

International Hazard Datasheets on Occupation



Entomologist

Who is an entomologist?

An environmental-health entomologist studies insects that transmit diseases; a worker in an entomology laboratory identifies various types of insects, monitors pesticides and checks food infested by insects and other pests; a veterinary entomologist locates and identifies insects that transmit diseases to animals and/or are parasites and develops appropriate eradication techniques.

What is dangerous about this job?

- Development of zoonotic diseases as a result of contact with a disease-transmitting insects, in the laboratory, while carrying out an experiment or doing field work
- An acute or chronic poisoning hazard, due to over-exposure to pesticides and other agrochemicals
- Bites and/or stings caused by insects, snakes and other animals
- Exposure to insects may cause allergic and even anaphylactic reactions

Hazards related to this job

Specific preventive measures can be seen by clicking on the respective  in the third column of the table.

Accident hazards 	<ul style="list-style-type: none"> • Slips, trips and falls while doing field work and surveys and during laboratory work 	
	<ul style="list-style-type: none"> • Involvement in a traffic accident while accomplishing field-work and/or when driving to or from the field 	
	<ul style="list-style-type: none"> • Exposure to extreme outdoor temperatures when working in the field 	 
	<ul style="list-style-type: none"> • Acute intoxication resulting from over-exposure to pesticides and other agrochemical preparations 	
	<ul style="list-style-type: none"> • Development of a zoonotic disease as a result of occasional contact with a disease-transmitting insect: in the laboratory; when carrying-out an experiment; or while doing outdoor work 	
Physical hazards 	<ul style="list-style-type: none"> • Exposure to various environmental variants, such as extreme weather conditions, high moisture content, increased or reduced air pressure, etc.; included here are hot-weather hazards like sunburns, heat cramps, excessive heat, drying, skin-cancer,... 	
	<ul style="list-style-type: none"> • Exposure to radiation, when it is used for insect extermination. 	

Chemical hazards 	<ul style="list-style-type: none"> • Eyes and skin itch and/or blistering, caused by pesticides 	2 6
	<ul style="list-style-type: none"> • Hazard of chronic poisoning caused by pesticides (see Note 2) 	2 6
	<ul style="list-style-type: none"> • Hazard of being exposed to various chemicals and poisons when doing extermination work in the field or in the laboratory. 	7
Biological hazards 	<ul style="list-style-type: none"> • Hazard of contracting various infectious diseases transmitted by insects (lice, ticks, etc.) and animals (zoonoses; - may constitute a real problem in the case of a veterinary entomologist) 	2 3 8
	<ul style="list-style-type: none"> • Exposure to microorganisms and their poisonous byproducts 	3
	<ul style="list-style-type: none"> • Exposure to poisonous or allergenic plants and to their byproducts 	3
	<ul style="list-style-type: none"> • Exposure to insects, which may develop into allergic or anaphylactic effects; esp. when performing biologic extermination control work 	2 3
	<ul style="list-style-type: none"> • Bites and stings by insects, snakes, and other pests, while doing field and laboratory work 	
Ergonomic, psychosocial and organizational factors 	<ul style="list-style-type: none"> • Damage to the musculoskeletal system, including injuries caused by work posture, and/or by carrying / moving heavy or bulky loads 	9
	<ul style="list-style-type: none"> • Physical and chemical factors that cause nervous agitation or stress (e.g. air pollution, noxious odours, excessive noise, defective lightening, sick-building syndrome, etc.) 	
	<ul style="list-style-type: none"> • Various psychosocial factors specific to the task or the workplace (eg.human relations, work organization) 	

Preventive measures

- 1 Wear tall shoes with non-slip soles
- 2 Wear work clothes that are appropriate to the specific conditions of the climate, environment, type of work, work hazards and the types of animals with which there is contact
- 3 Use personal protection equipment appropriate for the specific problem you are handling, including boots and gloves; if necessary - smear yourself with odorous insect-repellent
- 4 Use appropriate appropriate work clothes, including a hat for protection from the sun; insist on drinking enough water when doing field work in hot weather or bright sunlight
- 5 Use appropriate safety rules and regulations of the IAEA
- 6 Work with hazardous materials should be carried out in accordance with the manufacturer's data sheets and with the relevant legal regulations
- 7 Consult the MSDSs of the materials you work with, in order to get data regarding their properties, the potential hazards and the means of prevention

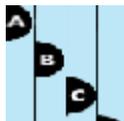
8 Hygienic rules regarding eating during lunch-breaks, esp. when the work is carried out in the field, must be respected

9 Use correct lifting techniques of heavy loads.

Specialized information

Synonyms Insect researcher; agricultural/scientist.

Definitions and/or description Studies of behaviour of animals and plants: Identifies and classifies the various species of insects and similar creatures, such as mites and spiders. Assists in the control and eradication of pests in agriculture, in built-in areas and in forests, by developing new and improved pesticides, as well as culture and biological techniques, incl. use of the natural enemies of the pests. Investigates insect propagation and their natural habitats and recommends techniques for the prevention of the infiltration and distribution of detrimental species [acc. to DOT]. [Note 1].



Major types of entomologist are: environmental-health entomologists; entomology laboratory workers; veterinary-entomologists; and various other scientists employed by universities, research institutes and ministries of agriculture.

Entomologists who investigate plant diseases caused by insects study the biology and physiology of insects and pests, in order to find ways for exterminating them. The major research fields of the plant protection entomologist are: Biological extermination; Chemical extermination; Disruption of insect hormonal activity; Biotechnology; and Genetic engineering. Entomologists may work in coordination with virologists and nematologists.

Related and specific occupations Agricultural worker; animal-transmitted-diseases investigator; chemist; ecologist; forensic-entomologist; forester; insect-biologist/physiologist; instructor/worker, plant-protection division; medical-entomologist; medical-practitioner; microbiologist; parasitologist; taxonomy worker; veterinarian; veterinary-entomologist; veterinary-parasitologist; zoologist.

Tasks Administering; assisting; attending classifying; comparing (the findings to the standards); coordinating; and counseling; counting; cultivating (insects and other pests); defining (insect type and species); depositing (testimony at court); designing; determining; developing; diagnosing; disinfecting & sterilizing; driving; examining (foods infested by insects and similar pests); exterminating; growing (insects); identifying; inspecting; instructing & guiding; investigating; lecturing; locating (potential hatching-And sites; mosquito types; parasites;...); marking; monitoring; observing; pest-controlling; powdering; preventing; recommending; releasing (insects – for tracking purposes;...); reporting; sampling; studying; surveying; testing (extermination efficiency; laboratory and field samples;...); trailing; trapping; writing.

Primary equipment used Cages; greenhouses; habitats; insect-trapping equipment; laboratory equipment; microscopes; various optical instruments; 4x4 vehicle.

Workplaces where the occupation is common Agricultural research institutes; Entomological laboratories; Health authorities and offices; Universities.

Notes The range of activities of entomologists is very wide and includes: investigating and exterminating



of disease-carrying insects, such as mosquitoes, flies, lice, fleas, bedbugs and cockroaches; investigating and examining of agricultural pests such as aphids, ants, grasshoppers; study of potentially useful insects such as honeybees, wasps, butterflies, moths, cicadas, crickets; study of plant diseases and their damages; study of parasites of home pet-animals and of farm animals; investigating of zoonoses; investigating of insects habitats; study of damages to forestry; etc

Chronic poisoning may appear after a prolonged period of exposure; therefore, it is often difficult to find the connection between the toxic effect and the pesticide. However, certain body organs such as liver, kidneys, the brain and the CNS may be damaged after some time. Also, exposure to pesticides may aggravate other diseases that the past user already suffers from. Therefore, the user of pesticides must be very careful at all times.

References



1. Encyclopaedia of Occupational Health and Safety, 4th Ed., ILO, Geneva, 1998.
2. Encyclopaedia of Occupational Health and Safety, 3rd Ed., ILO, Geneva, 1983.
3. U.S. Department of Labor: Dictionary of Titles (DOT), 4th. Ed., 2 Vol., 1991.
4. U.S. Department of Labor: Occupational Outlook Handbook, 1996-1997 Ed., NTC Publication Group, 1996.
5. Langley, R.L. et al: Safety and Health in Agriculture, Forestry, and Fisheries, Government Institutes, Inc., 1997, Maryland, USA.

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