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FOR ENGINEERING AND SCIENCE

Summary of Silent Spring

Author(s)

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Description

A summary of Rachel Carson's "Silent Spring".

Body

The following is a summary of Silent Spring by Gino J. Marco in Silent Spring Revisited:

In the first several chapters, Rachel Carson stated that the large number of chemicals (approximately 500, many were pesticides) introduced each year was possibly making the earth unfit for all life. Insecticides were becoming deadlier and deadlier. Specialists were concerned only about efficacy and were losing sight of the overall picture. Before World War II, inorganic chemicals were the main pest controls. Arsenicals were greatly used, and toxicological problems occurred. Carson emphasized chlorinated hydrocarbons and organophosphates as the main problems leading to bird and fish kills, human nervous system disorders, and deaths. She noted that herbicides were at one time considered no problem to animals. She explored the possibility of surface and ground water contamination problems. She explained that water treatment plants did not remove chemicals because multiple chemicals in catch basins could interact to form toxic compounds, and thus cancer hazards from polluted waters would increase in the future.

Carson stated that chemicals treatment of soils led to the destruction of beneficial biological species, and that such destruction resulted in imbalance to the ecosystem.

Also, wildlife that ate chemically killed worms also dies. She noted the long-term persistence of chlorinated hydrocarbons in soil and the possible transfer of chemicals into plants grown in such soils. She stated that government officials had aeriably sprayed areas without notifying the public, and that these officials underestimated the safety problems of chemicals. Carson highly praised the desirability and great potential of using biological controls in place of chemicals, as well as use of natural products and less toxic chemicals (e.g., pyrethrins). She pointed out that scientists' and government officials' concerns addressed only classical toxicity of pesticides and that no testing was done on effects to wildlife. Regarding residues in food, she stated that government protection through the Food and Drug Administration was minimal and that tolerances provided a false sense of security, because usually, only minimal safety data were available.

In human safety, Carson pointed out that exposure to or ingestion of various products, each at individually safe levels, taken together, could lead to health problems. Also, she described the concept of delayed physiological symptoms (e.g., mental problems and cancer). She also considered disruption of key metabolic pathways and mutations a high price to pay to have no mosquitoes. She stated that with safety knowledge increasing rapidly, what is safe today is not safe tomorrow. She cited tumors and leukemias brought on by carbamates, DDT, and aminotriazole as problems.

Carson discussed the resistance of insects to insecticides at length and indicated that the U.S. Department of Agriculture's solution at the time was to recommend more frequent sprays or greater quantities. She sated that DDT brought on the "age of resistance" and noted that chemical treatment was a treadmill that , once started, could not be stopped.

Carson concluded that our desire of total control of nature was conceived in arrogance.

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Resource Type

Case Study / Scenario