



## MAS-Power<sup>®</sup> Mn

15% Manganese w/v

MAS-Power Mn is a unique formulation designed for use as a premium foliar manganese combined with Engage Crop Solutions Mineral Assimilation System (MAS).

A unique manganese sulphate formulation, which maximises manganese nutrient use efficiency.

A proprietary formulation which breaks away from basic single element products, and provides a complete support package required by the plant.

Provides a superior manganese delivery system which addresses plant health and abiotic stresses as well as maximising the yield potential of the crop.

Improves the quality of the spray tank environment resulting in good chemical compatibility and improved solubility of select products.

### CROPS

Most agricultural and horticultural crops including:

- |  |  |
|--|--|
|  Cereals      |  Sugar Beet |
|  Oilseed Rape |  Peas       |
|  Root Crops   |  Beans      |
|  Potatoes     |  |



Manganese Deficiency

### The role of Manganese

- > Manganese is a trace element which is essential for many plant functions, particularly enzyme systems.
- > Manganese is involved in photosynthesis and change of leaf colour is often the first visual symptom of deficiency.
- > Manganese deficiency seriously impairs crop growth, quality and yield.



Control



MAS-Power Treated

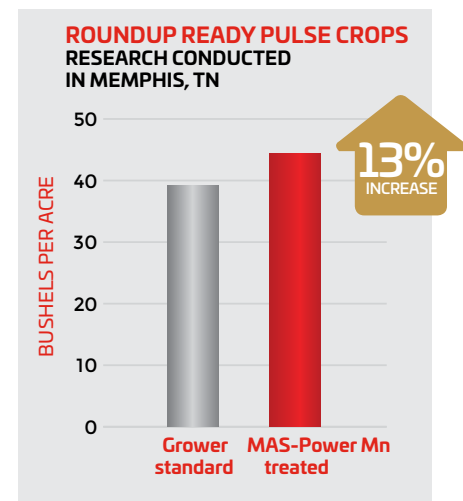
- > Manganese helps with the assimilation of carbon dioxide in photosynthesis (turning light into energy), it aids in the synthesis of chlorophyll and nitrate assimilation. It is essential in the formation of riboflavin (B2), ascorbic acid (antioxidant properties) and carotene (contributes to photosynthesis by transmitting the light energy that plants absorb from chlorophyll).
- > A high soil pH reduces the availability of manganese and a low soil pH will increase the availability of manganese even to the point of toxicity. High applications or soils with high levels of iron can reduce manganese uptake.

### Use

- > To correct manganese deficiency
- > Aids protein synthesis by reducing nitrate accumulation
- > Increases energy transfer during photosynthesis
- > Aids leaf development

### Trial data

Research shows that MAS-Power Mn mixed with glyphosate, increases yields 13% on Roundup Ready Pulse Crops when applied during V5 - V6 growth stages.





## Crop timings and application rates

Crop	No of applications	Timings	Rate litres/ha
<b>Cereals</b>	2	<b>1st</b> 2-6 leaf stage <b>2nd</b> Tillering <b>3rd</b> GS31	3.0
<b>Sugar beet</b>	2	<b>1st</b> 4-6 leaf stage <b>2nd</b> 8-12 leaf stage	3.0
<b>Oilseed rape</b>	2-3	<b>1st</b> 4-6 leaf stage <b>2nd</b> Stem extension <b>3rd</b> Start of flowering	3.0
<b>Brassicac</b>	2-3	As required from tissue analysis 4-6 leaf stage Repeat at 10-14 days intervals	2.0-3.0
<b>Leafy salads</b>	2	As required from tissue analysis Repeat at 10-14 day intervals	1.0-2.0
<b>Potatoes</b>	3	As required from tissue analysis Repeat at 10-14 day intervals	3.0
<b>Root Crops</b>	3	As required from tissue analysis Repeat at 10-14 day intervals	1.5-3.0
<b>Legumes</b>	3	<b>1st</b> 10-15cms tall <b>2nd</b> Early flowering <b>3rd</b> End flowering/pod set	3.0
<b>Top fruit</b>	2-3	<b>1st</b> Pink bud (from known deficiency only) <b>2nd</b> Petal fall <b>3rd</b> If necessary after 10-14 days	2.0-3.0
<b>Stone fruit</b>	As required	As required from tissue analysis Repeat at 10-14 day intervals	1.0-2.0
<b>Soft fruit</b>	As required	As required from tissue analysis Repeat at 10-14 day intervals	1.0-2.0
<b>Ornamentals</b>	As required	As required from tissue analysis Repeat at 10-14 day intervals	1.0-2.0

MAS-Power Mn is compatible with most known pesticides and is ideal to sit within tank mixes. It is advisable to conduct a jar test where tanks mixes contain multiple products or where a new pesticide is being used for the first time.

Water recommendation: 200 litres – 1000 litres/ha depending on crop.

**For more detailed application rates per crop, please visit [engagecropsolutions.com](http://engagecropsolutions.com) or speak to an Engage advisor.**

**Always read the label before use.**

Unit 5 | Town Lane Industrial Estate | Town Lane | Charnock Richard | Chorley | PR7 5XG

**t: + 44 (0) 1257 226590 e: [info@engagecropsolutions.com](mailto:info@engagecropsolutions.com)**  
**[engagecropsolutions.com](http://engagecropsolutions.com)**