

## BiOWiSH® Crop Liquid

### BiOWiSH® Crop Additive Increases Wheat Yield in Northern Victoria

#### Executive Summary

BiOWiSH Technologies Inc. conducted several field studies in Northern Victoria Australia at three separate sites to test the efficacy of BiOWiSH® Crop Liquid coated Monoammonium phosphate fertilizer (MAP) on wheat production. The trials used current farming standard (MAP fertilizer) as the control which was then compared to the control coated with BiOWiSH® Crop Liquid. In all cases, the BiOWiSH® treatments resulted in increased yield, leading to higher profits.

#### Background

##### About BiOWiSH® Crop Liquid

BiOWiSH® Crop Liquid is a microbial additive that can be coated onto dry fertilizer or mixed with liquid fertilizers to create an enhanced efficiency fertilizer with industry-leading shelf life, and consistent results across a broad range of operating conditions and environments, all at a low cost to farmers. BiOWiSH® Crop Liquid enhances native microbial activity in the soil and root development, increasing nutrient availability and improving plant vigor. BiOWiSH® Crop Liquid is proven to enhance the effects of applied fertilizers by optimizing yield potential and soil productivity.

#### Objectives

BiOWiSH® Technologies established farm trials in Northern Victoria, Australia, to test the efficacy of BiOWiSH® Crop Liquid. The focus was on BiOWiSH® Crop Liquid's impact on yield of winter wheat, and the farmer economic benefit. These studies were conducted at three farm sites in Northern Victoria. The study introduced MAP coated with BiOWiSH® Crop Liquid into the wheat growers' standard fertility program. The standard fertility program is the most commonly used fertilizing practice in the region for wheat planting.

#### Implementation Program

The study was a side-by-side farm demonstration study. The control plots were treated with the standard grower program of 100 kg/ha of MAP. Scepter winter wheat cultivar was planted and MAP treatments (see Table 1) were applied on the farms at planting. The trial began in the first week of May and the crop was harvested at maturity in mid-December. The crop was irrigated as required.

### BiOWiSH® Crop Liquid



- Optimizes yield potential
- Increases nutrient availability
- Enhances root development
- Improves plant vigor
- Enhances native microbial activity in the soil
- Improves soil productivity

#### Available Sizes

- 50 gal/190 L
- 264 gal/1000 L

| Treatment          | Planting Fertilization Program | Rate*<br>kg/ha<br>[lb/ac] | Application Phase |
|--------------------|--------------------------------|---------------------------|-------------------|
| Control            | MAP                            | 100<br>[89.2]             | Planting          |
| Control + BiOWiSH® | BiOWiSH Crop Liquid Coated MAP | 100<br>[89.2]             | Planting          |

\*Calculations for conversions between imperial and metric units are based on the original source data; slight rounding differences may occur within reported publication values.

## Economics

The profit change for the Control + BiOWiSH® by \$140.40, \$101.40 and \$152.40 AUD per hectare, respectively, over the control treatment based on a sale price of \$300 AUD/MT for the wheat.

**Table 2: Net Income Gain Across Trials**

| Treatment                     | Profit Change<br>AUD/ha<br>[USD/ac] | Net Income Gain<br>% |
|-------------------------------|-------------------------------------|----------------------|
| Trial 1 Control               | -                                   | -                    |
| Trial 1 Control +<br>BiOWiSH® | 140.40<br>[43.20]                   | 6.3                  |
| Trial 2 Control +<br>BiOWiSH® | 101.40<br>[33.20]                   | 4.9                  |
| Trial 3 Control +<br>BiOWiSH® | 152.40<br>[48.80]                   | 7.7                  |

## Yield

The Control + BiOWiSH® across the three sites increased yield over the standard grower practice by 6.61%, 5.20% and 8.07%, respectively.

**Table 3: Yield Totals for All Treatments**

| Treatment                     | Yield<br>bu/ac<br>[kg/ha] | Yield Increase<br>(%) |
|-------------------------------|---------------------------|-----------------------|
| Trial 1 Control               | 110.2<br>[7410]           | 6.61                  |
| Trial 1 Control +<br>BiOWiSH® | 117.5<br>[7900]           |                       |
| Trial 2 Control               | 102.9<br>[6920]           | 5.20                  |
| Trial 2 Control +<br>BiOWiSH® | 108.3<br>[7280]           |                       |
| Trial 3 Control               | 97.7<br>[6570]            | 8.07                  |
| Trial 3 Control +<br>BiOWiSH® | 105.6<br>[7100]           |                       |

## Conclusion

These trials showed, when coated on to MAP fertilizer, BiOWiSH® Crop Liquid increased crop yield over the control by an average of 6.63%. At the same time, the BiOWiSH® treatment was able to maintain protein content in the wheat.

The average increase in net income across the three winter wheat trial sites in Northern Victoria was \$131.40 AUD higher per hectare (\$41.73 USD/ac) than the standard practice with an average increase in net income gain of 6.3%.

BiOWiSH® Crop Liquid can help wheat farmers achieve greater profits by increasing the yield without depleting protein content of the wheat.



BiOWiSH® is a registered trademark of BiOWiSH Technologies International, Inc.

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