

{slide=1. **Foliar application of KNO₃ in Soybean** } The effect of potassium nitrate based foliar sprays on growth and yield of soybean fertilized with increasing KCl dose rates at basal dressing.

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{/slide}{slide=2. **KNO₃ Improves Rice Stalk Strength**} By David Dunn and Gene Stevens, University of Missouri-Delta Center, dunnd@missouri.edu

Dr David Dunn – scientist at the Delta Ag Center in Qulin, Missouri, USA – held this presentation at the 34th Rice Technical Working Group Meeting in Hot Springs, Arkansas on February 29, 2012.

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{/slide}{slide=3. **Foliar Applications in Rice** }By Tran Thuc Son, Le Xuan Anh, Yoav Ronen, and Harmen Tjalling Holwerda

Trials conducted in Vietnam with spring and summer rice grown on soils low in soil exchangeable K showed positive yield and net income responses from one to three foliar treatments with potassium nitrate. Grain yields and net income were improved when a portion of the basal KCl was replaced with the three foliar KNO₃ sprayings.

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{/slide} {slide=4. **Increased Rice Yield in Vietnam** }**Summary**

In Vietnam, 4 trials in total on spring and summer rice, grown on a heavy and a sandy soil, were conducted with 1, 2 or 3 foliar applications each containing 9 kg KNO₃/ha/spray, applied at one or more growth stages (active tillering, panicle initiation and/or end of flowering), in order to test the effect on yield and farmers' net income.

The highest increases in average yield (+15%; + 840 kg/ha) and average farmers' net income (+13%; + 150 US\$/ha) were obtained with 3 foliar sprays of 9 kg KNO₃/ha/spray each at the growth stages of active tillering, panicle initiation and end of flowering in combination with a standard base dressing, compared to the farmers' standard practices.

Interestingly enough, 50% less KCl applied in the base dressing, in combination with 3 foliar sprays of 9 kg KNO₃/ha/spray each at active tillering, panicle initiation and end of flowering, resulted in 10% more yield and 12% more farmers' net income, compared to the farmers' standard practices.

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{/slide} {slide=5. **KNO₃ Superior K-Source for Almonds**} Almonds are a highly valuable and profitable crop for Californian farmers. However, it is not easy to maintain high yielding crops that bring in premium, high quality harvests and steady pricing. One of the farmers' major challenges is proper nutrition, especially the critical nutrient of Potassium (K). In addition, growers are faced with shortages of water, government imposed restrictions to prevent nitrogen waste, and increasing salinity levels in both water and soil. Choosing the proper K fertiliser source that maximises water and nutrient use efficiency, minimizes salinity build-up, and yet continues to enhance both yield and quality is vital. In a recent trial, the use of potassium nitrate in the fertigation clearly demonstrated to have a benefit for the grower, combined with Fan jet irrigation.

This trial in California - coordinated by UC Davis - took place over a period of 4 years, 2011-2014. The project was sponsored by PNA, aiming to find a solution for the challenges faced by almond growers, by considering the 4 R's of fertilisation practice.

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{/slide} {slide=6. **KNO₃ Increases Wheat Grain Yield**}

On behalf of the Potassium Nitrate Association (PNA), Landlab research station in Quinto Vicentino (Italy), conducted a trial to test the effect on winter wheat yield of two foliar applications with potassium nitrate (KNO₃) in spring.

The time and placement of foliar application of potassium nitrate caused 17% yield increase even at the highest K level in the base dressing. The foliar application of KNO₃ is promoting a higher yield compared to the untreated entries and the foliar applied K is efficient for increase of yield, mainly due to more ears/m

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. The yield results are clear and statistically strongly supported at a very high level of confidence.

The study is confirming the benefit of potassium nitrate applied twice as foliar spray, in the key moment of the crop cycle, at 10 kg/ha/application over all four levels of K in the base dressing nutrition.

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