

Whitefly Adults

Predators per 100 Sweeps

Number of leaves infested with 3 or more adults	Percent infested leaves	Average per leaf	Number of Crab spiders needed to provide biocontrol
1	3.4	0.3	1
2	6.7	0.6	1
3	10	0.8	1
4	13	1.0	1
5	17	1.3	1
6	20	1.5	1
7	23	1.8	2
8	27	2.1	2
9	30	2.3	2
10	33	2.6	2
11	37	2.9	2
12	40	3.2	2
13	43	3.6	3
14	47	3.9	3
15	50	4.3	3
16	53	4.7	3
17	57	5.1	4
18	60	5.5	4
19	63	6.0	4
20	67	6.5	4
21	70	7.1	5
22	73	7.7	5
23	77	8.4	6
24	80	9.2	6
25	83	10.2	7
26	87	11.3	7
27	90	12.8	8
28	93	14.9	9
29	97	18.4	12
30	100	34.9	21



THE UNIVERSITY OF ARIZONA

COLLEGE OF AGRICULTURE AND LIFE SCIENCES

COOPERATIVE EXTENSION
Arizona Pest Management Center

Making Whitefly & Natural Enemy Counts

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Counting Whiteflies

- Sample 30 leaves (15 from 2 areas in the field).
- Score leaf with 3 or more adults as infested.
- Score disk (7/8 inch diameter) as infested if large nymphs are present.
- Sum infested leaves.
- Determine % infested leaves & disks from tables.
- Obtain corresponding average number of adults per leaf and nymphs per disk.
- Use IGRs when there are at least 1 nymph per disk and 3–5 adults per leaf.
- For all other chemistry, spray at 5 adults per leaf.

Sweep Nets

Our cotton industry standard sweep net should be 15 inches (38 cm) in diameter with a strong galvanized metal hoop frame, sturdy wooden ≥2 foot (60 cm) dowel handle with a strong, reinforced canvas bag. Guidelines depend on **100 sweeps total, usually taken as four subsamples of 25 sweeps each.**

Counting Natural Enemies

Invert the net and push the pinched off tip of the net through the opening of the net, slowly releasing your grip to allow insects to crawl or fly out. Count the natural enemies (**Geocoris big-eyed bugs, Orius minute pirate bugs, Collops beetles, and crab spiders**). Plant material can be slowly lifted out, inspected and discarded. Once all the plant material is sorted, thoroughly inspect the net seam for any remaining natural enemies using a hand lens if necessary. **Compare counts of each of the 4 natural enemies per 100 sweeps to the tables provided.**

Whitefly Large Nymphs

Predators per 100 Sweeps

Number of discs infested with large nymphs	Percent infested discs	Average per disc	Number of Big Eyed Bugs needed to provide biocontrol	Number of <i>Collops</i> needed to provide biocontrol	Number of Pirate Bugs needed to provide biocontrol
1	3.3	0.0	0	0	0
2	6.7	0.1	1	1	1
3	10	0.1	1	1	1
4	13	0.2	1	1	1
5	17	0.3	1	1	2
6	20	0.3	1	1	2
7	23	0.4	1	1	2
8	27	0.5	1	1	3
9	30	0.6	1	1	3
10	33	0.7	2	1	4
11	37	0.8	2	1	4
12	40	1.0	2	1	5
13	43	1.1	2	2	6
14	47	1.2	2	2	6
15	50	1.4	3	2	7
16	53	1.6	3	2	8
17	57	1.8	3	2	9
18	60	2.0	3	2	10
19	63	2.2	4	3	11
20	67	2.5	4	3	13
21	70	2.8	5	3	14
22	73	3.1	5	4	16

- Whitefly densities lower than the yellow zone do not require a spray.
- When whiteflies are in the yellow zone (approaching threshold) and each of the 4 predators are below the critical levels indicated, then the pest manager should consider advancing a spray as soon as possible.
- When whiteflies are in the green zone (at threshold) and 1 or more of the predators indicated are at or above critical levels shown, whitefly sprays can be deferred.
- Whitefly densities higher than the green zone will require a spray regardless of predator densities.

Lower density white zone indicates no need for a spray; Higher white zone indicates a spray is needed right away.

Whitefly populations approaching threshold

Whitefly populations at threshold for fully selective Stage I Chemistry (Courier, Knack, Oberon)