

## **HACCP - HYGIENE AND PEST CONTROL IN ANIMALS TREATMENT**

**Robert Wrzesien, Elzbieta Budzinska-Wrzesien,**

*Division of Animal and Environment Hygiene  
Warsaw Agricultural University, Ciszewskiego str.8, 02-786 Warsaw, Poland*

**Key words: HACCP, hygiene, zoonosis, pest**

### **Introduction**

Hygiene seems to be the most important tool keeping our practice functioning properly. There are several reasons why hygiene must be effective.

First of all “Health Needs” have to help prevent the spread of disease among animals and zoonosis between staff and visitors and the animals.

Second step “Husbandry needs” have to provide clean safe conditions for the maintenance and housing of animals also call as biological needs.

And the third “Aesthetic needs”: to provide a clean environment to enhance farm or plant.

Hygienic work practices include the following procedures with critical points

1. Removal of animal discharges.
2. Removal of spilt and left over food stuffs.
3. Removal of other wastes and organic material that will decompose rapidly.
4. Removal of all waste material without exposing it to other animals or to visitors.
5. Regular cleaning and disinfecting of tools and equipment.
6. Replacement of natural surfaces (sand, earth) and bedding materials.
7. Frequent changing of pool water, cleaning of pool surfaces and flushing to remove chemicals.
8. Daily cleaning of food and water containers, replacement of drinking water.
9. Cleanliness in handling, presentation and storage of food stuffs including hay.
10. Cleaning of food preparation utensils and areas.
11. Pest control.
12. Personal hygiene.
13. Cleaning of public areas, washrooms, facilities, general site grounds.
14. Care and attention in handling animals.

### **Personal hygiene on farm or on plant**

We cannot be emphasized enough with personal cleanliness and hygiene; it is an extremely important part of practice. We can prevent of disease problems and infections by cleanliness and common sense. The keeper should be aware of the ways in which disease and infection can be spread. Disease can be introduced into the body through injuries from animals, particularly cuts, bites and scratches. It can be caused by contact with feces, urine,

saliva, skin, or direct respiratory exhalation. It can be present in cage soil fresh feed or substrate, in objects removed from the cage, boots, dirty hands, clothing, or it can come from direct contact with the animal. Avoid unnecessary contact with animals; wear rubber gloves, coveralls, boots and proper protective clothing. Use a face mask when spraying or working in very dusty areas. Before leaving the site, wash up and change clothing. Report any cuts, scratches or bites, no matter how small, to your supervisor and to first aid. The HACCP program can be apply by few simple steps. Wash hands before eating or smoking, whenever leaving or between work areas, or after handling animals. Don't eat or smoke in animal containment areas. In quarantine, follow the posted procedures; they are for your protection and the protection of your stock. Never touch dead animals or animal fecal matter (especially primate) with the bare hands. Use rubber gloves. Remember you can bring disease into the site from farm animals, pets, and humans, as well as spreading site diseases outside the site. If staff are sick or have any kind of respiratory ailment, flu or cold, should stay. Staff also forgot to keep their fingers out of your mouth, eyes and nose especially if the are smokers.

#### ZOONOSIS

Zoonosis are defined as those infections which are naturally transmitted between vertebrate animals and man (W.H.O. Committee on Zoonosis, 1969). There are more than 100 known diseases of vertebrate animals that can be transmitted naturally and directly from wild and domestic animals to humans.. Zoonosis as we know are infectious diseases, and are caused by viruses, bacteria, fungi, protozoa or by parasites, may infect the body through the respiratory tract, mucous membranes, the mouth or the skin, scrapes or wound. Zoonosis can be transmitted from animals to man by several methods. Direct Transmission; direct or immediate contact with a diseased animal. (e.g. Rabies, ringworm). Indirect Transmission; exposure to disease by being in contact with objects or materials which have been contaminated by a diseased animal. (i.e. Amoebiasis, hookworm). Contact with Disease Carriers; some diseases may be carried by a species without causing illness, but contact with the carrier may cause illness or death in susceptible species. (i.e. Herpes B virus).

Infections from Food and Water; some diseases persist in contaminated food and water, and are transmitted by ingestion. (i.e. Giardiasis, salmonellosis). Air-borne Infections; disease organisms can be transmitted on droplets of moisture coughed or sneezed by a sick individual, or on dust particles in a contaminated environments, and breathed in by the susceptible host.

Infections from Blood Sucking Arthropods; Some diseases of man and animals are normally passed through the bites of fleas, flies, mosquitoes, lice, or ticks. (i.e. Equine Encephalomyelitis, malaria, West Nile Disease, FeLV).

Most zoonotic infections can be avoided by persistent cleanliness and personal hygiene. Prevention by means of vaccination and control by check ups, X-rays, and stool checks on a regular basis are successful. All new keepers should participate in the site's health program, including vaccinations and regular fecal samples. By knowledge of disease transmission, good personal cleanliness and clean working habits, the keeper can take precautions against being a link in the transmission of disease between animals and man and vice-versa. Pest control in the Site is necessary to help prevent the spread of disease and infection, to protect the visitor from exposure to certain zoonosis, to reduce the annoyance to both animals and man, and to ensure that captive animals receive the food set out for them (rather than having that food consumed by rodents, birds or insects).

#### RODENTS

Rodents include rats, mice and voles, both those common to human habitations as well as local and naturally occurring wild rodent populations. Rodents can be disease vectors as well as freeloaders on a Site's food supplies, and rodents can also cause physical damage to material and to other animals.

#### BIRDS

Birds such as pigeons, sparrows, starlings, raptors and various waterfowl can compete for food with site animals, foul food and water and be vectors and reservoirs for disease.

#### INSECTS AND ARACHNIDS

Cockroaches, flies, ants, ticks, fleas and lice all cause various problems, they contaminate food supplies (their larvae), spread disease and are parasitic on (or annoy) site animals. Cockroaches can carry several infectious agents and parasites. Spiders are generally beneficial but centipedes can bite.

#### **Indigenous and feral carnivores**

Predators can cause much damage in sanctuaries by killing and injuring animals spreading disease such as rabies, and generally stressing animals.

#### **Other problems**

Poisonous plants, thorny brush, trees and weeds can also be annoying/dangerous to animals, staff, and visitors.

Many factors contribute to the presence of pests in the site today and much can be done to eliminate them or reduce them to manageable proportions. Improper sanitation: Spilt food in food storage areas and kitchen refuse all become a food source for pests. All bulk food should be stored in rodent proof containers, preferably off the floor in a clean dry place.

Always clean up spillage, never leave spilt food where it may attract pests. Kitchen areas must be kept scrupulously clean, as must all storage areas. Animal wastes should be bagged where possible and stored in a proper location until garbage pick-up. Bagged refuse should not be accessible to rats, mice, etc. Keep drains and ditches clean eliminates breeding places. Nesting areas: timber and other material laying around can provide resting places for rodents. Keep your area tidy, clean up woodpiles and block all holes in floors, walls, eaves, etc. to keep out sparrows and other birds. Inadequate barriers: Many buildings abound with places for rodents to hide and nest. Keep food in tightly lidded containers. Keep doors shut; check fences top and bottom and ensure that they are predator proof. Block off holes which might provide access for birds.

### **Prevention procedures**

Sanitation: Maintain a clean work place. The simple rat and mouse traps, spring loaded, can be very effective when properly used. Flypaper, fly lamps, mechanical devices, electrical fences and pest proofing can all reduce pests to a controllable minimum.

Chemical control: Application and procedures involving chemical poisons must follow federal and provincial regulations. Poisons can be dangerous in the site unless site animals are absolutely protected against accidental contamination, from both the poison source and from poisoned pests. Pesticides (paints, sprays, fogs, dust and baits) are used; so are anti-coagulants in baits and traps. No-pest strips can be used in small exhibits to control insects, especially overnight if the cage is empty.

### **Conclusions**

Hazards to Site animals: Rodents or birds can consume so much of an animal's food that it does not get enough to eat. Check all feed dishes, especially dry food, for rodent feces, by which disease can be spread to your animals. Rabies is a dangerous disease; its frequency of occurrence coincides with increases in natural predator populations such as fox. Observation of animals for any bizarre behavior or sudden behavior changes, both of which might indicate contact with a rabid animal is also needed.

Hazards to the public: Remember that Site visitors can be exposed to infection or disease through contact with pests in the Site. Keep your areas as clean as possible.

Wild birds are often a problem in the Site. Their extreme mobility makes them a dangerous disease vector, their dropping contaminate food and water areas and they can consume more site animal food than the animals for which the food is meant. Wild bird populations may also be reservoirs of avian T.B.

Poisonous plants: Poisoning of Site animals by consumption of plant material containing toxic substances is uncommon, though any animal fed in a controlled environment can be exposed to toxins. Usually when good food is available foraging animals won't select poisonous plant; as many of these taste bitter. Dried and cured poisonous plants usually lose their toxic properties (i.e. in hay.) Sometimes they may inadvertently be used in an exhibit as cage furniture, decoration or be offered as browse or occupational food. Poisonous plants should not be planted or allowed to remain in or near animal exhibits; all areas in and around exhibits should be regularly checked for poisonous plants.

*The references are available at the authors in case of interest.*