Herbicide-resistant common ragweed (*Ambrosia artemisiifolia*) in soybean is prevalent on Maryland’s Lower Eastern Shore and Southern Maryland, and resistance to three herbicide families have been documented (glyphosate, ALS-herbicides, and PPO-herbicides). Early-season management of common ragweed is strongly dependent upon reducing seedling emergence and controlling ragweed populations prior to soybean planting. Therefore these studies will evaluate reducing ragweed germination and early-spring growth through the combination of delaying cover crop termination in order to increase cover crop biomass and competition with weeds, and herbicide control.

### Hypotheses
- Delaying cover crop burndown will reduce herbicide-resistant common ragweed emergence and growth
- Various residual herbicide products will reduce herbicide-resistant common ragweed emergence and growth

### Methods
- On-farm trials located at two sites on Lower Eastern Shore of Maryland with a history of herbicide-resistant common ragweed
- Treatments in cover crop termination/residual herbicide timing study: cover crop termination on 4 Apr, 29 Apr, or at soybean planting, with residual herbicide applied either at cover crop termination, at soybean planting, or not at all (Figure 1a)
- Treatments in residual herbicide study: cover crop termination 29 Apr, with no residual herbicide, Command (clomazone), Linex 4L (linuron), Dimetric (metribuzin), Command + Linex, Command + Dimetric, or Linex + Dimetric applied at soybean planting (Figure 1b)
- Randomized complete block design with four replications
- Measurements include common ragweed density and height every seven days following ragweed germination and soybean yield

### Results
- When herbicide was applied only at cover crop burndown, common ragweed was more prevalent when cover crops were terminated on 4 April than when terminated 29 April or at soybean planting (Figure 2).
- Delaying cover crop burndown until planting (“planting green”) and applying herbicide only at soybean planting resulted in lower common ragweed prevalence in soybean than applying herbicide twice—at 4 April cover crop burndown and at soybean planting—regardless of whether residual herbicide was included at planting or not (Figure 3).
- There was less common ragweed in soybean when residual herbicide was applied at planting (late-May to early-June) versus at cover crop burndown (2 to 4 wks prior to planting) (Figure 4).
- Residual herbicides decreased ragweed prevalence compared to the no residual herbicide control at one location, but this was not observed at the second location (Figure 5).

### Conclusions
- Ragweed emerged in early May in 2019
- Presence of cover crop may reduce ragweed, but herbicide timing seems more important
- “Planting green” + herbicide application at planting that included residuals provided good control of ragweed
- Soybean yield was not affected by delaying cover crop burndown or by using any of the residual herbicides