NUTRITION THERAPY

Limit the Spread of Fungal Disease in your Crops

Authorised for release by:
Carol Phillips | Executive Consultant Communications and Media

FROM THE ARCHIVES

We revisit parts of a News Publication (NA34) written by Dr Hooshang Nassery, RLF's Head of Technical. It was written and published in 2016. It talks about the prevention of fungal disease by choosing a foliar spray crop nutrition program – termed by him as 'Nutrition Therapy' – because of the known effects that induce disease resistance in plants. This is a useful past publication to revisit, but it should always be appreciated that when looking back some of the events or costings referenced may no longer be current. However, it is always good to look back at some of our previous articles and reports and to remind our customers of some of the published science around RLF products and practices.

A recent Technical Bulletin written by RLF's Head of Technical Dr Hooshang Nassery outlined the current knowledge and thinking around the issue of reducing the pressure of fungal disease with the use of a foliar spray.

Non-virulent pathogens and foliar sprays are known to induce disease resistance in plants.

Dr Nassery stated, "I have used the term Nutrition Therapy to illustrate the dual role of nutrients in disease prevention. In Nutrition Therapy we aim at optimum, or above optimum levels of some nutrients, to firstly increase plant resistance to disease, and secondly suppress pathogen activity".

He went on to say, "that the well-known effect of elements such as phosphorus, potassium, calcium, zinc, manganese, copper, boron and silicon in increasing disease resistance of plants are due to the different effects of these nutrients and their interactions on the structure and physiology of plants. So, by way of example:

- copper is involved in forming stronger physical barrier (e.g. lignifications),
- calcium protects cell membrane integrity and cell leakage whilst it is strengthening the cell wall,
- potassium maintains leaf turgidity, photosynthesis and phloem mobility, and
- zinc, manganese, iron and copper have, (apart from other roles), a unified effect on photosynthesis thereby preventing chlorophyll oxidation and cell degeneration".

Help is at Hand for Farmers

This is good news for farmers and growers in Australia who are facing unprecedented weather systems right now. Record-breaking rainfall on the east coast continues, and many crops are struggling to cope with the rapid invasion and escalation of fungal disease. Australian farmers on the east coast are 'doing it tough'.

In the current wet and cold season, the spread of fungal disease is rapid, and the yield damage is likely to be severe. Even though the use of fungicides is repeatedly employed, the grower should keep in mind that both prevention and suppression of disease is also related to the nutritional status of the crop.

It is well known that bacteria and fungi due to their high surface to volume ratio and simple body structures, are more susceptible than crops to foliar sprays that have concentrated trace elements. It therefore follows, that by increasing the trace element concentrations in a foliar fertiliser you could selectively, and directly suppress fungal and bacterial activity (i.e. reduce disease pressure), whilst at the same time improving the plant's resistance to disease.

Members of RLF's east coast Sales and Support team know that growers of chickpea (for instance) are at risk of losing their crops to fungal disease if the current weather patterns continue - this is a tragedy for these growers, although this is not the only crop type to be effected as these weather conditions apply enormous pressure to all crops in the effected regions. The photos show just how damaging this infestation can be on the crop, but the message that it can be mitigated through the use of a Broad-spectrum Ultra Foliar product is a strong one.

Disease in Chickpea
Ref : Victorian Agricultural Department

RLF Products that Help

RLF Ultra Foliar products are specially engineered to supply a high level of trace elements and phosphorus that are highly beneficial in preventing the spread of the disease when applied either on its own, or when tank mixed with fungicides. The dual role of foliar fertiliser in disease control (i.e. Nutrition Therapy) should not be missed in any opportunity that compatible fungicide sprays are applied. If potassium is expected to be suboptimal, addition of potassium sources to Plasma Power or Plasma Fusion tank mix is highly beneficial.

Ultra Foliar

Plasma Power is a nutritionally balanced Foliar product with the buffering capacity and wetter to effectively enter the leaves within a very short time-frame for rapid uptake and utilisation by the crop. It has high phosphorus and balanced trace elements that improves crop health and quality and is all contained in a High-analysis Broad-spectrum solution. RLF's specially engineered nutrient delivery system (NDS) delivers the nutrient package through the leaf. Plasma Power gives greater plant protection, more growth and improved yield qualities. This is achieved with just one product that delivers its nutrient package 'tailor-made' to suit the crop.

Plasma Fusion is a High-analysis Broad-spectrum Solution (HBS) that applies nutrient delivery technology to deliver its nutrient package through the leaf. It is highly concentrated and applies the optimum amount of 12 nutrients with a single application. Because of this Plasma Fusion endows the plant with the ability to guard against soil nutrient variability and deficiency and ensures greater plant protection, increased growth and improved yield qualities. Plasma Fusion Ultra Foliar is considerably more efficient, as the formulation is absorbed directly through the leaf cell walls and into the plant for immediate use. Unlike other foliar products it is not inhibited by the need to access the plant via the stomata.