



## **Study the effect of the soil conditioner Emerg-ion™ on Alfalfa Yield in Central Arizona in 2015 / 2016**

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To study the effect of the soil conditioner Emerg-ion™ on alfalfa yield in central Arizona, 12 plots were measured and marked at the University of Arizona Maricopa Ag Center Research Farm. Each plot measured 20 x 20 ft with 10 ft alley between plots. Emerg-ion™ treatments were applied on November 30, 2015, after the hay cut and clearing the bales, as outlined in Table 1. The treatments were applied using a carried sprayer with a 5 ft boom and compressed CO<sub>2</sub> tank (Fig. 1). All sprays were delivered at 20 GPA (ca. 30 psi, TeeJet TwinJet 8003 nozzles, broadcast over the top). Each treatment was replicated four times in randomized complete plot design.

Evaluations of treatment effects were based on the yield of 75 sq. ft. from each plot. The fresh yield was harvested mechanically from the middle of each plot on March 9<sup>th</sup>, 2016 using Carter™ harvester. Fresh yields for each plot were calculated as Tons/Acre adjusted to 12% moisture assuming 20% dry matter (DM). Statistical analyses were conducted using Systat™ 11 software. Means Comparisons were made for each pair using Student's t test.

### **Results**

Overall, the higher rate of Emerg-ion™ treatment, 0.75 gallon per acre, has significantly higher yield compare to the untreated check and the 0.5 gallon per acre treatments (Table 2). There was no statistically significant different between the untreated check and the 0.5 gallon per acre treatments (Table 2). Rain occurred sporadically starting about a week after treatments. Rain and cooler than normal temperatures resulted in slower growing alfalfa and longer time between cutting.



**Table 1:** Treatments and rates of Emerg-ion™ trial in alfalfa at Maricopa Agricultural Center in 2015 / 2016.

<b>Treatment</b>	<b>Unit</b>	<b>Rate</b>
<b>Emerg-ion™</b>	<b>Gallon/Acre</b>	<b>0.75</b>
<b>Emerg-ion™</b>	<b>Gallon/Acre</b>	<b>0.5</b>
<b>UTC</b>	<b>-</b>	<b>-</b>

**Table 2:** Yields (ton / Acre) for treatments of Emerg-ion™ trial in alfalfa at Maricopa Agricultural Center in 2015 / 2016

<b>Treatments</b>	<b>Yield (ton / Acre)</b>
<b>Emerg-ion™ (0.75 Gallon/Acre)</b>	<b>1.17<sub>a</sub></b>
<b>Emerg-ion™ (0.50 Gallon/Acre)</b>	<b>0.99<sub>b</sub></b>
<b>UTC</b>	<b>0.98<sub>b</sub></b>



**Fig. 1:** Application of Emerg-ion™ trial treatments in alfalfa at Maricopa Agricultural Center in 2015/2016.

