# Study of incidences and control of major pests on yam, *Dioscorea* spp. in Hualien area[1]

Ta-Chi Yang[2]

Forteen major pests of yam have been identified in Hualien area. There were no pests on yam at the early stage of planting. The mirid bug (*Harpedona marginata* Distant), scale insect (*Planococcus minor* (Maskell)) and leaf mites could cause leaf damage of yam after April and the population reached the peak between June and September. Thrips (*Dendrothripoides innoxius* (Karny)) and leaf beetle (*Lilioceris* sp.) damaged yam bud and caused bud wither. There were anthoracose (*Colletotrichum* spp.) and stem blight (*Phompsis* spp.) caused leaves and stems damage. Bulb mites (*Rhizoglyphus robini* Claparede) and *Meloidogyne* sp. may damage yam root tuber. A 100% control rate of root-knot nematode was obtained by dipping yam tube in 1000 ppm 24% oxamyl solution for 20 minutes. The density of mirid buds was decreased significantly when treated with imidacloprid, bifenthrin, acetamiprid or deltamethrin. The damage of anthoracose could be control by using of benomyl, prochloraz or carbendazim+ dithianon.

Key words: yam, *Dioscorea* , incidence, pest, control

[1.]Research article No. 187 of Hualien District Agricultural Research and Extension Station.

[2.] Assistant agronomist, Yilan Branch Station, Hualien DAIS.

表一、毆殺滅不同浸漬時間對山藥根瘤線蟲防治效果

Table 1. Control of root-knot nematode on yam by different dipping time of oxamyl solution

| Treatment | 1 day | | 3 days | | 5 days | |
|---|---|---|---|---|---|---|
| | No. nematodes | Control rate（%） | No. nematodes | Control rate（%） | No. nematodes | Control rate（%） |
| 24% oxamyl (1000ppm)dipping 10 minutes | 2.4b* | 75.0 | 1.0b | 89.7 | 0.2b | 97.9 |
| 24% oxamyl (1000ppm)dipping 20 minutes | 1.6c | 83.3 | 0.6b | 93.8 | 0b | 100 |
| 24% oxamyl (1000ppm)dipping 30 minutes | 1.4c | 85.4 | 0.2b | 97.9 | 0b | 100 |
| control | 9.8a | - | 9.6a | - | 9.6a | - |

*: Values followed by the same letter in the row are not significantly different at 5% level according to LSD.

表二、葉片殘留藥劑對山藥黑盲椿之防治效果

Table 2. Control of *Harpedona marginata* of yam by residue of different pesticides on leaf surface

| Treatment | Control rate (%) | | | |
|---|---|---|---|---|
| | 1 day | 3 days | 5 days | 7 days |
| 50％ Cartap SP 1000 ppm | 58.2 | 75.5 | 86.0 | 100.0 |
| 25％ Buprofezin WP 1500 ppm | 50.9 | 81.1 | 84.0 | 75.0 |
| 25％ Pymetrozine WP 2000 ppm | 87.3 | 94.3 | 100.0 | - |
| 20％ Acetamiprid SP 4000 ppm | 100.0 | - | - | - |
| 2.8％ Bifenthrin EC 1500 ppm | 100.0 | - | - | - |
| 50％ Malathion WC 800 ppm | 100.0 | - | - | - |
| 2.8％ Deltamethrin EC 1500 ppm | 98.2 | 100.0 | - | - |
| 9.6％ Imidacloprid SL 4000 ppm | 100.0 | - | - | - |
| 4.5％ Azadirachtin EC 1000 ppm | 76.4 | 84.9 | 90.0 | 100.0 |
| Neem oil 600 ppm | 56.4 | 75.5 | 74.0 | 75.0 |

表三、直接噴施藥劑對山藥黑盲椿之防治效果

Table 3. Control of *Harpedona marginata* of yam by spraying directly of different pesticides on leaf surface

| Treatment | Control rate (%) | | | |
|---|---|---|---|---|
| | 1 day | 3 days | 5 days | 7 days |
| 50％ Cartap SP 1000 ppm | 95.2 | 97.4 | 97.2 | 100.0 |
| 25％ Buprofezin WP 1500 ppm | 85.7 | 87.2 | 91.7 | 100.0 |
| 25％ Pymetrozine WP 2000 ppm | 100.0 | - | - | - |
| 20％ Acetamiprid SP 4000 ppm | 100.0 | - | - | - |
| 2.8％ Bifenthrin EC 1500 ppm | 100.0 | - | - | - |
| 50％ Malathion WC 800 ppm | 95.2 | 94.9 | 97.2 | 100.0 |
| 2.8％ Deltamethrin EC 1500 ppm | 100.0 | - | - | - |
| 9.6％ Imidacloprid SL 4000 ppm | 100.0 | - | - | - |
| 4.5％ Azadirachtin EC 1000 ppm | 100.0 | - | - | - |
| Neem oil 600 ppm | 81.0 | 82.1 | 80.6 | 83.3 |

表四、六種不同藥劑對山藥炭疽病之防治

Table 4. Control effect of 6 different fungicides on anthracnose of yam

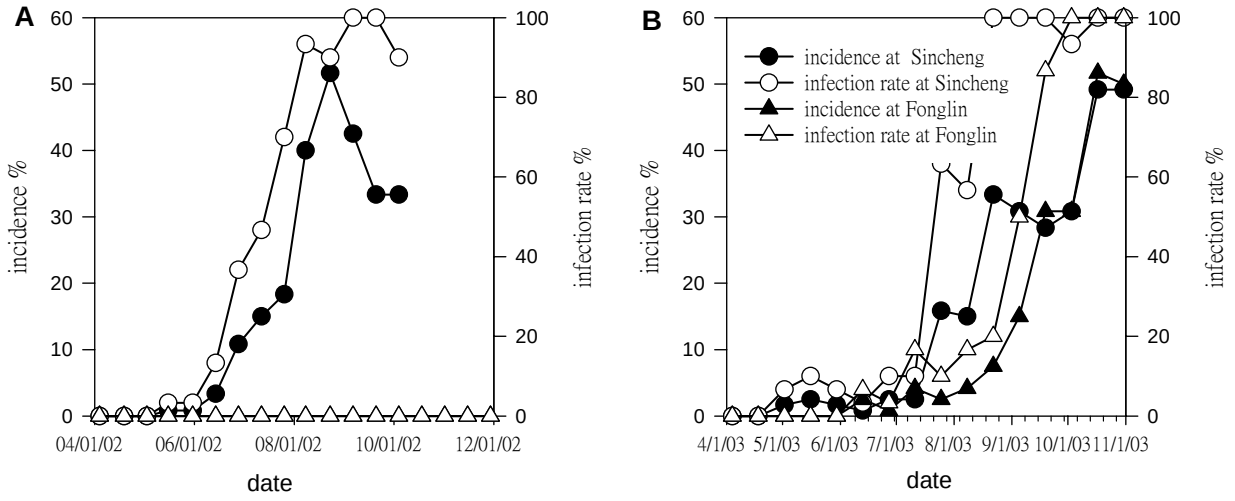
| | Chloroth alonil 700 ppm | | Benomyl 3000 ppm | | Azoxystrobin 1000 ppm | | Dithianon 700 ppm | | Prochloraz 3000 ppm | | Carbendazim+ Dithianon 1000 ppm | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 一 | 二 | 一 | 二 | 一 | 二 | 一 | 二 | 一 | 二 | 一 | 二 |
| *Colletotrichum* (Sincheng) | ± | - | + | ++ | + | + | + | ± | + | ++ | + | ++ |
| *Colletotrichum* | ± | ± | + | ++ | + | + | + | ± | + | ++ | + | +++ |

(Fonglin)

Gloeosporium + + + ++ ± ± ± ± + ++ + +++

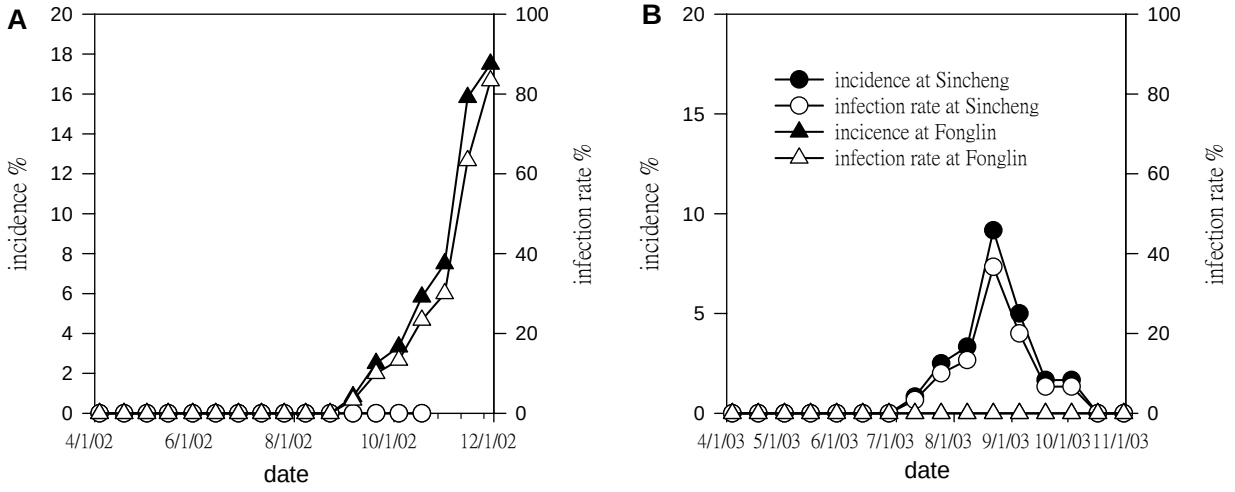
(Fonglin)

+：inhibitive -：not inhibitive ±：inhibitive or not



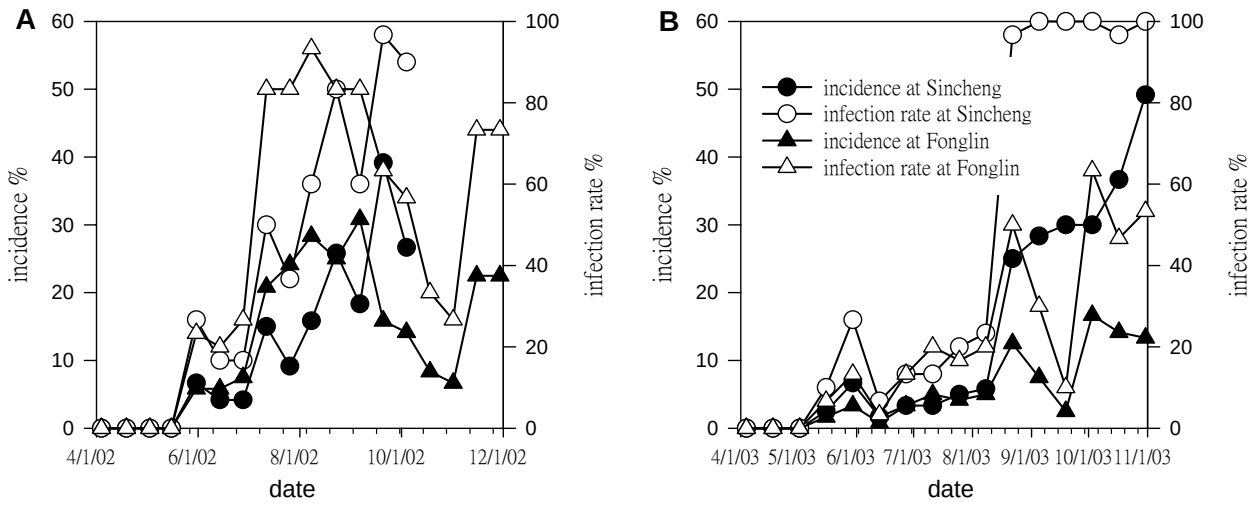

圖一、91~92 年新城、鳳林地區山藥黑盲椿爲害度及山藥被害株率。

Fig. 1. The incidence and infection rate of mirids of yam at Sincheng and Fonglin areas in 2002 and 2003.



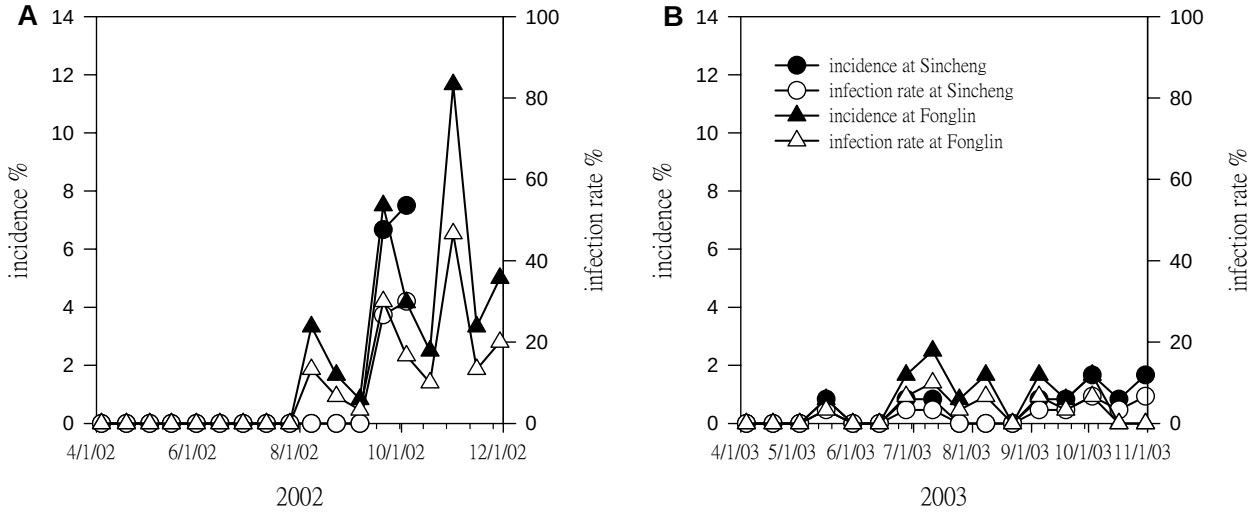

圖二、91~92 年新城、鳳林地區山藥葉蠕爲害度及山藥被害株率。

Fig. 2. The incidence and infection rate of mites of yam at Sincheng and Fonglin areas in 2002 and 2003.




圖三、91~92 年新城、鳳林地區山藥炭疽病罹病度及山藥罹病株率。

Fig. 3. The incidence and infection rate of mites of yam at Sincheng and Fonglin areas in 2002 and 2003.




圖四、91~92 年新城、鳳林地區山藥莖枯病罹病度及山藥罹病株率。

Fig. 4. The incidence and infection rate of stem blight of yam at Sincheng and Fonglin areas in 2002 and 2003.