

## Research articles

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### Need for surveillance in case of the invasive thrips, *Thrips parvispinus* (Karny) on chilli (*Capsicum annuum*) (Including IPM recommendations)

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The objective of this article is to sensitize all chilli growers and stakeholders in the light of the recent outbreak of the invasive thrips, *Thrips parvispinus* (Karny) on chilli (*Capsicum annuum*) in Andhra Pradesh, Telangana and Karnataka in 2021 (Sireesha *et al.*, 2021, Anitha *et al.*, 2021 and Nagaraju *et al.*, 2021). There is an urgent need for a coordinated surveillance across the country in all the chilli growing areas.

Ever since Mound and Collins (2020) reported the presence of the South-East Asian thrips, *Thrips parvispinus* (Karny) (Thysanoptera: Thripidae) on *Gardenia* plants in Greece, the fear of it traversing through the Indian sub-continent was not ruled out. Basically, a species of SE Asia with regional distribution starting from Thailand, Malaysia to New Guinea and northern Australia, its introduction to Greece was mainly through flowers of *Gardenia* sp. from Indonesia (Johari *et al.*, 2014). Though a serious pest on chilli, it has also been reported on, papaya (Hawaii) beans and solanaceous crops like chilli, potato,

brinjal (Murai *et al.*, 2009). In India, the alarm bells were rung when Tyagi *et al.* (2015) recorded *T. parvispinus* on papaya in Bengaluru, Karnataka. Subsequently, Rachana *et al.* (2018) and Roselin *et al.* (2021) reported *T. parvispinus* in 2018 on ornamental, *Dahlia rosea*, from Karnataka, India. These two Indian reports amply confirmed that *T. parvispinus* has come to stay and would infest economically important crops, especially chilli (Figs 1 & 2).

The earliest incidence of *T. parvispinus* was noticed in major chilli growing mandals of Andhra Pradesh *ie.* Chilakaluripeta and Prathipadu (16.09N 80.16E and 16.16N 80.22E) during January 2021, when chilli crop was at harvesting stage and subsequently in other major chilli growing mandals (Sireesha *et al.*, 2021). The infestation peaked in the next crop between November and December 2021 (K. Sireesha *et al.*, 2021, Anitha *et al.*, 2021 and Nagaraju *et al.*, 2021). Andhra Pradesh is the largest producer of chilli and contributes 38%, whereas Guntur alone contributes 15 %

of total production in India<sup>6</sup>. In Guntur district, chilli is cultivated in an area of 1,06,656 ha. Here the loss is estimated at 12% of the cropped area (uprooted) and about 50% yield loss on an average (Sireesha *et al.*, 2021).

As chilli is an important domestic and export market crop that is grown extensively as mono-crop in Andhra Pradesh, Telangana and Karnataka together comprising >70% area of the country strict surveillance is 2022 is advocated during the future seasons, using visual and trap catch documentation and additionally in all chilli growing areas.

The risk of *T. parvispinus* potentially able to spread and infest crops in neighbouring chilli growing states in India and in neighboring countries like Sri Lanka, Nepal, Bhutan and Myanmar, cannot be ruled out. An added threat is to capsicums grown in greenhouses, on which too it has been reported (Tan *et al.*, 2015). So, networked surveillance to forewarn farmers and exporters, to lower risk of loss is a high priority.

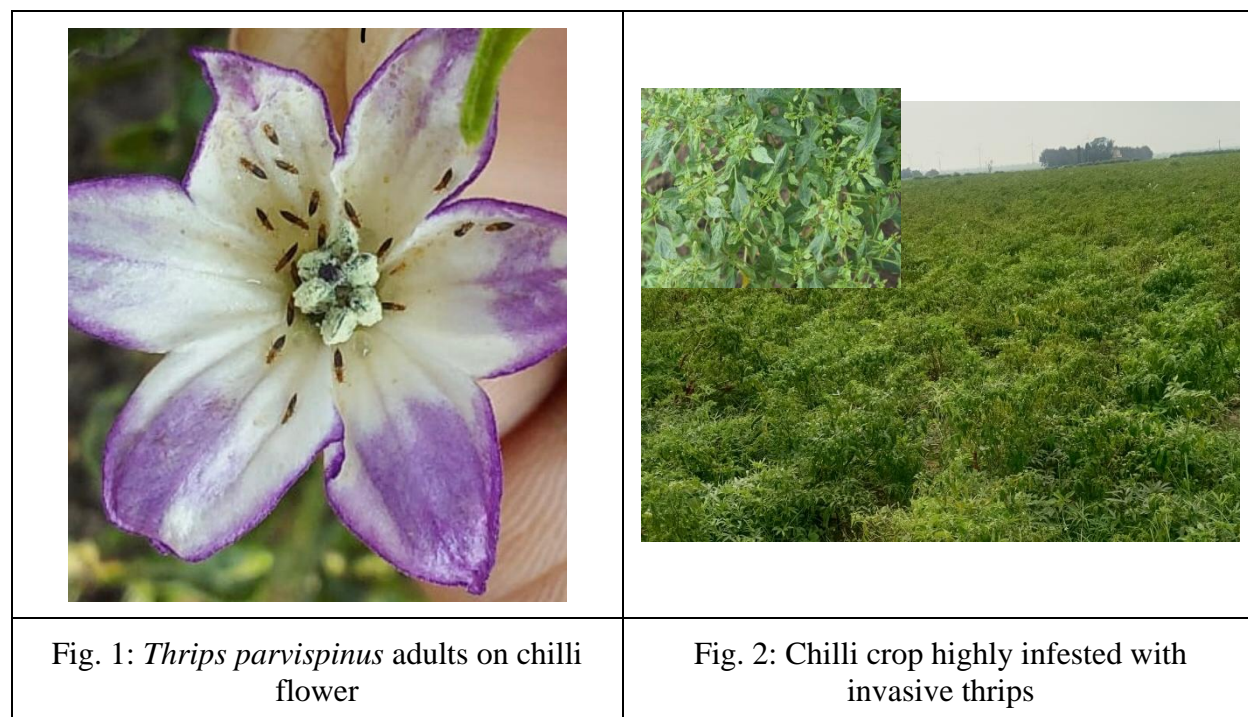
### **Integrated control advisory for thrips complex in chilli**

1. Seed treatment with Imidacloprid WS@ 12 gm/Kg
2. Drenching liquid Arka Microbial Consortium (AMC) @ 5ml/litre in seed beds and prior to transplanting in main field (This is a product of ICAR-IIHR, Bangalore)
3. Add neem cake @200Kg/acre at transplanting along the rows of the plants
4. Spray Rashvee liquid herbal volatile soap @ 3 ml/litre, 2 weeks after transplanting or neem soap (IIHR) 5-10gms /litre
5. After two weeks of above, spray Rashvee liquid herbal volatile soap @ 3ml/litre or pongamia soap (IIHR) @ 5-10gm/litre
6. Spray vegetable special (IIHR), one month after transplanting @5gm/litre (This can be repeated before flowering).
7. Erect 50 blue sticky traps/acre one month after transplanting
8. If thrips become serious, spray Fipronil 5SC @ 1.5ml/litre
9. Spray delivery should be rotated from below to top, to ensure spray droplets also falling on underside of the leaves
10. After fruit set, if needed spray safer biopesticides as indicated above
11. mbination of Entomopathogenic Nematode+ Beauveria + Metarhizium + Verticillium has shown good results in reducing adults by infecting prepupae and pupae
12. If a second insecticidal spray is required (under expert advice only) Emamectin Benzoate 5% WG @0.4gm/lit or Spinosad @0.3 ml/litre may be given
13. Try to intercrop - for every 20 rows of chillies, one row of tomato.

14. Growing tall maize crops or Sesbania along the borders will reduce immigrating adult population

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