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**SCN Coalition: Monitoring SCN populations in Ohio**

**Project Number 19-R-25**

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**Quarterly Report – SCN Coalition Sampling**

1. Monitor soybean cyst nematode populations in Ohio for the number of eggs/sample
2. Determine which source of resistance for SCN, Peking or PI 88788, will be most effective across Ohio
3. Evaluate additional management practices that limit the impact of soybean cyst nematode in Ohio

**Objective 1. We have received 300 samples during 2019 to date. With another 16 in February. These are still pending so the numbers below have not changed.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SCN Population Level  (eggs/100 cc) | Total fields  2018 | % total processed | Total fields in 2019 | % of total processed |
| None Detected | 89 | 37.4 | 110 | 53.6 |
| Trace (40-200) | 58 | 24.4 | 51 | 24.8 |
| Low (200-2000) | 58 | 24.4 | 26 | 12.6 |
| Moderate (2000-5000) | 22 | 9.2 | 16 | 7.8 |
| High (5000 +) | 11 | 4.6 | 22 | 10.7 |
| Total | 238 |  | 205 |  |

Preliminary take home messages

* 60% of the Fields sampled in 2018 and 2019 in Ohio have detectable levels of SCN
* 35% of these have detectable populations (>200)
* 16% were at economically damaging levels – do you know your number?

**Objective 2**.

The samples from objective 1 that have egg counts higher than 500 eggs/100 cc of soil will be moved into the greenhouse screen to determine the SCN type. Populations of SCN will first be increased on Williams 82. Test lines [PI548402 (Peking), PI88788, and PI437654] and positive controls (Lee74, Williams 82) will be inoculated with 2500 eggs/second stage juveniles to determine relative virulence.

Table 2. Completed SCN Type Tests – March 2020– Summary of completed populations

41 populations completed to date. Of these Peking was resistant to 20 populations while PI 88788 still had high levels of resistant (<10% of susceptible control) to only 5 populations. Additionally, 24 of the populations could reproduce on PI 88788 at levels of 30 to 60% of the susceptible. These levels can cause measurable declines in yield based on studies in Iowa.

|  |  |  |
| --- | --- | --- |
| **RF % of Susceptible** | **PEKING** | **PI88788** |
| <10 (resistant) | 20 | 5 |
| 20-Oct | 9 | 3 |
| 20-30 | 9 | 9 |
| 30-40 | 2 | 10 |
| 40-50 | 1 | 8 |
| 50-60 | - | 5 |
| >60 | - | 1 |
| TOTAL | 41 | 41 |
|  |  |  |

**Objective 3.**

Several different SCN management studies are in progress.

1. A study that is evaluating if Rye has any influence on SCN populations was planted again for the third year with a cover crop.
   1. Spring soil sampling and processing was completed.
   2. Data analysis is in progress
   3. Note – this field was passed to Laura Lindsey
2. Field experiments at 2 locations with high SCN populations were established, data for SCN populations at planting, at harvest, stand counts and ratings for Sudden death syndrome was collected. Harvest at both sites was completed and data was sent to companies. Final counts of SCN populations are still in progress. Planning is in progress for SCN studies at Western for the 2020 season.