

EEE Assignment 1

Q.1 What is the impact of pesticides usage on ecosystem?

A.1 MJ Mohd Fuad, A.B. Tunaidi, A. Hanihah, T. Hamzah, ME Toriman, N. Lyndon, A.C. Ez, S. Selvadurai and AM Azima
Malaysia - 2012

1. Pesticides slow down the growth of young paddy due to accumulation of residue.
2. It can also destroy the aquatic microbes & disturb the photosynthesis process.
3. It causes difficulty & health issues to farmers. Problem in breeding, stomach ache, vomiting etc.
4. Living things in paddy field also face problems. For example: freshwater fishes decreases in no.
5. Bird, duck, chicken are found dead in the rows or in drain.

Q.2 How are grasslands important for ecosystem?

A.2 Lucien Carlier, Ioan Rotar, Mariana Vlahova, Roxana Vidican

Belgium, Romania, Bulgaria - 2009

1. In many countries of the world, pastoral rangelands are the primary & only resource on which both wild & domesticated herbivores depend.
2. Grasslands are able to sequester about the double quantity of C in the soil in comparison to arable land.
3. Poplar, willow, perennial grass species *Miscanthus* and wheat straw, recognised as energy crop for the second generation fuel, are the main sources of biomass relevant to the member states of EU.
4. Grassland produces conjugated linoleic acid (CLA) which is a potent anti-carcinogen.
5. Indigenous peoples [of EU] have recognised vetiver grass for its medicinal uses, for thatching, mulch & feed, and for soil & moisture conservation.

Q3. What are the ecosystem services in Urban areas?
A3 Erik Gomez - Buggesthun, David N-Barton
Spain, Norway - 2012

1. Urban Temp. Regulation - Trees and other urban vegetation provides shade, create humidity & block wind, so regulating the temp.
2. Noise reduction - Absorption of sound waves by vegetation barriers, especially roadside vehicle noise absorption.
3. Air purification - decreases the quantity of pollutants & increase the O_2 level by urban vegetation.
4. Recreation & Cognitive development - Green spaces / parks provide opportunities for physical exercise, improved mental health & cognitive development.
5. Moderation of Environmental ~~extremes~~ extremes - Ecosystems such as mangroves act as natural barriers from storms, waves, floods, hurricane and tsunamis. Vegetation controls landslides & heat waves.

Q4 How plastics affect soil ecosystem?
A.4 Matthias C. Rillig, Eva Leifheit, Johannes Lehmann
New York, USA - 2021

1. It causes changes in soil structure & bulk density, which can affect root penetration resistance, changes in water holding capacity etc.
2. Biodegradable plastic might ~~also~~ slow down nutrient flow since microbial communities get busy decomposing biodegradable plastic.
3. Microplastic have both positive & negative effects on plant growth depending variety of plant & plastic size.
4. Microplastic affects litter decomposition by altering C:N ratio (C-carbon, N-nitrogen)
5. Microplastic could increase the molecular diversity of soil carbon by adding novel polymers, & especially through the broad range of additives they contain.