

**ACHIEVING FINAL PLANT UNIFORMITY IN  
FIELD GROWN COTTON WITH A PIX  
(MEPIQUAT CHLORIDE) WICK APPLICATOR**

**A. M. Stewart, K. L. Edmisten, R. Wells  
and J. M. Rinehardt**

**North Carolina State University**

**Abstract**

One potential advantage of a wick application of mepiquat chloride is that it applies the chemical only to plants that are taller than the height at which the wick is set. The vast majority of cotton fields are non-uniform, and contain areas in which cotton growth is often delayed and short. By using a wick applicator for early applications and not applying mepiquat chloride to the plants in these shorter areas of a field, then following with a broadcast sprayed application, there is the potential to achieve a more uniform plant height across the field. The wick uniformity trials are investigating this potential at two locations in 1999. Experimental design was a split plot with subplots being 4 rows planted on time and 4 rows planted approximately three weeks later. Treatments to the whole plot include sprayed and wicked applications, various rates, and timings of mepiquat chloride triggered by either the growth of stage of the early planted or late planted cotton.

In terms of plant height, delaying mepiquat chloride resulted in a generally less uniform crop, compared to timing applications, with a wick or spray, to the earliest portion of the crop (Table 1). While not significant in every case, treatments with a wick followed by a spray showed a trend to be more uniform in plant height (Table 1). Yield and maturity were not affected by any treatment (Table 1, and yield data not shown). These results are from one year and are not conclusive. The data do, however, indicate two things; 1) timing mepiquat chloride applications the earliest cotton may be advantageous in terms of overall maturity, and 2) use of the wick applicator for an initial application of mepiquat chloride, followed by a spray shows potential for achieving crop uniformity.

Table 1. Treatment effects on plant height and nodes above white flower at cutout. Data pooled across two locations in 1999.

Application Method	1 <sup>st</sup> Appl.	2 <sup>nd</sup> Appl.	Timing <sup>1</sup>	Difference <sup>2</sup>	
				Ht.	NAWF
	---oz acre <sup>-1</sup> ---			inches	
Check				6.3 abc	3.3
Spray	6	8	Early	3.0 cd	3.3
Spray	11	8	Early	5.8 abc	3.1
Spray	16	8	Early	4.8 bcd	3.7
Spray	6	8	Late	7.6 ab	2.6
Spray	11	8	Late	9.1 a	3.0
Spray	16	8	Late	9.6 a	2.3
Wick	6	8	Early	3.7 bcd	2.9
Wick	6	8	Late	1.6 d	2.9
LSD <sub>0.05</sub>				4.0	NS
CV(%)				69.9	33.9

<sup>1</sup> Indicates which cotton was used to determine 1<sup>st</sup> and 2<sup>nd</sup> applications. 1<sup>st</sup> application made at 10 node stage and 2<sup>nd</sup> application made at early bloom of either early or late planted cotton. Wick treatments set to treat only early planted cotton at 10 node stage and then sprayed at early bloom according to either early or late planted.

<sup>2</sup> Indicates differences between early and late planted values. Means within a column followed by the same letter do not differ significantly when P<0.05.