SURVEY AND SURVEILLANCE OF Parthenium hysterophorus AS A MAJOR ALTERNATE HOST OF COTTON MEALY BUG IN RAJASTHAN

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Parthenium hysterophorus L. is an obnoxious fast growing alien annual weed, most commonly known as a congress grass or carrot grass. It is a main source of nuisance and health hazard to human and animal, it has become one of the seven most dangerous weeds of the world due to its well known ability to destroy the major portion of nutrient, natural vegetation and create havoc in field. Survey was conducted during kharif season of the year of 2008 and 2009 in a district of Sriganganagar, Hanumangarh, Alwar, Ajmer, Nagour, Jodhpur and Pali districts of Rajasthan for alternate host of mealy bug. Surveillance of mealy bug infestation was found greater when Parthenium population was high in surveyed area of Rajasthan. Three species of mealy bug were found in cotton surveyed area of Rajasthan. Phenacoccus solani is the most predominant in the state followed by Maconellicoccus hirsutum and Phenacoccus solenopsis. Out of three species P. solani was found in greater intensity in the surveyed area of Rajasthan and its infestation was up to 91.46% followed by M. hirsutum 7.66% while P. solenopsis was negligible. During the years 2008 and 2009 maximum mealy bug infestation in Bt cotton was 32.62% and 24.75% respectively. Thus in present study it is revealed that mealy bug infestation was recorded higher in district Sriganganagar followed by Hanumangarh, Alwar, Ajmer, Nagour, Jodhpur and in least in Pali district Pali. Parthenium hysterophorus acts as major mealy bug host followed by Achyranthes aspera, Aerva javanica, Datura stamomium, Hibiscus rosa chinensis, Sesbania aculeate, Abutilon bidentatum, Cyperus rotundus, Citrus spp.

ASSESSMENT ON THE EFFECTS OF INTERCROPPING PATTERNS ON INCIDENCE AND DAMAGE TO COTTON BY Diparopsis castanea (LEPIDOPTERA: noctuidae) IN MAGOYE, MAZABUKA DISTRICT, ZAMBIA

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The Red bollworm (Diaparopsis castanea), is becoming a major pest from an occasional pest in Zambian cotton. An experiment was conducted to evaluate the effects of intercropping patterns on the incidence and damage of the red bollworm in cotton. The trial was set in 2010/11 rainfall season using a high yielding Zambian cotton variety CDTII. This was planted in 30 cm interplant spacing and 100/40 cm spaced rows with sunflower (Helianthus annuus), pigeon pea (Cajanus cajan), maize (Zea mays), sorghum (Sorghum vulgare) and cowpeas (Vigna unguiculata) as intercrops. D. castanea egg had a significant difference in its occurrence on the cotton in the various treatments. Cotton - sorghum treatment had the highest mean occurrence (2-3 eggs/plant) while cotton - pigeon pea and monocrop (control) treatment had the lowest mean occurrences (0-1 egg/plant). In terms of average boll damage caused to the cotton plant by D. castanea, cotton - maize treatment had the highest damage of 7 bolls/plant while cotton - pigeon pea had the lowest damage of 3 bolls/plant. Significant differences in the yield from the various treatments were observed, with cotton- sunflower having the highest yield (303kg/ha) while maize - cotton had the lowest yield of 169kg/ha. This low yield in maize was anticipated as it suffered the highest boll damage among all the intercrops. This resulted in the cotton the having least number of squares/6 plants (32 squares) and the highest number of interventions (8 handpicking) among all the intercropping patterns. Though cotton - sunflower treatment had the highest cotton yield among the various treatments, it showed a statistically similar yield with other treatments such as cotton - sorghum (235kg/ha), cotton - pigeon pea (240kg/ha), cotton - cowpea (260kg/ha) and monocrop (275kg/ha).