

MODEL TRAINING COURSE

on

Management of Vertebrate Pests in Drylands for Enhancing Farmers Income

(October 15-22, 2019)



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Sponsored by

Directorate of Extension
Department of Agriculture, Cooperation & Farmers Welfare
Ministry of Agriculture & Farmers Welfare
Government of India, New Delhi

Organized by

ICAR-Central Arid Zone Research Institute
Jodhpur-342 003, Rajasthan



Background

Vertebrates cause considerable damage to agriculture, natural resources, property etc and are a serious menace to human health and safety throughout the world. The species most often involved in serious amounts of damage are birds and mammals. Rodents, the largest group among mammals, alone cause over 15% losses to our food basket at pre-harvest (standing crops) as well as post-harvest stages (during processing, storage, transport etc). They also contaminate food/fodder/feed and are responsible for spread of several communicable diseases to man and his livestock. Similarly, many depredatory birds are responsible for significant damage to standing crop. Besides these two group of vertebrates, many higher wild vertebrates too have posed serious threats to our agriculture in recent years. These include mammals like primates, ungulates and lagomorphs. Crop raid by different wild animals in particular like Monkeys (*Macaca* sp); Hanuman langur (*Presbytis entellus*), Elephant (*Elephas maximus*), Blue bull (*Boselaphus tragocamelus*), Sambar deer (*Cervus unicolor*), Black buck (*Antilope cervicapra*), Chinkara (*Gazellaga zellabennetti*), Wild boar (*Sus scrofa*) etc has been widely reported from all over the country causing severe damage to standing crops. Indian Council of Agricultural Research (ICAR) has initiated R&D activities on management of rodent pests, depredatory birds and a few higher vertebrates through an All India Network Project on Vertebrate Pest Management. The Project has evolved several effective management strategies against such pests.

The drylands embrace hyper-arid, arid, semi-arid and dry sub-humid areas. These lands are characterized by low and erratic precipitation which is reflected in relatively low and notably unpredictable levels of crop. More than 94 million hectares of total arable area of India fall under dry lands constituting 65% of dryland and rainfed area and produce 40% of the total food grains that feeds 40% of the total population. The remaining of 50 million hectares constituting 35% of irrigated areas account for 60% of the crop production. One hundred and twenty-eight Districts in India have been recognized as dryland farming areas. Of these, 91 Districts are spread in the states of Madhya Pradesh, Chhattisgarh, Uttar Pradesh and Tamil Nadu, representing typical dry farming tracts. Rest of the Districts belongs to Central Rajasthan, Saurashtra region of Gujarat and rain shadow region of the Western Ghats. Major dry land crops are millets such as jowar, bajra, ragi; oilseeds like sesame, ground nut and mustard and pulse crops like moog bean, moth bean, pigeon pea, gram, lentil etc.

Arid regions are the most challenged drylands as the region is hyper-thermic and characterized by low and erratic rainfall, poor soil health and frequent droughts. The Indian arid zone comprises of (i) hot arid i.e., eastern limit of the Thar Desert and (ii) cold arid (in Jammu & Kashmir). Hot arid regions cover about 32 m ha area and major area falls in western Rajasthan (61.9%), parts of Gujarat (19.6%), Punjab (4.6%) and Haryana (4.0%). A small area (10%) also lies in parts of Maharashtra, Telangana and Karnataka. In Rajasthan state, arid region mainly falls in 12 western districts. The ecosystem is hyper-thermic and is characterized by low and erratic rainfall (annual range: 100- 450 mm), poor soil health and frequent droughts. During the last 20 years, human population in arid Rajasthan has increased by 50% and that of livestock by 25%. To meet the food and fodder requirements, farmers have adopted rainfed farming, development of range/gochar lands, arid horticulture and afforestation plantations. With the canalization of river waters through Indira Gandhi Nahar Project and Narmada Canal and large-scale exploration of ground water in the region, the area under irrigated farming has increased. Agricultural productivity in general is very low because of several abiotic and biotic constraints. Native herbivore vertebrates, like rodents, birds and other wild animals are reported to cause immense losses to all agricultural production systems and therefore require urgent attention of scientists, policy planners, extension functionaries and farmers alike for management of these unwelcome vertebrates in dryland agro-ecosystems. Application of effective management technologies helps reducing the vagaries of such pests and thereby enhancing the farmers income.

Taking into consideration of above facts a Model Training Course on Vertebrate Pest Management, sponsored by Directorate of Extension, Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare (GOI) is being organized at ICAR- Central Arid Zone Research Institute, Jodhpur from October 15-22, 2019. The objective of the Course is capacity enhancement of Extension functionaries and Officials from related organizations/Departments in vertebrate pest management.

Course Content

The aim of this training course is to enhance and update the knowledge of extension functionaries working in Agriculture and allied Departments of States and UTs and Scientists/SMSs of SAUs/KVKs working at field level and involved in extension activities. The Course comprises of class room lectures, laboratory and field practical, demonstrations and field trips. Following themes would be covered in the MTC.

- Human-Wild life- Conflict in Agriculture
- Eco-biology of rodent pests in dry lands
- Rodent pest management in field and horticultural crops.
- Rodent pest management in storage
- Eco-biology and management of depredatory birds in agriculture
- Eco-biology and management of major higher vertebrates in agriculture
- Management of non-insect pests
- Legal issues involved in management of vertebrates
- Public/Community participation in Vertebrate Pest management

Eligibility criteria of applicants

The total number of participants will be 20. Participants (AO/ADO/ADA/SMS etc.) from all the concerned departments such as Agriculture, Horticulture and allied field from States and Union Territories who are engaged in research/extension /training activities on plant Protection are eligible to attend the training course. Officials who are from other organizations viz; ICAR institutes, SAU's and KVK's working at field level and involved in extension activities are also eligible. The application for participation may be sent in enclosed prescribed format, duly forwarded/nominated by the competent authority/Head of the institution. It should reach course director on or before the last date by the post, fax or e-mail. The participants will be selected on the basis of their qualification and area of work, relevant to training course.

Duration of training days from

Duration of the model training course (MTC) is from 15th – 22nd October, 2019. (Both days inclusive). The participants are expected to arrive at ICAR-CAZRI, Jodhpur latest by the evening of the 14th October, 2019 and can leave after 17:00 hrs on the 22nd October, 2019.

TA/DA, boarding and lodging

The participants from Agriculture and Allied Departments of State/UTs will be reimbursed to and fro travel fare for the journey to Jodhpur by rail as per the entitlement class of travel and GOI norms specified in the guidelines for organizing MTCs, restricted to maximum of AC-II tier train fare/bus fare by the shortest route on submission of ticket. However, TA/DA of participants from SAUs/ KVKs may be borne by their respective Institute/ Organization. The food and accommodation will be arranged at CAZRI, scientist hostel. The cost of boarding and lodging etc. of all the selected participants will be met out of the grant from the Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare (GOI) New Delhi. As regards to daily allowance (DA), any participant, refusing to avail the free board and lodging facilities, will not be given any cash payment in lieu thereof. **Participants are requested not to bring family members with them, as the institute has limited hostel facilities.**

About Jodhpur

Jodhpur, once the capital of the former princely state of Marwar, now is the second largest city of Rajasthan state and a popular tourist destination, featuring many palaces, forts and temples, set in the stark landscape of the Thar Desert. The city is known as the "Sun City" for the bright and sunny weather as it enjoys all the year round. Jodhpur is geographically located at 26.2389° N, 73.0243° E. The city has a typical desert climate, dry and hot with a brief rainy

season from late June to September. During October, maximum and minimum temperature may be around 35 and 20°C respectively.

How to reach CAZRI

Jodhpur is well connected through rail and bus transport and has links with all the major cities of India. The institute can be reached by hired or personal vehicle. Distance from major terminals of the city is:

From Railway Station: 6 km.

From State Roadways Bus Stand: 9 km.

Important Dates

Last date for recipient of application (through proper channel) : 30 August, 2019

Confirmation of participant (by mail/fax) : 05 September, 2019

All Correspondence should be addressed to

Dr. O. P. Yadav

Director

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REGISTRATION FORM

**APPLICATION FORM FOR PARTICIPATION IN THE MODEL TRAINING COURSE
ON
Management of Vertebrate Pest in Drylands for Enhancing Farmers Income
ICAR- Central Arid Zone Research Institute, Jodhpur-342 003**

(October 15-22, 2019)

(To be sent directly to the Course Director/Co-Directors of the Model Training Course)

1. Name (In block letters):.....
2. Designation:.....
3. Institute/ Organization where employed:.....
4. Address for correspondence (Postal address with PIN):.....
.....
5. Permanent Address:.....
.....
6. Phone No.....Mobile.....Fax No.....
7. E-mail:.....Date of birth:.....
8. Sex: Male.....Female.....Marital status: Single.....Married.....
9. Participation in any research seminar/summer-winter schools/short course/model training course etc.
during previous year under ICAR/Other Govt. Organization.....
.....

10. Academic qualification

Degree	Year	Subject	University/ Institution	CGPA/ % of marks
Bachelor degree				
Master degree				
Other degree /Diploma etc.				

Date.....

Place.....

Signature of participant

Recommendation of the forwarding Institution

Date.....

Place.....

Signature with seal