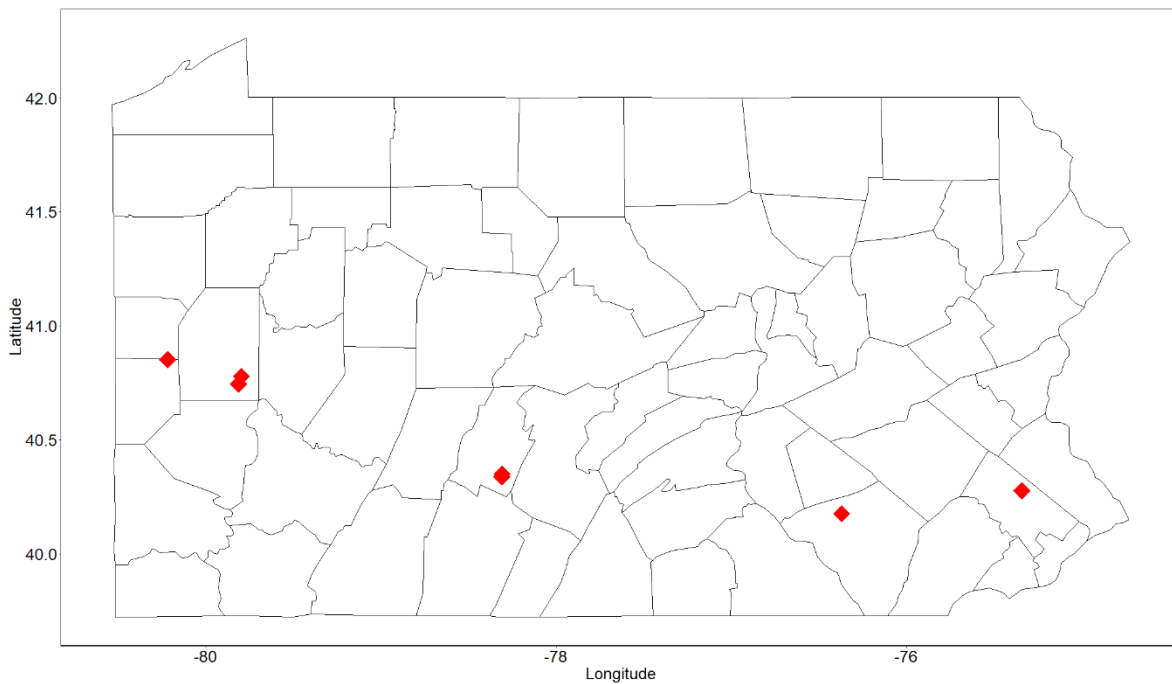


**PROJECT TITLE:** Establishing an herbicide resistance monitoring program for Pennsylvania soybean growers

**LEAD PI:** Caio Brunharo, Assistant Professor, Applied Weed Physiology Laboratory

### Semi-annual report

The goal of this project is to establish an herbicide resistance monitoring program to provide timely detection of resistant weeds for the Pennsylvania soybean farming community. As the first step towards this goal, we are currently conducting a survey to determine a “baseline” herbicide resistance presence in the Commonwealth. To date, we have focused our efforts on sampling annual ryegrass from eight soybean fields that survived herbicide applications. The sampling locations are available in the map below (Figure 1). We continue to sample fields with annual ryegrass escapes, and expect this number to increase in the next weeks. Several summer weeds are now close to completing their life cycles (Palmer amaranth, waterhemp, common ragweed, foxtails), and we will initiate sampling in the next weeks as well. Once the season is over, we will move our work to a control environment facility where collected populations will be tested to 12 herbicides (Classic, Pursuit, FirstRate, XtendiMax, EnlistOne, Metribuzin, Roundup PowerMAX, Reflex, Ultra Blazer, Callisto, Select MAX, and Fusilade).



**Figure 1.** Annual ryegrass populations (8) collected to date.