**S2 Table: Biosecurity guideline for the commercial poultry industry in Bangladesh\***

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| **Principle 1: Isolation** |
| **Sl** | **A. Location** |
| 1. | Minimum 200m distance between a poultry farm to the next poultry farm |
| 2. | Minimum 200m distance allowed of back yard poultry to a poultry farm |
| 3. | Minimum 1km distance between a poultry farm to processing plant |
| 4. | Minimum 1km distance between poultry farm to Live Birds Market |
| 5. | Minimum 500m distance between poultry farm to residential area |
| 6. | Minimum 1km distance between a poultry farm to the nearest urban or village waste disposal facilities |
| 7. | Minimum 200m distance between a poultry farm to the nearest standing body of water (pond, lake, dam) |
| 8. | Minimum 1km distance between a poultry farm to the nearest river with the possibility of flooding |
| 9. | Minimum 2m distance between farm fences to a poultry house |
| 10. | Minimum 100m distance between a poultry house to large trees that host wild birds |
| 11. | Minimum 10m distance between shower/washroom/toilet for the farm workers and the poultry house |
|  | **B. Farm Characteristics** |
| 1. | Farm must be surround by a 2m high protective fence |
| 2. | Farm must have a lockable gate |
| 3. | Farm must have only one main gate entrance, in and out of the farm |
| 4. | Farm must have warning signs at the gate and on fence indicating that access is restricted |
| 5. | All sheds on farm must be locked at all time |
| 6. | Sheds must be oriented with wind flow going from the younger to older groups |
| 7. | A minimum distance (Double the width of the shed) between sheds on farm is maintained |
| 8. | All sheds must have bird proof nettings |
| 9. | Birds of different species (chickens and ducks) are not allowed on the same farm |
| 10. | Flocks of different age groups (multi-age farm) are not allowed on the same broiler farm |
| 11. | Birds of different ages are not allowed in the same shed |
| 12. | Un treated water (non filtered, non chlorinated) not allowed for drinking or cooling at the farm |
| 13. | A safe dead birds disposal system (pit, incinerator, composter) present at the farm |
| 14. | A safe manure disposal system (pit, incinerator, composter) present at the farm |
|  | **C. Traffic On and Off the Farm** |
| 1. | Farm vehicles never to be taken off the farm |
| 2. | No lent or borrowed equipment from other poultry unit or farm allowed to be used at the farm |
| 3. | All visitors to the farm must sign a log book |
| 4. | No visitors are permitted on the premises except authorized personnel |
| 5. | All visitors must be asked where they have been prior to coming on the farm, to ensure no previous contact with poultry over the last 24 hours |
| 6. | All visitors and employees must have a shower (only for layers) and change clothes and footwear (farm clothes) before entering the farm |
| 7. | All vehicles coming onto the farm must be checked to see if they are clean |
| 8. | All vehicles must be washed with detergent and then disinfected (wheels, undercarriage, driver cabin, etc) before entering the farm |
| 9. | No vehicles allowed to drive from outside the farm into the poultry sheds area |
| 10. | Vehicles must park no less than 30m of poultry sheds |
| 11. | Drivers are no allowed into poultry sheds |
| 12. | Farm employees not allowed to ride between two or more units or farms in the feed or egg truck |
| 13. | No one except the farm manager, employees, service personnel and veterinarians are permitted into poultry houses prior to load-out |
| 14. | Employees are assigned to their own sheds and don’t visit other sheds unless they showered and change clothing |
| 15. | Load-out crews are not permitted to go anywhere else on the farm except for house they are assigned to work in |
| 16. | Farm manager and employees never visit other farm |
| 17. | Farm manager and employees never visit other farm during disease outbreak |
| 18. | Farm manager and employees never visit the live-side of the processing plant or wet market |
| 19. | When there are multiple ages of birds on the farm, the order of birds’ care must be from youngest to oldest or different employees caring for different ages |
|  | **D. Pest Management and Other Animals** |
| 1. | Farm must have a rodent control plan |
| 2. | Bait boxes and traps must be regularly checked to be sure that the bait is fresh and to remove dead rodents |
| 3. | Rodent activity must be regularly checked, e.g., active holes near the foundations, chewed curtains and insulation, rodent droppings on sills and in entry-rooms |
| 4. | No trash and junk are allowed to pile up for 30m around the sheds and in the entry-room |
| 5. | Grass and weeds must be trimmed around the house |
| 6. | Outside feed spills must be cleaned promptly |
| 7. | Dead birds must be removed promptly and place them in vermin proof containers prior to disposal |
| 8. | The screening in the eaves of poultry houses must be weekly checked and repaired to prevent wild bird |
| 9. | Sheds must have concrete floor or slates and pads long the walls and at every entrance to the house |
| 10. | Regular spray for insect control, using approved insecticides must be applied at the farm |
| 11. | Farm must have insects control plan for darkling beetles, lice, mites and flies |
| 12. | Employees must be trained in the usage of insecticides and pest management |
| 13. | Farm must have wild birds control plan |
| 14. | Farm must have stray dogs and cats control plan |
| 15. | Pet dogs, cats and birds (parrots/ pigeons) are not allowed on farm or to enter sheds |
| 16. | Other farms animals like cattle, goats, etc, are not allowed on farm and within 30m of poultry sheds |
| **Principle 2: Good Farm Hygiene** |
|  | **A. House Cleaning and Disinfection** |
| 1. | Litter that is removed from poultry houses must be stored in a covered shed or covered with plastic sheet |
| 2. | Used litter must be treated in an approved, properly managed composting facility before prior to being sold out |
| 3. | Untreated litter should not be spread on fields adjacent to poultry houses |
| 4. | Used litter must not be stored near clean litter |
| 5. | When removing litter from poultry houses any spills in roadways and entrances to poultry houses must be cleaned up immediately |
| 6. | All equipment used during litter removal must be properly cleaned and disinfected after each use |
| 7. | After litter removal the poultry house must be thoroughly swept and clean from top to bottom |
| 8. | All rafters, sills, lighting fixtures, fan blades, motors, louvers, brooders etc. must be blown off or wiped and clean |
| 9. | The entire facility, including curtains (inside and out), entry rooms, and equipment must be washed from top to bottom with a detergent spray |
| 10. | The entire facility must be disinfected using an approved product at the concentration and quantity recommended by the manufacturer |
| 11. | A suitable sprayer should be used for washing and disinfection |
| 12. | All feed pans, feed lines, and hoppers should be emptied prior to cleaning |
| 13. | All feed pans, cones, hoppers, and drinkers should be scraped, scrubbed, washed, and disinfected as per need |
| 14. | The feed bin, boot, and auger must be regularly cleaned and disinfected |
| 15. | Water lines should be cleaned, de-scaled, and sanitized between flocks. water lines |
| 16. | Loose feathers and debris must be cleaned/burnt up outside, around the house |
| 17. | After cleaning and final disinfection the shed should be allowed at least 2 weeks to dry out and remain empty |
| 18. | The shed must be re-bed using clean, dry, litter, which is free of any moldy smell and fumigate before use |
| 19. | Removable equipment like feed trays and jug waters should be cleaned and disinfected just prior to setting the house up for new birds |
| 20. | Litter must be insect-free |
| 21. | Staff should be trained about the correct use of disinfectants and spraying equipments |
| 22. | Any equipment such as vaccinators, debeakers, egg trays, etc, brought into the farm must be cleaned and disinfected |
|  | **B. Personal Hygiene and Apparel** |
| 1. | Vehicles that leave the farm must be cleaned and disinfected regularly, including the cabs and beds |
| 2. | All employees must wash, and change cloths and footwear before entering to work in the farm or poultry houses |
| 3. | Street clothes or shoes must never be worn in the poultry houses |
| 4. | Separate cap and pair of coveralls should be used for each house and/or each brooder and finisher unit |
| 5. | All caps and coveralls must be laundered regularly within the farm area, especially between flocks |
| 6. | Separate pair of boots or sandals must be used for each house and/or brooder and finisher unit |
| 7. | Boots or sandals must be cleaned and disinfected before and after use |
| 8. | Hands must be cleaned and disinfected (disinfectant cream/soap can be used) often and when move between units |
| 9. | Dip pans (foot bath) with a daily refreshed solution should be placed at every poultry house entrance |
| 10. | All visitors who wish to enter poultry houses must wear clean, sanitized caps, coveralls, gloves, and footwear |
| 11. | All soiled, disposable apparel should be washed or disposed of on the farm when visitors leave |
| 12. | Farm employees should be trained regularly about personal hygiene issues |
| 13. | Clean basin with running water, showers and toilets must be available in every farm |
| **Principle 3: Flock Health Care and Monitoring** |
| 1. | The veterinarian should be called immediately when birds appear to be sick/in unusual condition |
| 2. | Sick or dead birds should be regularly examined by clinical, post mortem and laboratory tests to determine if infectious agents may be responsible for the problem |
| 3. | Birds should routinely be bled and/or swabs taken for serological or diagnostic purpose |
| 4. | Birds should be vaccinated for agents known to have caused problems at the farm in the past. The vaccination program should be developed by the veterinarian |
| 5. | When using vaccines the manufacturer’s instructions must be followed |
| 6. | Antibiotics must be administered according to the dosage and treatment period listed on the label or according to the instructions of a veterinarian |
| 7. | Antibiotics must be used only when birds are sick, following instruction by veterinarian |
| 8. | Antibiotic should be withdrawn in accordance to the manufacturer instruction label |
| 9. | Expired vaccines or antibiotics are never to be used at the farm |
| 10. | Birds should be dewarmed regularly, according to veterinary instruction |
| 11. | A regular flock monitoring program for disease should be in place |
| 12. | Dead /sick birds should be sent to the laboratory in proper, safe way for investigation as instructed by the veterinarian |
| 13. | A documented contingency plans should be ready in case of HPAI or other notifiable infectious disease outbreak in the farm |
| 14. | A registered veterinarian must be responsible (part time) for the animal health of the farm |
| **Principle 4: Good Farm Management Practices** |
| 1. | A flock record must be kept for each shed. The record includes information of DOC origin, number of chicks placed, daily mortality (numbers and %), daily feed consumption, daily water consumption, weekly body weight, daily egg production, vaccinations, medications, vitamins administration, laboratory results, etc. |
| 2. | Housing temperature is maintained according to guidelines prescribed by the breeding company |
| 3. | If birds look chilled, they must be supplied more heat without compromising air quality |
| 4. | Poultry houses must be ventilated according to breeding company recommendations |
| 5. | The air in the poultry houses must be suitable for human consumption (long term) |
| 6. | Poultry houses should never be overstocked |
| 7. | Poultry houses must have sufficient eating and drinking space as prescribed by the breeding company |
| 8. | The lighting program must follow the prescribed by the breeding company |
| 9. | All broiler farms should maintain all in & all out system |
| 10. | Dead birds must be disposed safely on the farm (in a sealed pit, incineration, composting) |
| 11. | The litter on the farm must be well managed and disposed properly |
| 12. | Dead birds are never to be stocked piled overnight before disposal and exposed to pests |
| 13. | Dead birds are never to be left inside the shed longer then 2-5 hours |
| 14. | Feed should be sourced only from a trusted feed mill |
| 15. | Feed must be stored on farm in sealed and dry containers with no access to rodents or wild birds and free of fungus and mould |
| 16. | After house depopulation no birds should be left behind inside or outside the house |
| 17. | The down time between flock should never be less than two weeks |
| **Principle 5: Compliance with Government Regulations** |
| 1. | All farms must join the government scheme for compulsory farm registration and upgrading to meet government minimum biosecurity standards |
| 2. | All farms should join the government compensation schemes for HPAI |

\* Table includes only the recommendations for the small commercial boiler and layer farms. Recommendations marked 'optional' have been omitted.