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Identification of Healthy Animals (Cattle, Buffalo, Sheep, Goat, & Pig) and Birds (Poultry & Duck) for Vaccination: An Overview

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Abstract:

Vaccination is one of the most effective preventive measures for controlling infectious diseases in livestock and poultry. However, vaccines should be administered only to healthy animals and birds to ensure optimal immune response and minimize the risk of adverse reactions. Identification of healthy animals involves careful clinical examination and observation of general health status before vaccination. Healthy cattle, buffaloes, sheep, goats, and pigs typically exhibit normal body temperature, alertness, active movement, bright eyes, moist muzzle (where applicable), good appetite, normal rumination in ruminants, smooth hair coat, and absence of nasal discharge, coughing, diarrhea, lameness, or wounds. Similarly, healthy poultry and ducks are active, alert, have bright eyes, clean feathers, normal feed and water intake, regular droppings, and show no signs of respiratory distress or weakness. Animals or birds that are sick, stressed, severely malnourished, or recovering from illness should not be vaccinated until they regain normal health. Proper identification of healthy individuals before vaccination enhances vaccine efficacy, promotes animal welfare, reduces disease outbreaks, and contributes to improved livestock productivity and sustainable animal health management. Regular health assessment, good husbandry practices, and adherence to recommended vaccination schedules are essential components of successful disease prevention programs.

Keywords: Healthy animal identification, Vaccination, Livestock health, Poultry health, pre-vaccination examination, Clinical health assessment, Disease prevention

Introduction:

Animal behaviour is a significant factor in determining an animal's health. Normal animal behaviour includes staying with the herd, having bright eyes, a moist nose without discharge, no wounds, and a normal appetite. Normal behaviours are actions we expect to see from animals in good welfare, such as playing or grooming. Normal behaviours tell us that an animal is happy, healthy, and relaxed in its environment. When animals become stressed, bored, or sick, they may perform abnormal behaviours such as biting, hiding, or pacing. A healthy animal has a shining, smooth and even coat as well as shiny horns and hoofs. Eyes should be clear, without discharge or excessive tearing, and the muzzle should be moist. In short-haired animals, e.g. goat and cattle, the hair or coat of the healthy animal will be smooth and shiny. Healthy cattle, buffaloes and their calves lick their coats, and the lick marks will show. Horses should not sweat when resting.

Observing Basic Health Parameters:

1. **Breathing frequency** - (Breathing in + breathing out) is 10-30 times per minute in normal adults and 30-50 times per minute in calves. Observed best from the animal's right flank, seen from behind.
2. **Rumination** - Not less than 40 times per minute and 7-10 hours per day.
3. **Rumen movement** - Two to three per minute can be felt by pressing lightly on the upper part of the left flank.
4. **Appearance** - A healthy animal has a shining, smooth and even coat as well as shiny horns and hoofs. Eyes should also be normal without discharge or tears and muzzle moist.
5. **Fever** - Usually accompanied by rapid breathing, shivering and occasionally diarrhoea. Ears, horns and legs are usually cold to touch while body is too warm.

How can you identify a healthy animal?

1. Shows normal movement, has a normal body temperature, a good appetite, and no cough, nasal discharge, or ocular discharge.
2. Animal husbandry is the science of managing animal livestock. It involves feeding, breeding, and controlling diseases in farm animals. Animal husbandry involves rearing animals such as cattle, poultry, and fish to obtain desired products.
3. A healthy animal's posture is normal. It feeds regularly.
4. Animal Husbandry is the scientific management of animal livestock. It includes various aspects such as breeding, feeding and disease control. Animal-based farming includes cattle, goat, sheep, poultry and fish farming.

In order to take care of the animals properly, it is important that animal keepers should be aware of the animal diseases.

Diseases can be properly diagnosed only by a veterinarian, but if the farmer is personally careful about some activities, he can get the disease checked in time and can avoid any major damage. The difference between healthy and diseased cattle can be seen easily. Diseased animals look lazy and ears also seem to be loose.

A healthy animal is always alert, moves its ears again and again and also takes interest in nearby activities.

- Healthy animals' eyes are always bright.
- Animals chew the cud till 6-8 hours after eating.
- The animal's nose remains wet and cool.
- Animal's skin remains smooth and shiny.
- The animal defecates 8-10 times daily, producing approximately 15-20 kg of faeces.
- The animal's body temperature remains around 100-102.5 degrees Fahrenheit.
- The respiratory rate should be 10-30 breaths per minute.

Signs of Good Health and Illness in Farm Animals:

Farmers must observe their animals closely to make sure they are healthy. A sound management program to keep animals healthy is essential to the farming of all livestock. If the health of the herd is

compromised, the farming operation will suffer reduced efficiency. To recognize clinical signs of diseases that are common to livestock, it is important to be familiar with what is normal or healthy. Farmers should assess the herd or flock's general health on a regular basis, including its vital signs, body condition and coat. As a farmer, you should be able to notice signs of ill health in your animal. You should be able to tell whether the animal is being fed well, and is being kept in an adequately clean and comfortable environment. You should also be able to identify when the animal is not getting enough nutrition from its diet, or when it has fallen prey to an illness or parasitic infection.

A healthy animal is alert and aware of its surroundings. It is active and holds its head up, watching what happens around it. It should stand on all of its feet. If an animal stands separate from the herd, it is often due to ill health. An animal which is not interested in its surroundings and does not want to move has health problems. Healthy animals exhibit normal posture. They are alert, have clear eyes and respond to touch. A running nose or dull eyes may indicate ill health.

A healthy animal will walk easily and steadily, balancing its weight on all of its feet. Steps should be regular. Irregular movements result from pain in the feet or limbs. If you go near an animal that is lying

down, it should stand up quickly, if it doesn't, it may have health problems. Any animal that cannot walk or stand properly must be closely watched, since it may be suffering from ill health. When you notice that the animal is favouring one leg when it walks, it is important that you restrain it until you find out the cause and treat it effectively.

The eyes should be bright and alert with no discharge at the corners.

Most animals have erect ears which move in the direction of the sound. Ear movements are also meant to swat away flies. The body temperature of a pig can be checked by touching its ear.

The nose should be clean with no discharge. In cattle and buffaloes, the muzzle should be moist, not dry. Healthy animals frequently lick their noses with their tongues.

There should be no saliva dripping from the mouth. If chewing is slow or incomplete, there could be a problem with the teeth.

Healthy animals have a good appetite for food and generally like to feed to their satisfaction. Sick animals have no appetite for food. If you notice that your animal has suddenly lost its appetite for food, it could be because it has fallen ill.

The coat of healthy animals should be clean, smooth and shiny and show complete cover. Signs of ill health are the

coat looks dull and hairs fall out. Cold, dry and scarred skin signifies diseases. When you see your animal suddenly show symptoms of a skin disorder, you must pay immediate attention. In short-haired animals, e.g. cattle, the hair or coat of the healthy animal will be smooth and shiny. Healthy cattle and their calves lick their coat and the lick marks will show.

If a cow or buffalo keeps looking at its flanks or kicks at its belly it has a pain in the stomach.

Every breed of farm animal has a specific range of body temperature, pulse rate and respiratory rate that is considered normal. Radical deviation from these values signifies ill health. You will have to check the vitals of your farm animal to ensure that it is physically, mentally and psychologically fit.

Breathing should be smooth and regular when the animal is at rest. Remember that movement and hot weather will increase the rate of breathing. If the animal is resting in the shade, it should be difficult to notice the chest moving as it breathes.

Taking the pulse is important when examining an animal. The pulse of cattle is taken at a point on the underside of the base of the tail. The normal rate is 40–80 beats per minute in an adult. In buffalo the pulse rate is 40–60 beats per minute. Remember that the pulse rate will be higher in young

animals. To take the pulse you should feel for it with the first two fingers of your hand. In llamas, alpacas and pigs there is no point at which the pulse can be taken; the beat of the heart itself must be felt for.

Any deviation of the faeces i.e. too hard, too watery, contaminated with worm segments or stained with blood, indicates ill health. If your animal begins to defecate on its own body, it is an indication that it has a problem in its alimentary canal and needs immediate attention. The droppings of a healthy animal will be firm. Very soft droppings (diarrhea) are a sign of ill health. If the animal has difficulty in defecating (constipation) this is also a sign of poor health.

The normal colour of urine is pale yellow. Deep yellow, blood stained, or cloudy urine shows ill health. When your animal shows pain while urinating, there may be something wrong with its urinal system. The urine should be clear, and the animal should show no signs of pain or difficulty in urinating.

If feed is available, a healthy animal will have a full belly. Cattle chew the cud (ruminate) for 6 to 8 hours each day. It is a sign of ill health when these animals stop ruminating.

In the milking animal, a sudden change in the amount of milk produced could indicate a health problem. Any sign of blood or other matter in the milk indicates an

infection in the udder. There should be no swelling of the udder and no sign of pain when it is touched. There should be no injury to the teat.

When an animal coughs continuously, it means that something is irritating its throat. Coughing is not necessarily a sign of ill health, if it isn't a persistent or chronic cough.

Healthy animals do not show any sign of pain. When animals begin to show signs of pain by grinding their teeth or groaning, it is an indication that something is wrong.

This is the lining of various systems and organs of the body, e.g. eyes, nose or anus. The mucous lining of healthy animals is moist. When these become dry, the animal experiences discomfort and requires immediate attention.

Healthy Livestock	Unhealthy Livestock
Alertness	Lethargic/Listless
Chewing cud	Ruminants not chewing their cud
Sleek coat	Rough hair coat
Bright eyes and pink	Eye membrane Dull eyes
Normal faeces and urine	Abnormal faeces and discoloured urine
Normal temperature	High temperature

Gait steady, No limping	Limping
Normal respiration	Laboured breathing / coughing
Stays in herd or flock	Separates self from herd or flock
Eats and drinks normally	Loss of appetite
Contentment	Runny nose
Normal pulse rate	Swelling on any body part

Appearance of the healthy animal:

Appearance of the animal:

- The healthy animal is alert and aware of its surroundings. It is active and holds its head up watching what is happening around it.
- It should stand on all of its feet. The separation of an animal from the others in its group is often a sign of a health problem.
- An animal which is not interested in its surroundings and does not want to move has health problems.

Movement (GAIT):

- The healthy animal will walk easily and steadily with all of its feet taking its weight.
- Steps should be regular. Irregular movement results from pain in the feet or limbs.

- Horses normally stand during the day.
- If you go near an animal that is lying down, it should stand up quickly otherwise it has health problems.

Eyes:

The eyes should be bright and alert with no discharge at the corners.

Ears:

- Most animals have erect ears which move in the direction of any sound.
- Ear movements will also be quick to get rid of flies, The body temperature of the pig can be checked by touching the ear when an unusually high temperature will be noticed.

Nose and muzzle:

- The nose should be clean with no discharge.
- In cattle and buffaloes, the muzzle should be moist, not dry.
- In sheep and goats, the nose should be cool and dry.
- Healthy animals frequently lick their noses with their tongues.

Mouth:

There should be no saliva dripping from the mouth. If chewing is slow or incomplete, there may be a problem with the teeth.

The coat:

- In short-haired animals, e.g. goats and cattle, the hair or coat of the

healthy animal will be smooth and shiny.

- Healthy cattle, buffaloes, and their calves lick their coats, and the lick marks will show.
- Horses should not sweat when resting.
- In poultry, the feathers should be smooth and glossy and not ruffled.
- In pigs a curly tail is a sign of good health while a scaly skin points to health problems.

Behaviour:

If a horse, cow or buffalo keeps looking at its flanks or kicks at its belly it has a pain in the stomach.

Breathing:

- Breathing should be smooth and regular at rest. Remember that movement and hot weather will increase the rate of breathing.
- If the animal is resting in the shade it should be difficult to notice the chest moving as it breathes.

Pulse:

Taking the pulse is important when examining an animal. In man the pulse can be easily taken but in animals it is more difficult and requires practice.

1. In sheep and goats, you can feel the pulse on the inside of the top of the back leg. The rate of the pulse is 70 - 130 per minute in the adult.

2. The pulse of cattle is taken at a point on the underside of the base of the tail, the normal rate is 40 - 80 per minute in the adult. In buffalo the pulse rate is 40 - 60 per minute.
3. The pulse of the horse is taken on the inside of the cheek. The normal rate is 35 - 40 per minute.
4. The pulse of the camel is taken at a point on the underside of the root of the tail. The normal rate is 35 - 45 beats per minute.

Remember that the pulse will be higher in the young animal. To take the pulse you should feel for it with the first two fingers of the hand.

In the llama, alpaca and the pig there is no point at which the pulse can be taken. In these animals, the beat of the heart itself must be felt for.

Droppings or Dung:

- The droppings of the healthy animal will be firm. Very soft droppings (diarrhea) are a sign of ill health.
- If the animal has difficulty in defecating (constipation) this is also a bad health sign.

Urine:

- The urine should be clear, and the animal shows no signs of pain or difficulty in urinating.
- Horses, mules and donkeys can have thick yellow urine which is normal.

Appetite and Rumination:

- If feed is available, a healthy animal will have a full belly.
- Pigs naturally rush to their feed; if they do not, something is wrong.
- Sheep, goats, cattle, buffalo and camels chew the cud (ruminate) for 6 to 8 hours each day. It is a sign of ill health when these animals stop ruminating.

Milk:

- In the milking animal, a sudden change in the amount of milk produced can mean a health problem.
- Any sign of blood or other matter in the milk points to infection in the udder.
- There should be no swelling of the udder and no sign of pain when it is touched. There should be no injury to the teat.

Body temperature

If you suspect that an animal is sick you should take its temperature. Taking the temperature may reveal a higher-than-normal body temperature, which is a sign of infection.

Conclusion:

The identification of healthy animals and birds before vaccination is a

fundamental step in ensuring the success of disease prevention programs. Healthy cattle, buffaloes, sheep, goats, pigs, poultry, and ducks respond more effectively to vaccines, resulting in stronger immunity and better protection against infectious diseases. A thorough pre-vaccination health assessment, including evaluation of body condition, behaviour, appetite, body temperature, and the absence of clinical signs of illness, helps ensure that only suitable animals and birds are vaccinated. Sick, stressed, severely malnourished, or debilitated individuals should be treated and allowed to recover before receiving vaccines. Combining accurate health screening with proper vaccine handling, correct administration techniques, bio-security measures, and adherence to recommended vaccination schedules improves herd and flock health, reduces disease transmission, enhances productivity, and minimizes economic losses. Therefore, identifying healthy animals and birds prior to vaccination is an essential practice for effective livestock and poultry health management and sustainable animal production.

References:

Please contact the corresponding author.