MISSISSIPPI SOYBEAN PROMOTION BOARD
PROJECT NO. 44-2017 (YEAR 1)
FINAL REPORT

Title: Evaluation and Development of Effective Tank Cleanout Procedures Following Use of Auxin Herbicides

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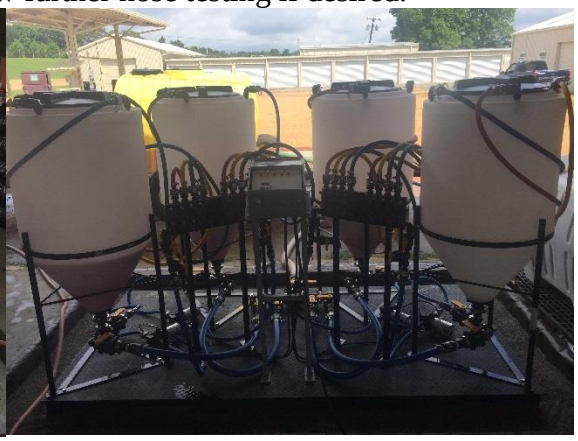
OBJECTIVES AND PROGRESS/ACTIVITY

Per the wishes of the MSPB, this project has been expedited as much as possible to try to complete the research during this funding period. While most of the objectives will be completed with multiple locations and years, some will have to continue without funding in 2018.
In order to expedite the evaluations, a tank-farm-apparatus was constructed to minimize the generation of rinseate that has to be disposed of and to decrease the amount of time necessary for doing each treatment. As shown in the below photos, each tank represents a replication. Furthermore, each tank also has 4 different hoses on it that will allow further hose testing if desired.

A.) A comparison of 8 commercially available tank cleaners for their ability to remove dicamba from contaminated sprayers. Studies were conducted in 2016 and 2017 in Starkville and Brooksville, MS. Preliminary data show that there is no significant difference among cleaners and a series of three water rinses alone for the removal of dicamba when the cleaner is immediately cleaned following an application.
B.) An evaluation of the tank cleaners used in objective A to determine if they produce a phytotoxic response in soybeans when applied alone and when tank mixed with Roundup PowerMax. Studies were conducted in 2016 and 2017 and revealed that no tank cleaner, alone or in combination with Roundup PowerMax, produced phytotoxic responses in soybeans.
C.) Evaluating which sequence of water and cleaner rinses is most effective in the removal of dicamba from sprayer systems. Studies were initiated in 2017 in Starkville and Brooksville, MS and will be replicated in 2018. Preliminary data reveal that the addition of

multiple tank cleaners during a cleanout procedure may aid in the removal of dicamba from contaminated sprayer systems.

D.) Evaluating the optimal rinse volume for removal of dicamba from contaminated sprayers. Studies were initiated in 2017 in Starkville and Brooksville, MS, and will be repeated in 2018. Preliminary data show a significant decrease in percent visual injury 28 days after treatment (DAT) when rinse volumes greater than 10% are used. There is, however, no significant decrease in percentage visual injury 28 DAT when rinse volumes are greater than 20% of the tank's volume.

E.) Evaluating the effectiveness of standard cleanout procedures following various incubation periods from contamination to clean out. Field studies will be conducted in 2018 and 2019.