

Published on: 1st May 2011



DAMAGE IN SEEDLING STAGE OF PEARL MILLET DUE TO PIGEON AND DOVES

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ABSTRACT:

Doves and Blue Rock Pigeon, new seedling non insect-pests, were recorded on germinating pearl millet crop. The damage varied from 4.46 - 8.33 percent on germinating seeds and plants of pearl-millet. They were found active between 5.30 to 8.30 am and again between 3.40 to 7.30 pm during the month of February- March (Main sowing period). Doves numbering 414 - 447 and Blue Rock Pigeon numbering 448 - 469 were observed in a flock during feeding at seedling stage of the crop.

The North Gujarat area is well known as a land of agricultural having very few natural forest lands. The proposed work is restricted to the selected areas of the Patan district of North Gujarat region. The Patan district is dominant by farmers and their agricultural activities. The economy of the Patan district primary depends on agricultural. The farmlands of this area are lack proper irrigation.

KEY WORDS: Damage, Dove, Pigeon.

INTRODUCTION:

The pearl-millet crop is reported to be damaged by 39 bird pests species form germinating to harvesting stage (Patel,2008). The extent of bird damage to the pearl millet varies between fields and at different localities depending upon several

factors (Mathew *et al*; 1998). Crop fields attract many birds from sowing to grain maturity stage (Bhalodia *et al*; 1997). During the germination certain bio-chemical changes occurs which increase the nutritive value of seeds(Singh and Benerjee, 1953 and Chen *et al*; 1975), which may provide excellent nutrition for seed eating birds. I once times damage require resowing of crop which matures late and suffer heavy losses.

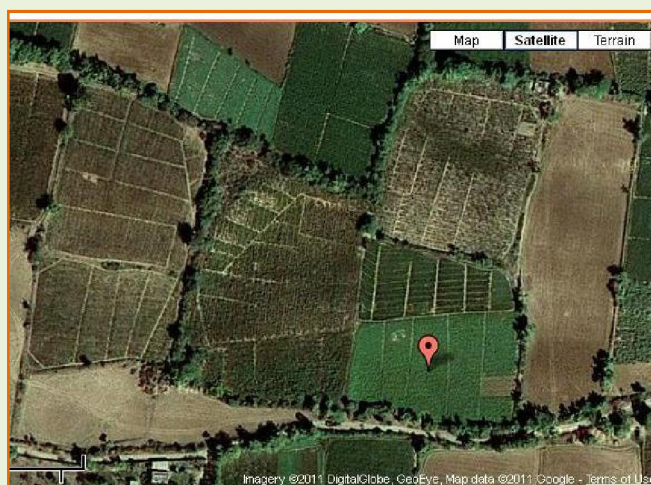


Image 1: Study site

STUDY AREA:

Patan is situated in the Northern part of Gujarat. It is bound on the North West and north by Rann of Kutch and Banaskantha district. Patan district lies between 23° 41' and 23° 55' N latitude and 71° 31' and 72° 20' E longitude. Patan is situated on 82.30 mts height from the sea level in the Northern part of Gujarat. The region is having the minimum temperature as low as 5°C -10°C and maximum temperature as high as 40°C - 48°C. The average rain fall in the region is about 701 mm.

MATERIALS & METHODS:

In summer (2007) Pearl-millet (Usha-23) was sown at Hansapur village in Patan district. Hansapur village lies between 23° 50' N latitude and 71° 09' E longitude. The fields having crop of pearl-millet were randomly selected at each site. The Doves and Blue Rock Pigeons were observed with help of a binocular (7x50) and counted twice in a day during the crop season to estimate the amount of crop loss from each of the above six plot, an area of each plot measuring 6 x 5 m was marked in field sown with above stated cultivars of pearl millet. Birds were identified up to species level with the help of the book Salim Ali and Ripley (1983). The principal species of Doves and Blue Rock Pigeons visited to the summer pearl millet crops at various stages has been presented in table 1.

- (1) Number of seeds per row damaged/eaten by Doves and Blue Rock Pigeons during seedling stage.

Total number of seeds sown and number of seeds damaged or eaten by Doves and Blue Rock Pigeons per row in the net plot area after germination were ascertained by counting number of plumules. Observations of birds' damage were started at seedling stage immediately after germination. The observation of birds visitants were made during morning (5:30 to 8:30 am) and evening (3:40 to 7:30pm) hours from a distance of 40 meter using binoculars.

RESULT AND DISCUSSION:

The bird damage started one week after sowing and continued up to second week (at the stage of one or two leaf). In the morning (5:30 am) birds (Doves and Pigeon) were setting in small flock on banyan and neem tree near fields and after making huge flocks they got down in fields for feeding at this time 414-447 (Doves) and 448-469 Blue rock pigeon/flock were observed eating the germinating seedling as well as swollen seeds (un germinating seed). These birds were also seen to digging swollen seeds below the ground (0.5 cm deep).

The seedling damage ranged from 4.46 - 8.32 per cent and damage was confined mostly at periphery. After damaging the seedling birds started returning back from 8.00 am and completely

disappeared by 8.30 am. In evening they started coming back from 6:40 pm and completely left over the fields up to 7.30 pm.

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TABLE 1: DOVES AND PIGEON VISITANT IN PEARL-MILLET CROP AT SEEDLING STAGE

SR. NO.	COMMON NAME	VERNACULAR NAME	SCIENTIFIC NAME	FAMILY
1.	Blue Rock Pigeon	KABUTAR	<i>Columba livia</i>	Columbidae
2.	Eurasian Collared Dove	HOLO	<i>Streptopelia decaocto</i>	“
3.	Red Collared Dove	LOTAN HOLO	<i>Streptopelia tranquebarica</i>	“
4.	Spotted Dove	TALIYO HOLO	<i>S. chinensis</i>	“
5.	Laughing Dove	HOLI	<i>S. senegalensis</i>	“

TABLE 2: BIRDS VISITANT IN PEARL-MILLET CROP AT GERMINATION STAGE

Date	Doves			Blue rock Pigeon		
	Morning Birds	Evening Birds	Total	Morning Birds	Evening Birds	Total
27-02-2007	51	69	120	86	83	169
28-02-2007	64	85	149	93	89	182
01-02-2007	75	64	139	64	66	130
02-02-2007	85	87	172	77	84	161
03-02-2007	72	71	143	61	69	130
04-02-2007	67	71	138	67	78	145
Total	414	447	861	448	469	917

TABLE 3: PERCENTAGE OF DAMAGE TO PEARL-MILLET SEEDLING BY BIRD PESTS IN SUMMER-2007

Plot No.	Plot Size	Variety	No. of rows in each plot	No. of seeds in each row	Total No. of seeds in each plot	No. of seed damaged	Percentage of damage
1	6.00 m x 5.00 m	Usha-23	16	21	336	28	8.33
2	“	“	“	“	“	16	4.76
3	“	“	“	“	“	15	4.46
4	“	“	“	“	“	21	6.25
5	“	“	“	“	“	22	6.54
6	“	“	“	“	“	19	5.65