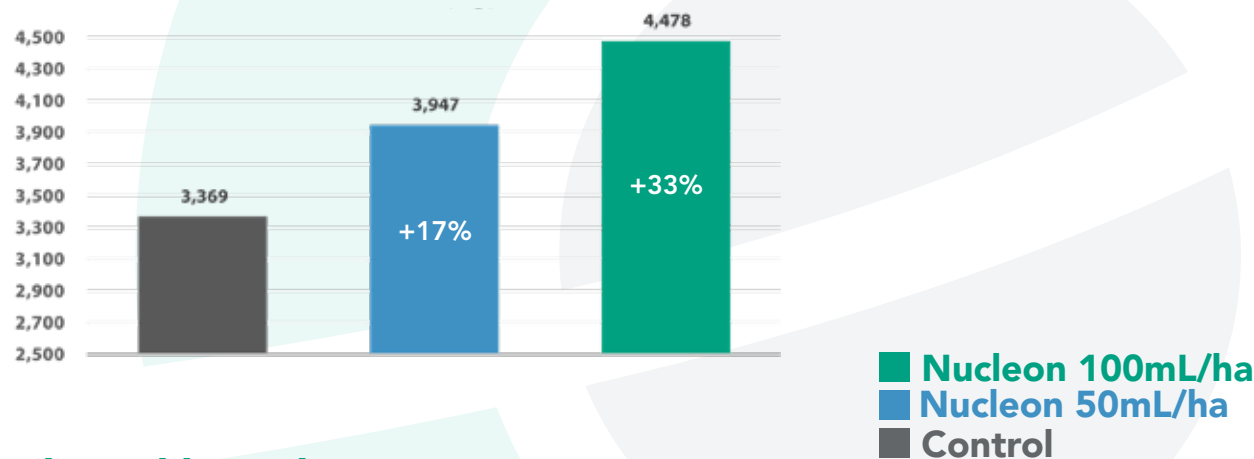
## nUCLEON

### ALMONDS: NUCLEON APPLIED VIA DRIP IRRIGATION

ALMOND CENTRE OF EXCELLENCE LOXTON, SOUTH AUSTRALIA

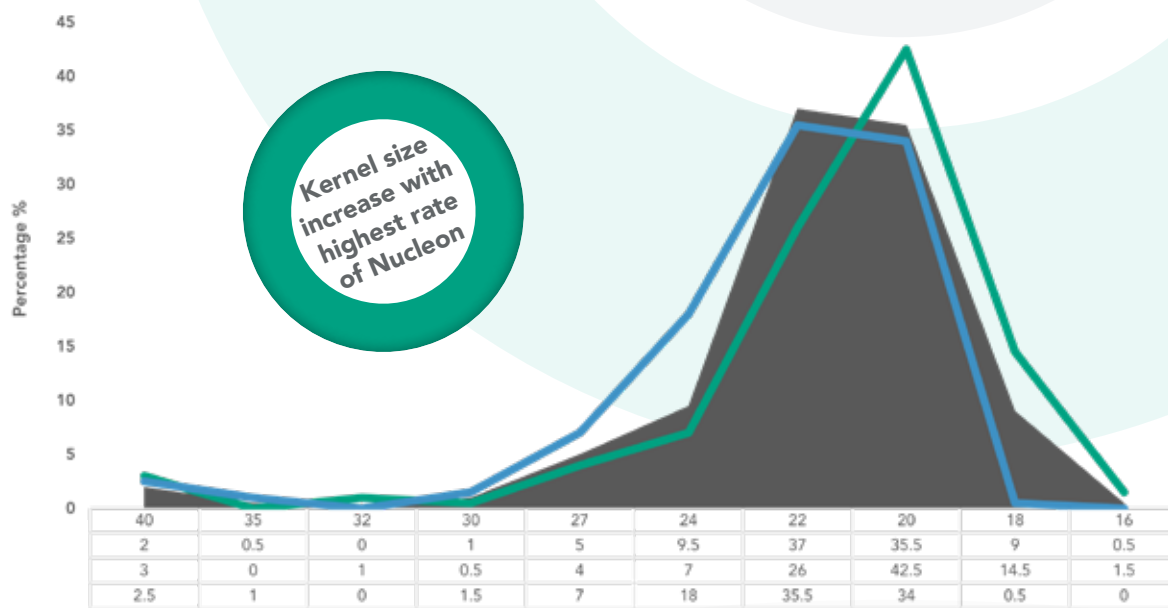
#### Yield summary

Est. yield (kg/ha)



#### Almond kernel size

Kernel size (g)



Kernel size (count) - increasing size -->>

The information provided in this Info Sheet is an extract and does not constitute the full Directions for Use. PLEASE READ THE PRODUCT LABEL THOROUGHLY BEFORE USE.

## NUCLEON

### Nucleon's positive effect on microbial soil indicators

The understanding of microbes and their importance in agriculture, particularly soil health is now becoming well known. Soil microbes interact with all aspects of the soil from biology to inputs, aiding in nutrient availability, regulating plant stress and resilience.

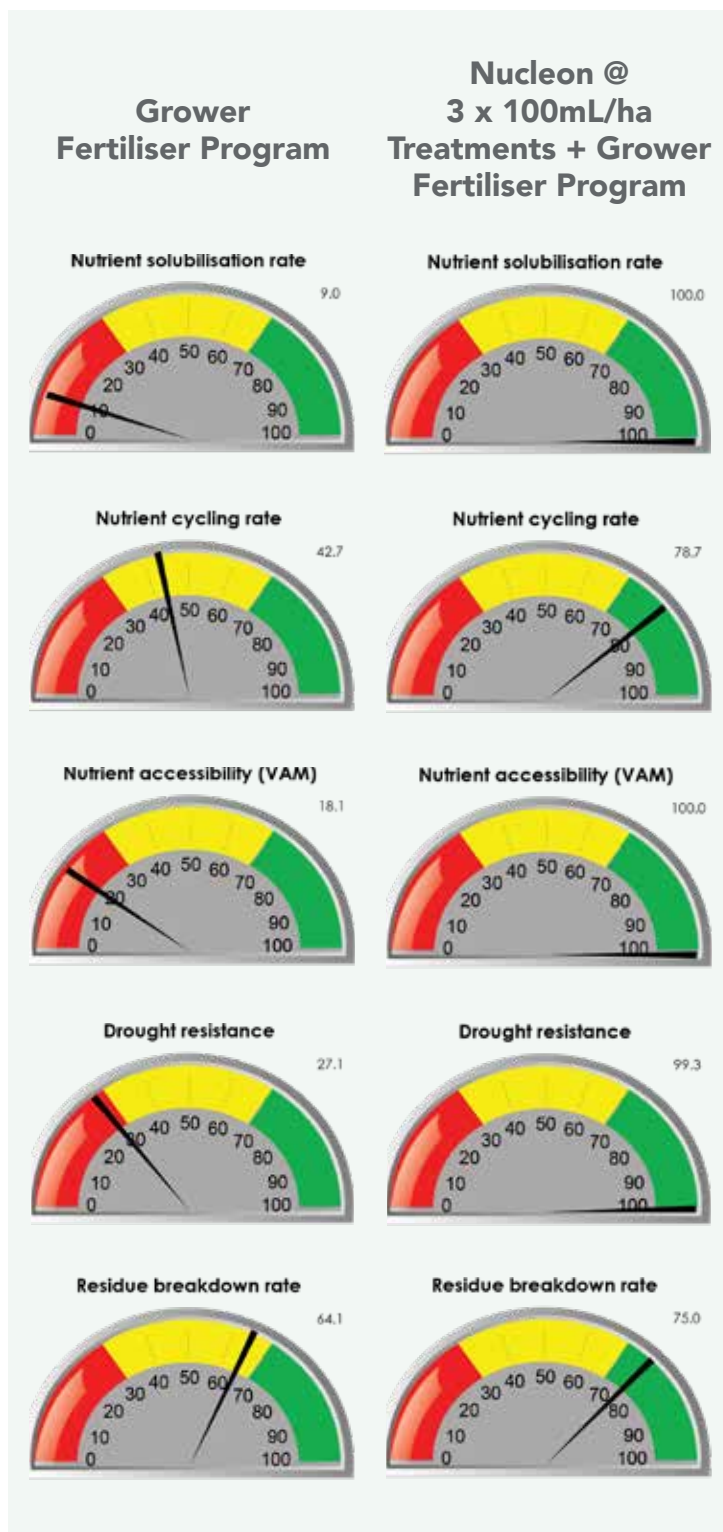
Nucleon aids in the improvement of soil health by improving nutrient release from the organic fraction of the soil and as shown by the Microbe Wise tests it aids in improving the efficiency of microbes present in the soil.

#### Testing Procedure

- 15 cores were selected at random along the length of the treated row from all sides of the tree within the wetted area.
- Sampling was to a depth of 20 cm.
- Sampling date August 15<sup>th</sup> 2022, following 3 x Nucleon treatments the previous growing season
- These were collected in a bucket, from which a smaller sub sample was selected for testing.
- Samples were tested by Microbiology Laboratories Australia - <https://microbelabs.com.au/>

#### Explanations

Microbe Wise for Soil measures the living biomass of key microbial groups important for soil health and productivity directly from your sample. It uses molecular ('DNA type') technology to analyse the unique cell membrane 'fingerprint' of each microbe group to identify and quantify well-know microbial groups essential to important soil processes. The Microbe Wise method allows for some unique features, such as a measure of microbial diversity, a valuable indicator of soil system resilience. Results are presented in a way that allows you to easily assess the microbial health of your soil in detail and indicates what that means in practice. Always compare your results with a control sample. Guide values are included as a help, but because a large number of factors affect microbiology the guide levels may not be optimal for you specific conditions. Visit [www.microbelabs.com.au](http://www.microbelabs.com.au) for more information.





### Trial Comments - Grower Fertiliser Program

The soil indicators ranged from poor to fair. The total mass of microbes in your sample was good. Biomasses of other key desirable microbe groups ranged from poor to good for protozoa. Protozoa, which were good here, are important for nutrient transfer and cycling between soil trophic levels, and can be sensitive to agrochemicals, particularly herbicides. True anaerobes were good, which indicates that this soil was recently not waterlogged, or compacted. Microbial diversity was poor and needs to be improved. The fungi to bacteria ratio was elevated that need to be balanced. These results suggest that management practices should initially focus on building microbial diversity and bacteria community. Re-test periodically, and once biomass has improved concentrate on minimising True anaerobes, building microbial diversity and biomasses of any key desirable groups that remain low.

#### Overall microbial balance

29.4

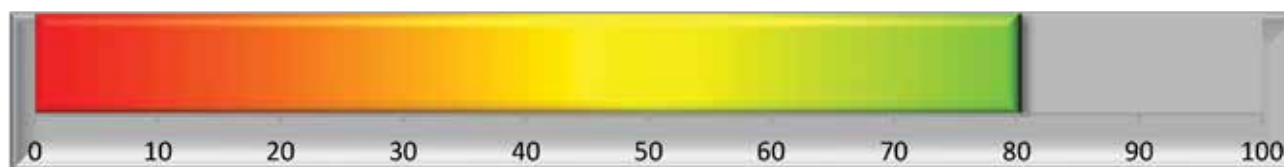


### Trial Comments - Nucleon @ 3 x 100mL/ha Treatments + Grower Fertiliser Program

The soil indicators were all good. The total mass of microbes in your sample was good. Biomasses of other key desirable microbe groups ranged from fair for actinomycetes to good. Protozoa, which were good here, are important for nutrient transfer and cycling between soil trophic levels, and can be sensitive to agrochemicals, particularly herbicides. True anaerobes were good, which indicates that this soil was recently not waterlogged, or compacted. Microbial diversity was poor. The fungi to bacteria ratio was good. These results suggest that management practices should initially focus on building microbial diversity. Re-test periodically, and once biomass has improved concentrate on minimising True anaerobes, building microbial diversity and biomasses of any key desirable groups that remain low.

#### Overall microbial balance

80.3



The information provided in this Info Sheet is an extract and does not constitute the full Directions for Use. PLEASE READ THE PRODUCT LABEL THOROUGHLY BEFORE USE.