

# **2018 PA Industrial Hemp Research Pilot Program**

**Assessment of four varieties of industrial hemp grown in Bucks County with an emphasis on seed production coupled with a survey of associated insects**

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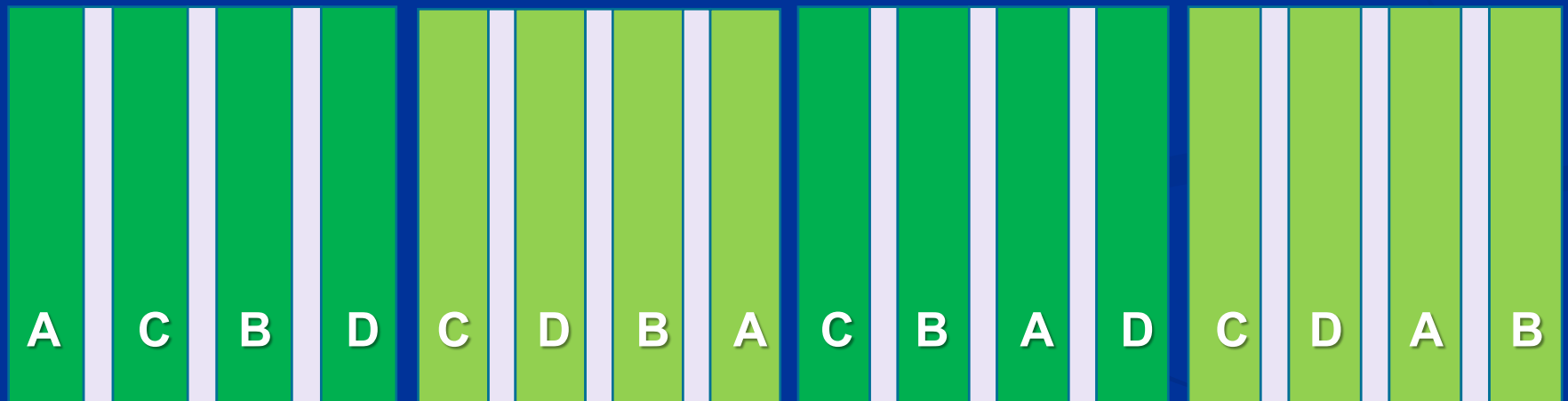
## Plot labels for each variety

A=Katani

B=CFX-2

C=CRS-1

D=Grandi



Rep 1

Rep 2

Rep 3

Rep 4

## 2017 Trial –planted 161JD 6/10

- Same plot treatment
- Transplants at 4 leaf stage
- Males rogued
- Hand weeded every two weeks
- Drip irrigated

## Results less than optimal

- Weeds overgrew plots
- Over 50% mortality

## 2018 Trial planted 126JD 5/6

- Same plot treatment
- Transplants at 4 leaf stage
- Males not rogued
- Black fabric was used  
to manage weeds
- Drip irrigated



## Industrial Hemp field trial 2018

Table 1. Number and height of four varieties of industrial hemp.

| n/rep      | <u>Variety</u> |      |        |      |        |      |        |      |        |      |        |      |        |      |        |      |
|------------|----------------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|
|            | Grandi         |      |        |      | Katani |      |        |      | CFX-2  |      |        |      | CRS-1  |      |        |      |
|            | 31             | 25   | 29     | 25   | 25     | 29   | 24     | 21   | 22     | 22   | 23     | 33   | 23     | 27   | 25     | 25   |
| Ht. inches | 21.0           | 20.1 | 21.0   | 20.1 | 22.2   | 18.8 | 18.5   | 16.6 | 20.9   | 21.9 | 23.7   | 25.5 | 29.9   | 32.8 | 31.2   | 35.8 |
| Ht. cm     | 53.5           | 50.9 | 53.4   | 51.1 | 56.3   | 47.7 | 47.1   | 42.2 | 53.1   | 55.5 | 60.2   | 64.8 | 76.0   | 83.2 | 79.1   | 91.0 |
| total avg  | 20.6in         |      | 52.3cm |      | 19.1in |      | 48.5cm |      | 23.3in |      | 59.1cm |      | 32.5in |      | 82.6cm |      |

Table 2. Seed weight per plant with combined total weights of seed of four varieties of industrial hemp.

| n (total plants) | <u>Variety</u> |  |       |  |          |  |       |  |         |  |        |  |         |  |        |  |
|------------------|----------------|--|-------|--|----------|--|-------|--|---------|--|--------|--|---------|--|--------|--|
|                  | Grandi         |  |       |  | Katani   |  |       |  | CFX-2   |  |        |  | CRS-1   |  |        |  |
|                  | 110            |  |       |  | 99       |  |       |  | 100     |  |        |  | 100     |  |        |  |
| total lb/kg      | 2lb 2oz        |  | .96kg |  | 1lb 15oz |  | .88kg |  | 2lb 4oz |  | 1.02kg |  | 4lb 4oz |  | 1.93kg |  |
| total g/plant    | 8.75g          |  |       |  | 8.88g    |  |       |  | 10.2g   |  |        |  | 19.28g  |  |        |  |

## Greenhouse study

- Same 4 varieties
- Dutch bucket hydroponics system
- Coconut coir/perlite mix
- Three densities per bucket:
  - 1, 2, 3 plants
- Transplanted at 4 leaf stage
- 18/6 photoperiod
- Fertilizer mix for cannabis





**Plants 10-12 feet tall  
little difference on  
growth within  
or between varieties  
regardless of density**



# Insect survey-weekly visual inspections



**Last year leaf miners were prevalent  
This year not so much**

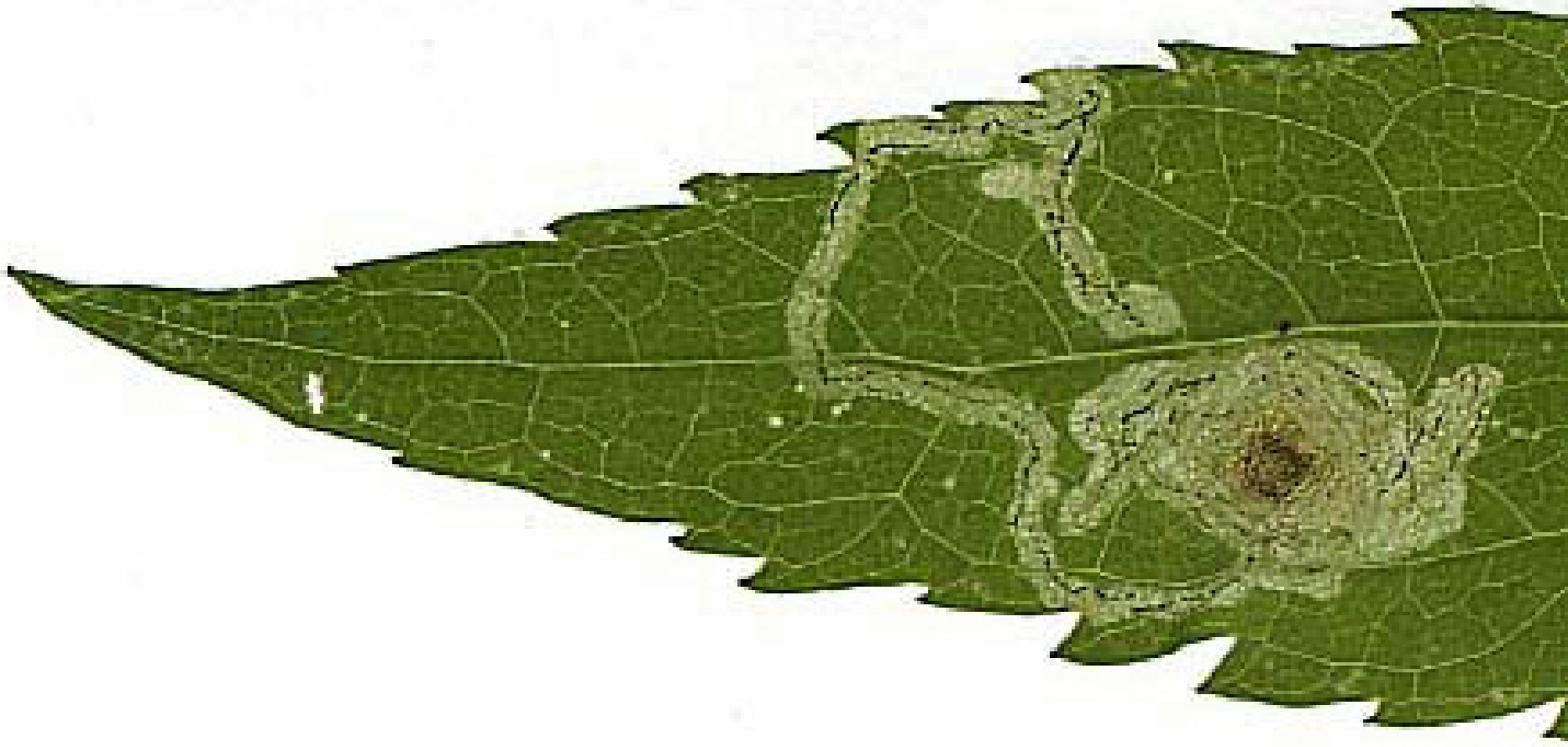
# Agromyzidae: leaf miners





Table 3. Number of Agromyzidae mines on leaves from four varieties of industrial hemp.

| n/rep       | <u>Variety</u> |   |    |   |        |   |    |   |       |   |   |   |       |   |    |   |
|-------------|----------------|---|----|---|--------|---|----|---|-------|---|---|---|-------|---|----|---|
|             | Grandi         |   |    |   | Katani |   |    |   | CFX-2 |   |   |   | CRS-1 |   |    |   |
|             | 3              | 0 | 16 | 2 | 8      | 0 | 11 | 2 | 4     | 3 | 8 | 3 | 13    | 6 | 11 | 7 |
| total mines | 21             |   |    |   | 21     |   |    |   | 18    |   |   |   | 37    |   |    |   |



**Serpentine mines are between the layers of the cells in a leaf**

**Tarnished plant bug**  
*Lygus lineolaris*



UGA1323072

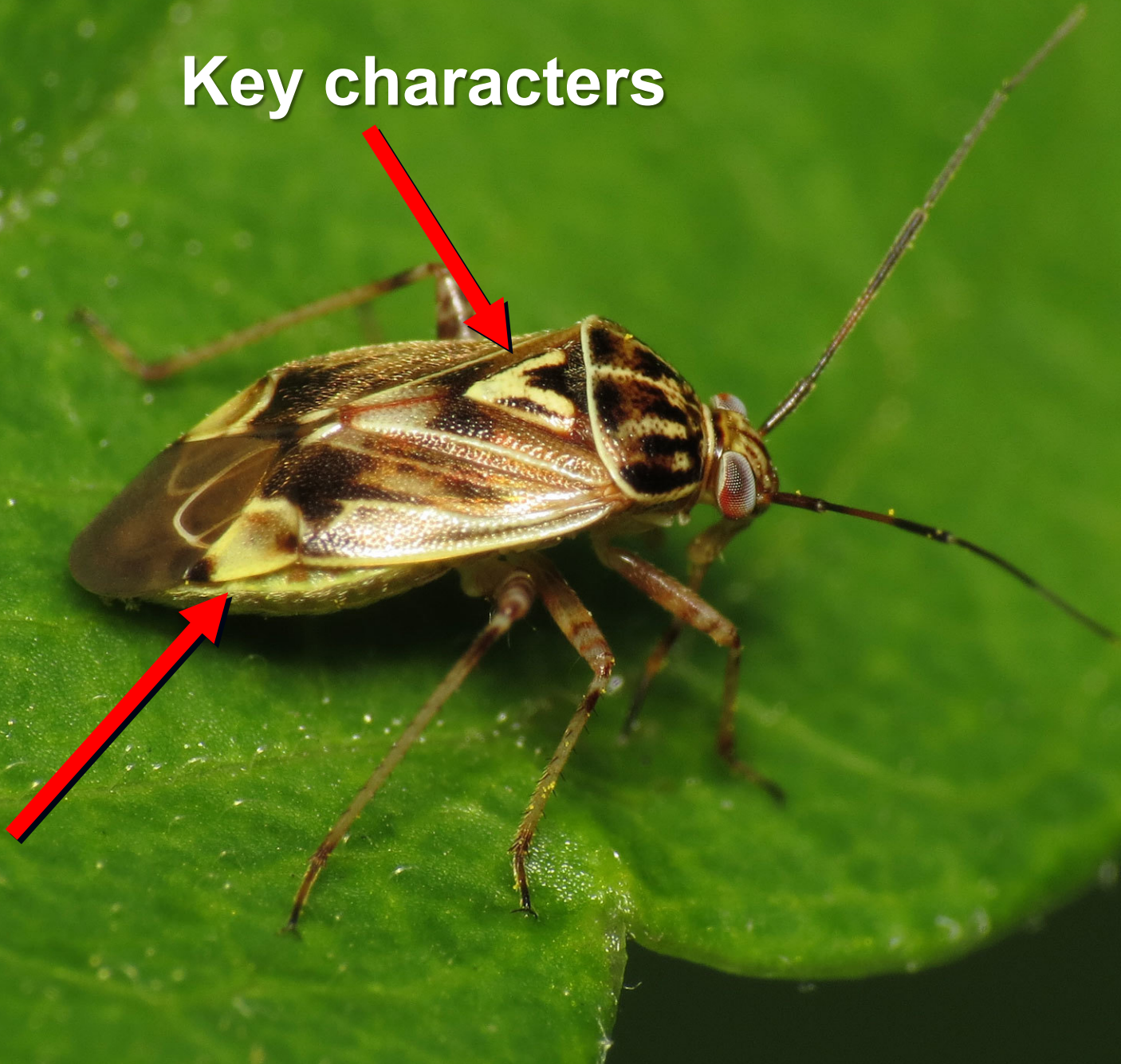
**First week of August  
5 or 6 per plant**

**Third week of August  
15-20 per plant**

**Concentrated in the buds**



# Key characters





**Incidence of other Insects that occurred in low numbers included:**

**Aphids**

**Pentatomidae-stink bugs**

**Acrididae-grasshoppers**

**Thysanoptera-thrips**

**We thought  
these symptoms were related to a  
viral infection....  
we were unable to maintain  
it in new plants**



