

RE-EVALUATING MEPIQUAT CHLORIDE USE IN BOLLGARD II® COTTON IN AUSTRALIA**M.P.Bange****S.D. Williams****Commonwealth Scientific and Industrial Research Organisation****Narrabri, New South Wales****Australia****Abstract**

During the reproductive growth phase, there is competition for water, nutrients and carbohydrates between vegetative and reproductive growth in cotton plants. Plant growth regulators (PGR) such as mepiquat chloride (anti-gibberellin, MC) may be useful to slow new vegetative growth and instead promote reproductive growth. Previous PGR recommendations in Australia were based on conventional cotton cultivars rather than high lint-retention Bollgard II® cultivars. This paper describes field experiments over two four growing seasons (2012 -2016) with the main objective being to re-evaluate the use of Vegetative Growth Rate (VGR) for early season MC decisions in Bollgard II. We also evaluated the impact of high rates of late season MC applied at cutout to help with crop cessation. Early timing experiments also evaluated a multiple rate approach versus a single application of MC. Results showed that that relative yield responses to VGR differed compared with past experiments. At high VGRs yield was improved with the application of MC, however at low VGR yield reductions were substantially greater than previously reported. Yield reduction was associated with the higher fruit load in Bollgard II crops. No effects of late season MC on yield or quality were recorded. Use of MC on Bollgard II crops require caution especially if crops have low VGRs, and this information will be used to revise industry recommendations.