



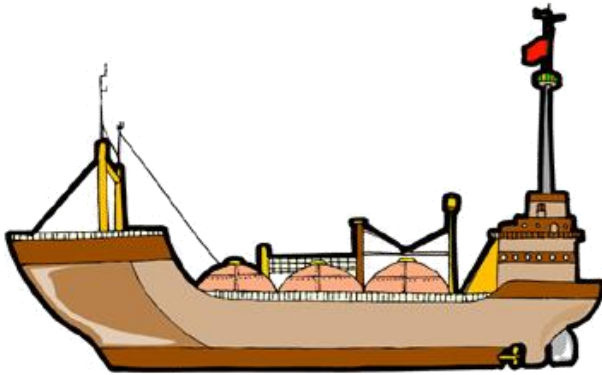
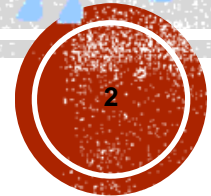
Unit 1

VETERINARY PUBLIC HEALTH AND FOOD SAFETY

(Credit Hours 3+1=4)



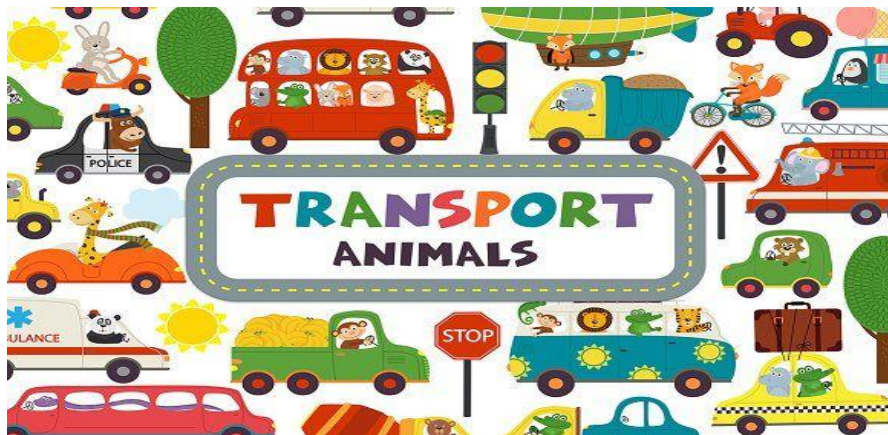
TRANSPORTATION OF FOOD ANIMALS



INTRODUCTION

- The need to transport food animals occurs essentially in commercial agriculture and to a lesser extent in the rural or subsistence sector.
- Animals need transportation :-
 - Marketing,
 - Slaughter,
 - Re-stocking,
 - Change of ownership

Methods used to move animals:-



- On hoof,
- By road motor vehicle,
- By rail,
- By ship,
- By air

INTRODUCTION

Cont...

- The majority of livestock in developing countries: moved by trekking on the hoof, by road & rail
- Urbanizations of the population & commercialization of animal production, livestock needs transportation by road & rail vehicles
- It is the most stressful & injurious stage between farm & slaughterhouse
- Poor pre-slaughter handling: poor animal welfare & loss of production



- The most appropriate methods: on hoof, by road motor vehicle or by rail wagon
- **On hoof-**
 - ✓ For short duration travel
 - ✓ Only where road & rail infrastructure does not exist
 - ✓ It is slow & fraught with risks to the welfare & value of the animals



Moving cattle on the hoof

Cont...

- **Road motor transport-**

- ✓ The most versatile, the method of first choice & the most user friendly
- ✓ The most satisfactory method of transporting cattle



Large truck for cattle transport

Cont...

- **Rail transport**

- ✓ Useful for short-haul journeys where loading ramps are available at railheads and communication is direct to destination
- ✓ Requires more careful management



Rail truck for transporting cattle

SHEEP/ GOATS

Methods of Transport

- ✓ Easiest to transport
- ✓ Generally travel well on hoof, rail or road
- ✓ Double-deck trucks are also suitable



Double-deck truck for transporting sheep/goats

Methods of Transport

PIGS

- ✓ Pigs are difficult animals to transport
- ✓ Only satisfactory method is by road
- ✓ Rail can be used under careful circumstances

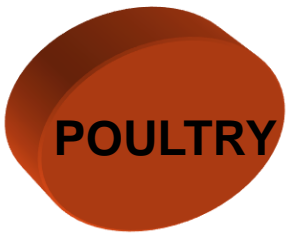


HORSE

Methods of Transport

Slaughter horses are transported in semi-trailers and are loose





Methods of Transport

- Broilers & other poultry: **Turkeys or ducks best transported by road**
- Flocks of birds should be subdivided in small numbers in crates recommended are plastic crates
- Crates can be stacked on top of each other on a vehicle & which can easily be washed after use
- The lid of the crates is for loading & the opening at the side for removal of the birds



Crates for transport of chicken

Requirements in vehicle

Any vehicle used to transport of slaughter livestock

- o Adequate ventilation,
- o Non-slip floor,
- o Proper drainage,
- o Protection from the sun and rain (pigs),
- o Sides surface should be smooth,
- o No protrusions or sharp edges.



Well-ventilated truck for transporting pigs

VENTILATION



- ✓ Never be totally closed
- ✓ lack of ventilation will cause undue stress/even suffocation, particularly if the weather is hot
- ✓ Poor ventilation may cause accumulation of exhaust fumes in road vehicles with subsequent poisoning
- ✓ **Pigs:**
 - Particularly susceptible
 - Excessive heat,
 - Poor air circulation
 - High humidity & respiratory stress
- ✓ The free flow of air at floor level is important to facilitate removal of ammonia from the urine

FLOORS

- Non-slip floors to reduce the risk of animals falling
- A grid of cross slating made from wood or metal is suitable
- The grid can be removable, so the vehicle can be used for other purposes
- Additional balance for animals is provided by partitioning the interior of the vehicle
- Broken floors: cause leg & other injuries



Cattle leg protruding through broken truck floor



Cross slating of cattle truck floor to prevent slipping

Cont...



Poor offloading facilities resulting injuries from mishandling of animals

Cont...

- Require sufficient floor space to stand comfortably without overcrowded
- Overloading results in injuries or even death of livestock



Overloading truck with goats

Cont...



Goats being trampled in the back of a truck



Overloading truck with water buffaloes

FLOOR SPACE

- ❑ Allowances should be made for breed and body size.
- ❑ If the floor area is too large for the number of animals, partitions should be used to avoid animals being thrown about.

Classes of stock	Floor area/animal (m²)
Mature cattle	1.0 - 1.4*
Small calves	0.3
PIGS	
porker	0.3
baconer	0.4
sow/boar	0.8
Sheep/goats	0.4
Ostriches	0.8*

* 50-60 cm vehicle length/head loaded cross-wise

SIDES

- Should be high enough to prevent animals, particularly pigs, from jumping out and injuring themselves.
- Insides should be padded at hip level with to reduce bruising of cattle and ostriches.
- No gaps through which a leg might protrude and broken.
- Narrow entry doors can lead to considerable bruising of hips.
- Rail trucks should be fitted with spring coupling to cushion jerky movement.

ROOF

- Not necessary on a transport vehicle for bovines & small ruminants.
- Vehicles for pigs should have roof unless the pigs are to be transported in the early morning or late evening.

Cont...

At the small-scale level in more primitive conditions animals are often transported under very unsuitable conditions, which may cause a great deal of pain or even death through suffocating, heat stress, dehydration etc.



Cont...



Unsuitable transport of ducks on a motorcycle



Unsuitable transport of chicken on a rickshaw

PRE-LOADING PRECAUTIONS

- To reduce the risk of injury and stress
- Pre- mixing of cattle or pigs leads to greater familiarity and these animals travel better than animals that are strangers
- Cattle should be mixed in a pen 24 hours before loading
- Aggressive animals can be weeded out during this period
- Fighting amongst pigs that are strangers is common, resulting in skin damage, wounds and stress
- Mix pigs from different pens together before loading, smearing pigs with litter or excreta from the same pen so that they smell similar

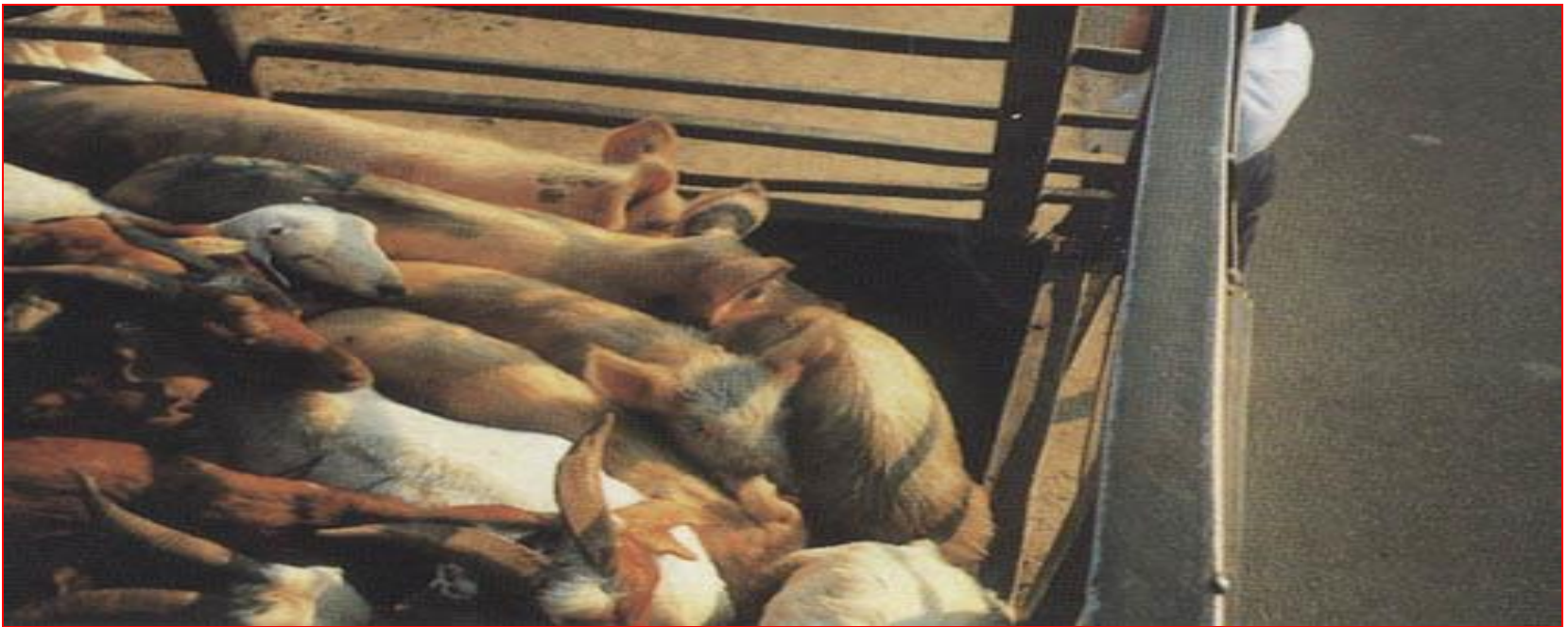


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- Most animals can be fed and watered before transporting.
- Pigs should not be fed before transport as the feed ferments and the gas causes pressure on the heart, leading to heart failure and death.
- Do not mix horned and hornless animals in the vehicles as this causes bruising and injury.
- Different species should not be mixed.
- Sheep, goats and calves under 6 months can be mixed.
- Individual animals can be transported in a loose sack tied at the animal's neck.

Cont...

- Feet should not be tied.
- Pigs should not travel with other species unless separated by a partition.



Malpractice of loading pigs, goats and sheep in the same truck

Cont...

- Bulls should not be carried together with other stock unless separated by a strong partition
- Vehicles should be fitted with a portable ramp to facilitate emergency offloading in case of prolonged breakdown



UNFIT FOR TRANSPORTATION:

Animals that are diseased, injured, emaciated should not be transported.



- Unfit, heavy, pen fed animals should not travel far as they cannot stand up to the rigors of transport.
- Animals in the advanced stages of pregnancy, that risk giving birth during the transportation period.
- Animals that have given birth within the previous week
- An animal unable to move independently without pain



An animal that presents a severe wound or prolapse



New-born animals in which the navel is not completely healed.



TRANSPORT OPERATIONS

- A number of factors must be taken into account during the journey in order that the animals do not suffer, injured or die.
 - Trekking,
 - Time of the day,
 - Duration of journey, Feeding, Watering & Resting interval.
 - Driving,
 - Wind Chill

Trekking

- Only cattle, sheep and goats can be successfully moved on hoof
- The journey should be planned, paying attention to the distance to be traveled, opportunities for grazing, watering and overnight rest
- Walked during the cooler times of the day
- If moving some distance to a railhead, they should arrive with sufficient time to be rested and watered before loading



Cont...

MAXIMUM DISTANCES FOR TREKKING

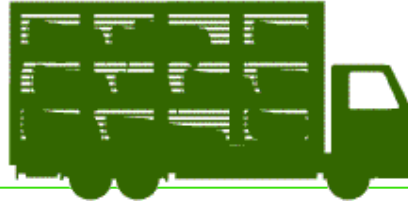
The maximum distances that these animals should be trekked depend on various factors such as weather, body condition, age etc.

Species	One day journey	More than one day	
		First day	Subsequent days
Cattle	30 km	24 km	22 km
Sheep/goats	24 km	24 km	16 km

Time of the day

- High environment temperatures will increase the risk of heat stress and mortality during transportation.
- It is important to transport animals in vehicles during the cooler mornings and evenings or even at night.
- This is particularly important for pigs.
- A combination of high humidity and high environment temperatures is especially deadly to pigs.
- Heat can rapidly build up to lethal levels in a stationary vehicle.
- Wetting pigs with water will help keep them cool.

Duration of journey



Watering & feeding intervals and resting periods

- Cattle and sheep/goats
 - Should not travel for more than 36 hours
 - Offloaded after 24h for feed and water

- Journeys should be short and direct, without any stoppages

- There are recent moves in developed regions, seeking to limit the duration of livestock transports to 8 hours or less

- If the vehicle has been modified to equip it for long journeys, animals may travel for a period exceeding eight hours, providing the recommended times for watering, feeding and rest

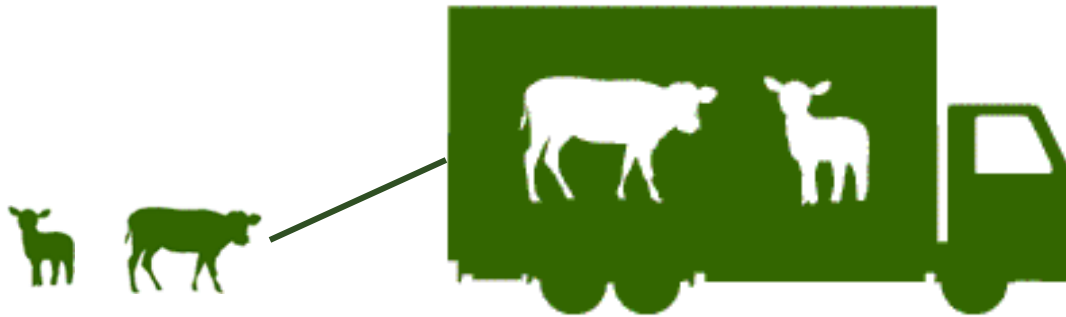
Unweaned Calves & Lambs

1st phase of transport: **9 hours maximum**



A minimum of **1 hour's rest** with watering

2nd phase of transport: **9 hours maximum**



Animals must be unloaded, watered, fed, and rested
for **at least 24 hours**

Bovines, Ovines & Caprines

1st phase of transport: 14 hours maximum



At least 1 hour's rest with watering

2nd phase of transport: 14 hours maximum



**The animals must be unloaded, watered, fed, and
rested for 24 hours**

Pigs

Maximum transport period of 24 hours



24 hours' rest, continuous access to water at all times.

Domestic Equidae

Maximum transport period of 24 hours:



A break every 8 hours with watering and, if necessary, feeding.

After travelling for 24 hours:



The animals must be unloaded, watered, fed, and rested for 24 hours.

Poultry, domestic birds & rabbits

For journeys lasting more than 12 hours, access to food and water is obligatory



This does not apply to chicks being transported for less than 24 hours, providing the journey ends less than 72 hours after hatching

Driving

- Vehicles should be driven smoothly, without jerks or sudden stops.
- Corners should be taken slowly and gently.
- The second person should be in attendance to spot downer animals so that the vehicle can be stopped and the animal lifted.
- Train drivers should avoid “fly shunting” of rail trucks with livestock.

Wind chill

- Wind blowing on wet animals being transported in cold weather.
- Causes a wind chill factor, where the body temperature is considerably reduced,
- Resulting in severe stress or deaths.



THANK YOU