

SHIDDI PANDAY

HINDI HONS

BA-355

EVS

PROJECT

RAVIGAJI GIRLS

COLLEGE

Raniganj Girls' College

Course Name: Environment Studies

Course Code: AEE101

Topic of the project: Different aspects of Air, Soil, Water, Noise pollution

A Project Report

Submitted by Semester-I students (Academic Year 2021-22)

Name of the student	Registration Number
SUBHALAXMI YADAV	KNU113211210067
NIDHI TURI	KNU113211210046
MOUMITA BANERJEE	KNU113211220028
SHALU KUMARI	KNU113211210045
SANDHYARANI DAS	KNU113211210063
SNEHA KUMARI SHAW	KNU113211210233
PRITI KUMARI	KNU113211210184
NIDHU KUMARI SINGH	KNU113211210089
ANU KUMARI RABIDAS	KNU113211210042
PINKI KUMARI	KNU113211210039
NILAM KUMARI	KNU113211210195
SONALI THAKUR	KNU113211210266
ANJALI KUMARI SHAW	KNU113211210108
KHUSHI SINGH	KNU113211210202
PAYEL SINGH	KNU113211210288
BHARTI KUMARI PASI	KNU113211210170
SULTANA KHATUN	KNU113211210181
HENA PARWEEN	KNU113211220012
ANUSKA CHATTERJEE	KNU113211220003
SARASWATI SINGH	KNU113211210168
SHIDDMI PANDEY	KNU113211210240
SUDESHNA LAYEK	KNU113211220017
ASMITA SINGH	KNU113211210271
SHATTIKI SARKAR	KNU113211220035
RITUPARNA GHOSH	KNU113211220051
KAJAL JHA	KNU113211210092
PUNAM YADAV	KNU113211210090

CERTIFICATE

This is to certify that this project titled “Different aspects of Air, Soil, Water, Noise pollution” submitted by the students for the award of degree of B.A. Honours/ Program is a bonafide record of work carried out under my guidance and supervision.

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PUNAM YADAV	KNU113211210090

Place: Raniganj

Date: 18.03.2022

Juhin Subhra Ghosh

Assistant Professor, Department of Zoology

Signature of the supervisor with designation and department

ENVS Project

Name - Shiddhi Pandey

Stream - Hindi honours.

Semester - 1st.

Roll No - BA355

Registration No - 113211210240

College - Ranigani Girls College.

Address - Shidanga Bhakat Para, near Dwaga mandir, Raniganj

District - Paschim Bardhaman.

BIOPESTICIDES

• What are Biopesticides ?

Biopesticides are certain types of pesticides derived from such natural materials as animals, plants, bacteria, and certain minerals. For example, canola oil and baking soda have pesticidal applications and are considered biopesticides. As of April 2016, there are 299 registered biopesticide active ingredients and 1401 active biopesticide product registrations.

∴ View a list of biopesticide active ingredients.
On this page:-

- Classes of biopesticides.
- Advantages of using biopesticides.
- How EPA encourages the development and use of biopesticides.
- For more information.

Classes of Biopesticides

Biopesticides fall into three major classes:-

1. Biopesticides are naturally occurring substances that control pests by non-toxic mechanisms. Conventional pesticides, by contrast, are generally synthetic materials that directly kill or inactivate the pest. Biochemical pesticides include substances

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that interfere with mating, such as insect sex pheromones, as well as various scented plant extracts that attract insect pests to traps. Because it is sometimes difficult to determine whether a substance meets the criteria for classification as a biochemical pesticide, EPA has established a special committee to make such decisions.

2. Microbial pesticides consist of a microorganism [e.g., a bacterium, fungus, virus or protozoan] as the active ingredient. Microbial pesticides can control many different kinds of pests, although each separate active ingredient is relatively specific for its target pest^[s]. For example, there are fungi that control certain weeds and other fungi that kill specific insects.

The most widely used microbial pesticides are subspecies and strains of *Bacillus thuringiensis*, or Bt. Each strain of this bacterium produces a different mix of proteins and specifically kills one or a few related species of insect larvae. While some Bt ingredients control moth larvae found on plants, other Bt ingredients are specific for larvae of flies and mosquitoes. The target insect species are determined by whether the particular Bt produces a protein that can bind to a larval gut receptor, thereby causing the insect larvae to starve.

3. Plant-incorporated-protectants [PIPs] are pesticidal substances that plants produce from genetic material that has been added to the plant. For example, ~~produce from genetic~~ Scientists can take the gene for the Bt pesticidal protein and introduce the gene into the plant's own genetic material. Then the plant, instead of the Bt bacterium, manufactures the substance that destroys the pest. The protein and its genetic material, but not the plant itself, are regulated by EPA.
- What are the advantages of using biopesticides?
 - Biopesticides are usually inherently less toxic than conventional pesticides.
 - Biopesticides generally affect only the target pest and closely related organisms, in contrast to broad spectrum, conventional pesticides that may affect organisms as different as birds, insects and mammals.
 - Biopesticides often are effective in very small quantities and often decompose quickly, resulting in lower exposures and largely avoiding the pollution problems caused by conventional pesticides.
 - When used as a component of Integrated Pest Management [IPM] programs, biopesticides can greatly reduce the use of conventional pesticides, while

crop yields remain high.

To use biopesticides effectively [and safely], however, users need to know a great deal about managing pests and must carefully follow all label directions.


How does EPA encourage the development and use of biopesticides?

In 1994, we established the Biopesticides and Pollution Prevention Division in the office of Pesticide Programs to facilitate the registration of biopesticides. This division promotes the use of safer pesticides, including biopesticides, as components of IPM programs. The division also coordinates the Pesticide Environmental Stewardship Program [PESP].

Since biopesticides tend to pose fewer risks than conventional pesticides, EPA generally requires much less data to register a biopesticide than to register a conventional pesticide. In fact, new biopesticides are often registered in less than a year, compared with an average of more than three years for conventional pesticides.

While biopesticides require less data and are registered in less time than conventional pesticides, EPA always conducts rigorous reviews

to ensure that registered pesticides will not harm people or the environment. For EPA to be sure that a pesticide is safe, the Agency requires that registrants submit the results of a variety of studies and other information about the composition, toxicity, degradation, and other characteristics of the pesticide.



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