

Fruit damage by *Dicyphus cerastii* and *Nesidiocoris tenuis* (Hemiptera: Miridae) on tomato

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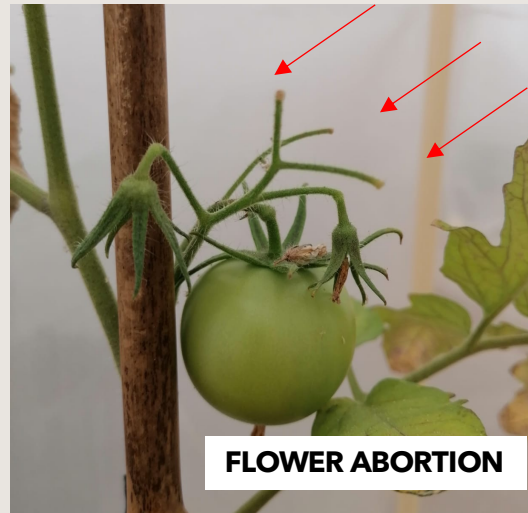
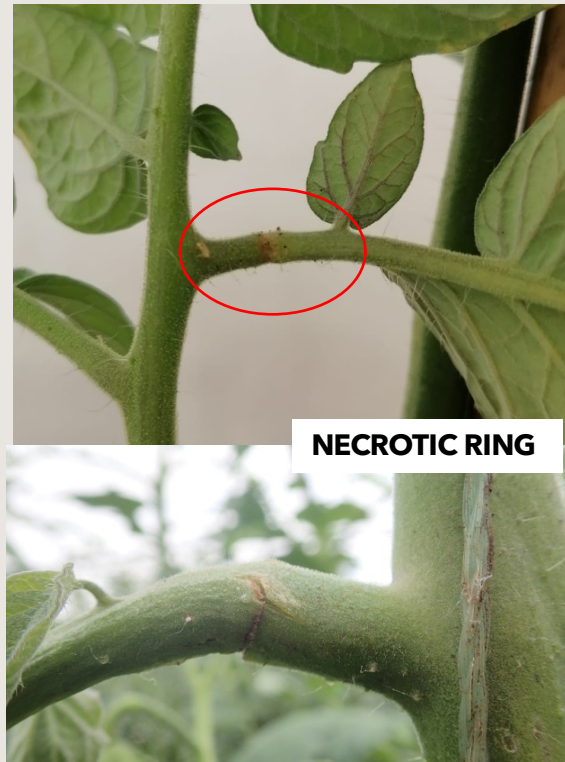
Miridae (Insecta: Hemiptera)

- Zoophytophagous mirid species are important biological control agents in several crops
- However, their phytophagy can produce economically important damage



Damage

- *Nesidiocoris tenuis*



- *Dicyphus cerastii*



Fruit damage bioassay

- For each species (*N. tenuis* and *D. cerastii*): 3 adult females or 3 nymphs placed in plastic cups with one tomato fruit
- 4 treatments with 15 replications: a) fruit only; b) fruit with water; c) fruit with water and alternative food; and d) fruit with alternative food but no water
- Unripe and fully ripe fruits
- 24 h



Fruit damage bioassay

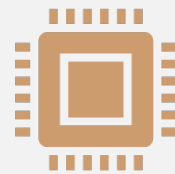
- Injury was considered as a puncture surrounded by small whitish or yellowish halo
- counted under a stereomicroscope with a magnification of 50x



Analysis



Classification tree methods:
ctree and random forest



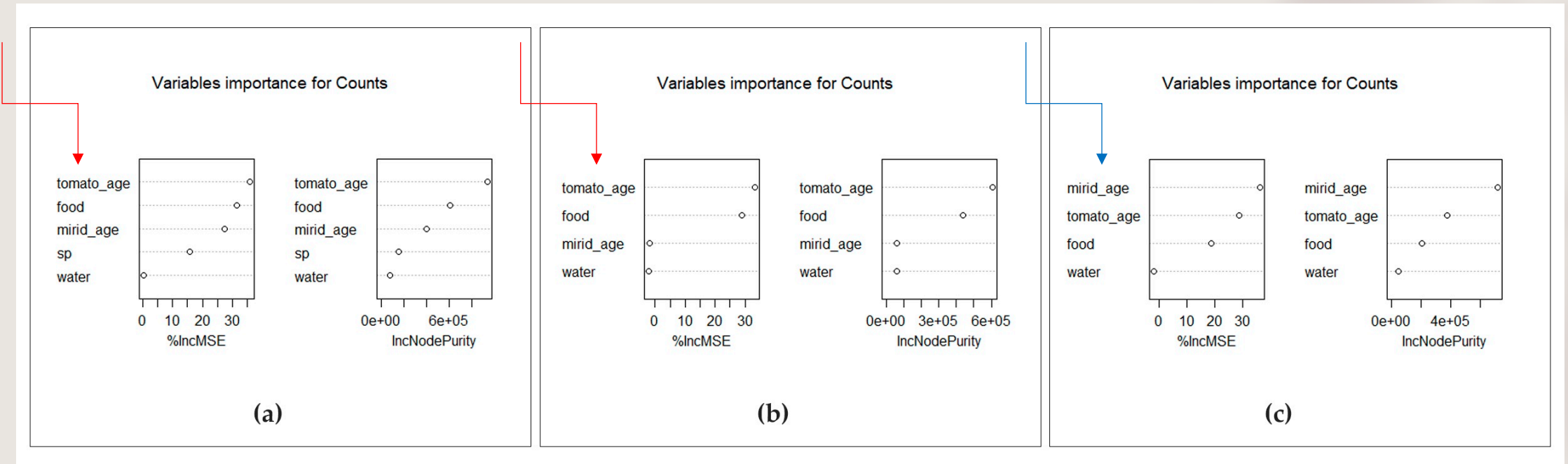
R software version 4.1.0
implemented in RStudio
version 38 1.4.1106

Results: variables importance plot (random forest)

Both species

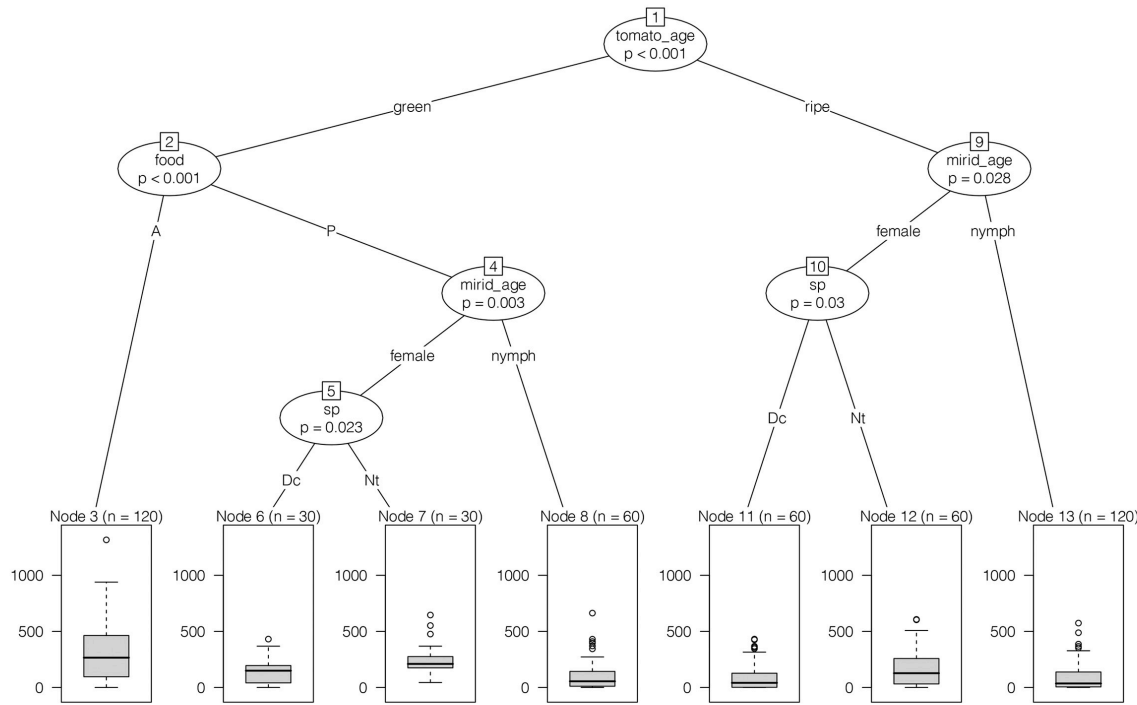
Dicyphus cerastii

Nesidiocoris tenuis

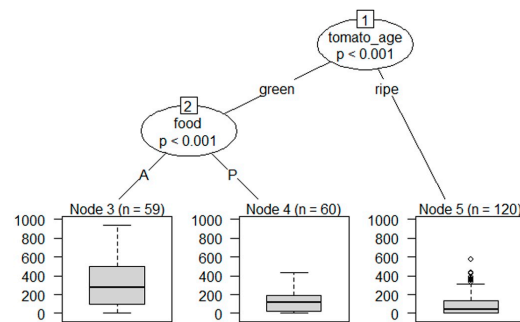


Results: ctree

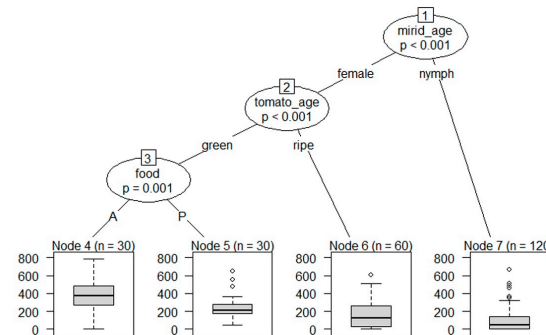
- For both species combined unripe fruit suffered more damage.
- The presence of prey only reduced damage on unripe fruits.
- Overall, *Nesidiocoris tenuis* females produced more damage than *Dicyphus cerastii*.



(a)



(b)



(c)

- (a) Combined analysis
- (b) *D. cerastii* only
- (c) *N. tenuis* only

Thank you!

