

Design and Implementation of Low-Cost Solar Powered Bird Repellent Technique for Prevention of High Economic Crops

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ABSTRACT

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There is the most important downside in agricultural countries from domestic birds as a result of they're a significant threat within the field of agriculture inflicting injury to economic field crops, storage homes and additionally change of state human life areas. The foremost common persecutor birds in Bharat are House crows, Common starling, Jungle starling, Brahminy oscine, White cheeked Luscini megarhynchos, etc. so as to distract these birds away, several ancient strategies like simulacrum models, Hawk kites, colored lights, Lasers, Flashes, Chemicals etc. are used that today don't appear terribly effective. an efficient bird deterrent technique i.e., star powered hearable Bird bird-scarer has been developed. totally {different completely, different} sounds because of that different species of birds get frightened were additionally noticed and studied. The testing of the bird-scarer was performed for regarding one month in August 2015. All major species of birds were tested however the most focus was on Crows as they're the most important injury inflicting bird species in Bharat. There are twenty-two ordinarily legendary predator sounds from birds like Eagle, Owl, Falcon etc. were tested and it had been discovered that the sound from Falcon was the foremost effective to intimidate Crows yet as alternative species. One most significant observation was that the success of the bird-scarer chiefly depends on the predator sound kind, its volume, quality, frequency and its repetitive nature.

Keywords : Audible Scarer, Solar Powered Scarer, Predator Sound, Pest Birds.

I. INTRODUCTION

The farmland with fresh planted and sowed seeds sometimes destroyed by the birds, that are majorly done by the house crows, common mynah, jungle

mynah, white cheeked Luscini megarhynchos are the foremost common kinds of the bird that have an effect on the sector at larger rate.

The employment of bird deterrence are majorly at the business sites like airports, business buildings, money

sites, etc. usually the bird tends to manoeuvre additional far away from the decision supply and also the entire uncomfortable space with the employment of signalling bird image ,catastrophic crop loss occurred in several African countries among nearly a pair of decades (1955 to well into the 1970's) from the extremely gregarious Quelea birds periodic attacks, because of that this various management live adopted.

The researchers adopted an environmentally friendly bird protection technique like unhear able. whereas seeking the protection of human issues from avian menace, thus on preserve the role of birds in world environmental balance. to judge objectively the result of unhear able on birds, some studies are disbursed. The threat expose by birds to economic crops within the farms or at storage facilities needs the readying of an efficient bird deterrent in such locations. plenty of makes an attempt are created to develop winning bird deterrent systems with solely a couple of achieving desired results. Ultrasonic frequency vary from 15-25 kilohertz is understood to be worrisome to birds and a tool operative at that vary was developed.



Figure 1: Solar panel



Figure 2: Mp3 player and amplifier

II. METHODS AND MATERIAL

This project requires following equipment- Solar panel Figure 1, Mp3 player and amplifier Figure 2, battery, pendrive, cardboard tubes, MFD board, wires. Overview – Soldering all making the structure on which this assembly is to be held. This is done by making a stand of cardboard tubes on a hard base made on a tin box filled with sand for further support and balance. Placing electrical components in it and then finishing by properly fitting all things together. Lastly experimentation, whole setup is to be placed on the test field and testing with different ultrasonic sounds for repelling birds from the field is to be done. The electrical components together in a manner shown in the Figure 3 block diagram.

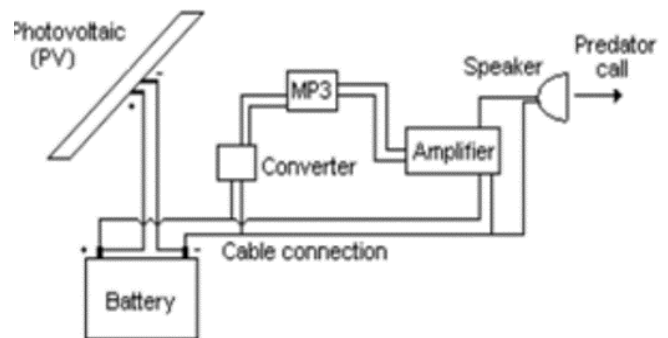


Figure 3: Block diagram

III. WORKING

Photovoltaic panel converts star beam radiation into DC electricity throughout the day. Battery is charged by PV panel and therefore the voltage is hold on during this device. The domestic bird's predator's calls area

unit loaded during a pendrive by employing a laptop and fed to Mp3 player. The operating voltage of battery, electronic equipment and speaker is 12V, however the MP3 wants 1.5V. so as to cut back the voltage from twelve to one.5V for MP3, a convertor is employed. The electronic equipment will increase the amplitude (predator's calls level) for electro-acoustic transducer. The sound is created by the speaker that repels the birds from that space Figure 4.

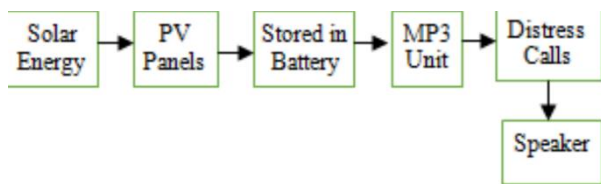


Figure 4: Working diagram

IV. CONCLUSION

Once we manufacture our device successfully, it should give following results – Efficiency of bird repellence should be greater than or equal to the existing bird repellent devices. It should not harm birds and in addition to that it also should not disrupt human life. Overall cost of manufacturing should be lowest possible as compared to other bird repellent available in the market.

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