

On Farm Trial: An Approach for Management of Thrips in Onion

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ABSTRACT

Among the several factors attributed to low productivity of onion, damage of crop due to onion thrips is substantially important. Farmers were using parathion dust 02% to control the menace. However, neem-based bio-pesticides i.e. neem seed extract (NSE) neem leaf extract (NLE) or neem oil constitute the recommendation for managing onion thrips. Preparation of NSE and NSE involved a cumbersome and time consuming process, while neem oil was readily available with the local vendors. Hence, an On Farm Trial was conducted to evaluate the feasibility and economic viability of neem oil for containing onion thrips under real farm conditions. The results of the On Farm Trial brings out that the recommended practice of using neem oil to manage thrips is feasible and economically viable over farmers practice. In order to overcome the drudgery involved in preparation and lack of free availability of neem leaf or neem seed for making bio-pesticide, the neem oil, which is easily available in local market, is better option to adopt for controlling onion thrips using eco-friendly measurement.

Key words: On farm trial; Onion thrips, Bio-pesticides

Among the bulb crops, onion is the most important vegetable crops grown in India. It is important and indispensable item in every kitchen as condiment and vegetable, this liliaceous crop has gained the importance of a cash crop rather than vegetable crop because of its very high export potential. Hence, the crop commands an extensive internal and external market in the world. The world annual production of onion is about 25 million tones. India produces 12 percent of it and ranks 2nd, the first being china. At present India produces 5.25 Million tones of bulbs from 0.49 million hectare. The national productivity is merely 10.6 tones/ha, which is lower than the world productivity of 17.46 tones/ha and far below to that of china i.e. 20.27 tones/ha and USA (47.12 tones/ha) Anonymous (2000). In India, the crop is extensively grown in Maharashtra, Gujarat and parts of Madhya Pradesh. Shajapur, Ratlam, Dewas and Indore are major districts undertaking onion cultivation in Madhya Pradesh. Area under onion cultivation in Madhya Pradesh is 0.0468 Million ha and production around 0.702 million tonnes. The state productivity is around 15.26 q/ha (Anonymous 2005). Productivity of onion even at KVK adopted village was found very low. The low productivity can be attributed to several factors i.e. quality seed, growing methods and/or adoption of appropriate plant protection measures.

By conducting survey, farmer's interaction and field diagnostics, it was observed that one of the important factors for low productivity of onion was attributed to infestation by onion thrips. Yield losses to the extent of 50% due to onion thrips have been reported by Mote. (1978) The use of parathion dust @ 2% to manage the menace is in vogue with the farmers. However, eco-friendly neem based bio-pesticides [neem seed extract (NSE) neem leaf extract (NLE) or neem oil] have been recommended. Preparation of NSE and NSE were felt a cumbersome and time consuming process, while neem oil was easily available at locally. To establish and demonstrate the effectivity of neem oil in view of its convenient availability and feasibility of direct use making it cost effective under real farm conditions, an On Farm Trials were conducted.

METHODOLOGY

On Farm Trials on bio- control of onion thrips were carried out at two adjoining villages namely Rojari and Gurdakhedi of Indore district during rabi 2002-03 by Krishi Vigyan Kendra, Kasturbagram. Five innovative and receptive farmers from both the villages were selected for conducting the trial to ensure their active participation.

The four considerations for the conduct of the above trials included farmer's perspective, farmer's participation, farmer's management status and suitability of site as suggested by Singh (1999). Neem oil @ 3.5 lit/ha was used as a test bio-pesticides to manage the onion thrips while the existing farmers practice i.e. spray of parathion 2% dust along with ash were treated as control for comparison. The yield data were collected from both the recommended and control plots (farmers practice) and there feasibility and economic viability were accessed. The trail was also envisaged with four fundamental assumptions as suggested by Pillai (2003) viz. (i) when the technology is not acceptable for the farmers in it recommended form and need minor modification, refinement or change, (ii) it needs the integration of related indigenous knowledge of the farmers with the scientific recommendations in the processes of refinement or modification, moreover the refinement or modification is a continuous process in the lake of available technological option specific to each microenvironment, (iii) the collaboration of farmers who have been experimenting on their own to evolve solutions to the constraints, in their farm and of the extension system which is vital in the process of technology development, and (iv) the technology or practices generated through On Farm Trials will become farmers' recommendation

comprising a basket of alternatives and are the most appropriate to solve problem. Keeping above in view the On Farm Trials were executed.

RESULTS AND DISCUSSION

The yield performance and cost benefit ratio of On Farm Trial due to recommended technology and farmers practice were analyzed and presented in Table 1. Of the two treatments, recommended practice i.e. use of neem oil @ 3.5 liter/ha was found to be most effective in managing onion thrips over farmers practice. The yield performance of recommended practice was 174.6q/ha which is almost 13.8 % higher then farmers practice (188.8 q/ha). Working out monetary advantage revealed that cost benefit ratio of recommended practice (3.26) was higher over Farmers practice (3.11). Outcome of the On Farm Trial organized clearly brings out that the adoption of recommended practice (use of neem oil @ 3.5 liter/ha) is feasible, economically viable and environmentally safe technology for containing thrips in onion. The demonstration could convenience most of the farmers to use recommended technology on account of its obvious advantages and effective management of onion thrips These innovative practices showed solving the farmer's problem, decision-making and ability to modify their farming practices

Table 1. Response of neem oil treatment to mangle onion thrips in terms of yield performance and C: B ratio

Treatment	Yield (q/ha)	Yield % increase	Cost of cultivation (Rs/ha)	Gross returns (Rs/ha)	Net returns (Rs/ha)	Cost benefit ratio
Farmers Practice	174.6	-	22440	69840	47400	3.11
Recommended practice*	188.4	13.8	23100	75360	52260	3.26

*Foliar spray of Neem oil @ 3.5 liter/ha

CONCLUSION

On the basis of result obtain from On Farm Trials, it is obvious that recommended practice was found feasible and economically viable and superior over farmers practice being followed. In order to overcome the drudgery involvement and non-availability of neem leaf or neem

seed for making bio-pesticide, the neem oil, which is easily available in the local market, is better option to in the management of onion thrips using eco-friendly technology. It is suggested that such participatory approach involving extension workers and farmers in demonstration of research emanated proven technology may go a long way to curtail losses on account various biotic stresses.

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