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# STUDIES ON THE EFFECT OF 'PLANOFIX' APPLICATION ON PEPPER *(PIPER NIGRUM L.)*

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Spike shedding is one of the major factors affecting the yield of Pepper. Shedding of a few spikes, is not usually considered abnormal since such natural thinning of flowers is known to exist in most of the perennial crops. But the phenomenon assumes importance when a good percentage of spikes formed on the plants shed. Studies conducted at the Pepper Research Station, Panniyur for the last few years have revealed that certain externel factors such as climate, nutritional imbalances, pests, diseases, etc. may intensify spike shedding in pepper. These factors might be creating a physiological imbalance within the plant or might be causing mechanical injury to the plant tissues, leading to the shedding of spikes. In the course of detailed studies on this serious menace, methods to control heavy and unnatural shedding of spikes from the pepper plants were thought of.

Many workers have reported that application of 'Planofix' a proprietary product of May and Baker containing NAA, has reduced boll shedding in cotton (Bhat. 1972; Sahasrabudh, 1974 Sankaran and Balasubramonian. 1975). Gill (1975) reports that 'Planofix' spraying on cotton plants increased the yield by about one quintal of cotton per acre. Sivasubramonian and Rajamoni (1972) found that two sprayings with 'Planofix' at a concentration of 10 ppm. increased the yield of chillies by preventing shedding of flowers and tender fruits. 'Planofix' application has also been found to increase fruit set in cashew (Murthy *et al* 1975)

## Materials and Methods

A trial with 'Planofix' containing the sodium salt of alpha naphthalene acetic acid, was conducted at the Pepper Research Station, Panniyur during the two seasons of 1975 and 1976 on Panniyur—1 variety of pepper. Three concentrations of the chemical, namely 90, 120 and 150 ppm were tried along with a control in a satistically laid out experiment. The chemical, at the prescribed concentrations, were sprayed four times in a fruiting season, ie immediately after the formation of spikes, after fruit setting, at half ripe stage, and finally two months before harvest. The control plants were sprayed with water alone. There were six plants in each plot and the experiment was replicated five times. The spikes shed by each plant were counted and recorded at weekly intervals and the number of spikes retained by the plants were

determined at harvest. The volume and weight of 1000 green berries and the percentage of dry pepper obtained from a known quantity of green pepper were also estimated.

## Results and Discussions

The results obtained are presented in Table 1 'Planofix' application, at the three concentrations tried, has not reduced the intensity of spike shedding, but on the contrary, has only increased it though not significantly. The chemical, when applied at a concentration of 90 ppm. increased the volume of berries by 18.36% and 17.27% in ;1975 and 1976 respectively. The corresponding increase in the weight of the berries was 14.50% and 18. 36% respectively. The increase in the volume and weight of berries was found to be highly significant.

**Table 1**

**The effect of 'Planofix' application on pepper**

| Treatments. | Mean per centage of spikes shed. | | Mean volume of 1000 green berries (c. c.) | | Mean weight of 1000 green berries. (g) | | Recovery percentage of dry pepper from green pepper. | |
|---|---|---|---|---|---|---|---|---|
| | 1975 | 1976 | 1975 | 1976 | 1975 | 1976 | 1975—1976 | |
| 1. Planofix 90 ppm. | 10.26 | 14.31 | 117.00 | 16703 | 187.39 | 178.66 | 37.02 | 33.30 |
| 2. Planofix 120 ppm. | 13.13 | 18.16 | 160.20 | 163.43 | 16904 | 172.97 | 33.92 | 30. 13 |
| 3. Planofix 150 ppm. | 11.91 | 15.90 | 166.20 | 159.60 | 175.74 | 170.67 | 32.44 | 29.56 |
| 4. Control Water Spray. | 8.21 | 8.80 | 149.60 | 142.43 | 163.65 | 151.23 | 36.78 | 30 62 |
| F. ratio | N.S. | N.S. | **10.87 | *16.29 | **12.25 | ** 13.37 | N.S. | N.S. |
| C. D. (0.05) | — | — | 17.14 | 13.30 | 15.01 | 16.03. | | |

N.S. Not Significant. ** Significant at P = 0 01.

Application of the chemical at the higher concentrations of 120 and 150 ppm. has also registered similar increases in the volume and weight of berries, but not to the extent obtained by application at the lower concentration of 90 ppm. Further, when applied at higher concentrations, "Planofix" seems to have a depressing effect on the recovery percentage of dry (black) pepper from green berries; while the application of the chemical at the lower concentration of 90 ppm, slightly increased the recovery percentage. Considering the fact that the volume and weight of berries, percentage of dry to green pepper, etc. are factors affecting the total yield of the crop, the effect of "Planofix" on these characters may be said to be of considerable importance. Bold berries fetch a

better price in the market and this adds to the importance of this chemical in pepper cultivation.

**Summary**

A trial was conducted at the Pepper Research Station, Panniyur during 1975 and 1976 with 'Planofix', a proprietary product containing the sodium salt of alpha N. A. A : to see whether the application of the chemical could control spike shedding in pepper caused by physiological disturbances. The chemical was tried at three concentrations of 90, 120 and 150 ppm.

Though the application of the chemical was found to be ineffective in controlling spike shedding, it significantly increased the volume and weight of pepper berries, especially at the concentration of 90 ppm. The recovery percentage of dry pepper from green, was slightly increased.

സംഗ്രഹം

കുരുമുളക വള്ളികളിലുണ്ടാകുന്ന തിരികൊഴിച്ചിൽ തടയുന്നതിലേക്കായി 'പ്ലാനോ ഫിക്സ്' എന്ന ഉല്പന്നം ഉപയോഗിച്ച് പന്നിയൂർ കുരുമുളക ഗവേഷണ കേന്ദ്രത്തിൽ 1975ലും 1976ലും ആയി ഒരു പരീക്ഷണം നടത്തുകയുണ്ടായി. 90 ppm, 120 ppm, 150 ppm എന്നീ വീര്യങ്ങളിലാണ് പ്രസ്തുത roocronjciqy വള്ളികളിൽ പ്രയോഗിച്ച നോക്കിയത്. ഈ രാസ പദാർത്ഥത്തിനു കുരുമുളക വള്ളി കളിലെ OTilfD കൊഴിൽകുറയ്ക്കുന്നതിനു കഴിവില്ലെന്നു കാണുകയുണ്ടായെങ്കിലും കുരുമുളക മണികളുടെ ഭാരം, വ്യാപ്തം എന്നീ ഗുണങ്ങളെ ഗണനീയമായ തോതിൽ വർദ്ധിപ്പിക്കുന്നതായി കണ്ടു. 90 ppm എന്ന വീര്യത്തിൽ പ്ലാനോഫിക്സ് തളിച്ചപ്പോഴാണ് മണികളുടെ ഭാരവും വ്യാപ്തവും ഏറ്റവും കൂടുതലായി വർദ്ധിച്ചതു. ഇത വീര്യത്തിൽ മുന്നു തളിച്ച വള്ളികളിലെ മുളക് ഉണങ്ങിയപ്പോഴും കൂടുതൽ തൂക്കമുള്ളതായും കാണപ്പെട്ടു.

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