The housing provided to guinea pigs, hamsters or rabbits at commercial facilities is important to their overall health and well-being. The Animal Welfare Act regulations and standards provide detailed information on housing standards for licensed facilities. It is important to understand the regulations and make sure your facilities meet the standards established by the regulations.

By the end of this presentation, you should be able to:
1. Define the different types of facilities (indoor, outdoor)
2. Describe the general structural and maintenance requirements for all facilities
3. Define and describe primary enclosures suitable for each species
4. Describe maintenance, climate and other requirements for primary enclosures

Be sure to refer to the regulations or ask your Inspector if you have any questions about housing.

These videos show facilities that meet and in many cases exceed the AWA Standards and Regulations. Your Animal Care Inspector can provide information on how to make your facility meet standards, and when going above the standards can be good for your business.
Facilities for these species fall into two categories – indoor and outdoor. (Please note that sheltered facilities, with an indoor section with access to outside areas, are not allowed for these species.)

The following slides explain the requirements for each type of facility in more detail.

### Types of Facilities

- Type of facility:
  - Indoor facilities
  - Outdoor facilities
  - Allowed for rabbits
  - Variance required for guinea pigs
  - Not allowed for hamsters

### General Requirements: All Facilities

- Housing for guinea pigs, hamsters and rabbits must:
  - Be structurally sound
  - Be kept in good repair
  - Protect animals from injury
  - Contain animals securely
  - Restrict other animals from entering

### Electrical Supply

- Housing facilities must have enough reliable electric power to provide for:
  - Heating
  - Cooling
  - Ventilation systems
  - Lighting
  - Carrying out husbandry practices

The electrical supply for housing facilities must be sufficient to provide required conditions for the animals. This will help keep animals safe, comfortable, and healthy

### Water Supply

- Housing facilities must have sufficient running potable water to meet animals' needs. For example:
  - Drinking (by guinea pigs, hamsters, rabbits, people, other animals)
  - Cleaning
  - Carrying out other husbandry practices

Photo: D. Ausen, ISU
Food and Bedding

- Store food and bedding supplies in a manner which prevents:
  - Spoilage
  - Deterioration of food
  - Vermin infestation or contamination from:
    - Rodents
    - Insects
  - Refrigeration is required to keep supplies of perishable food, including Vitamin C-rich food required for guinea pigs

- Food and bedding need special storage considerations.
- Food must be stored in a manner which prevents spoilage.
- Food that is improperly stored can lose its nutritional value.
- Food and bedding can become contaminated by vermin or insects. Make sure your storage area is free from these hazards.

Open Supplies

- For guinea pigs and hamsters only:
  - Store open food in containers with tightly fitting lids

In this image, both unopened and opened bags of food are stored properly

Photo: USDA:APHIS

Waste Disposal

- Regular and frequent collection, removal and disposal:
  - Animal and food wastes
  - Bedding
  - Dead animals
  - Debris
  - In a manner that minimizes vermin infestation, odors and disease hazards

The AWA regulations and standards require that housing facility operators have a way to regularly and frequently collect, remove and dispose of waste including those listed on the slide.

This must be done in a way that minimizes vermin infestation, odors and disease hazards.
There are various approaches to effectively remove waste materials that contributes to a clean and well-maintained facility.

Photos: D. Ausen, ISU

Facilities must have readily accessible washing facilities for animal caretakers. Facilities may include washrooms and sinks. Contact your State Department of Labor or Workforce Development with questions regarding workplace conditions or employment regulations.

Photo: D. Ausen, ISU

A building intended to house animals which has environmental controls and meets these criteria:
- Temperature and Humidity (within the limits set forth for that species of animal)
- Odors (must be rapidly eliminated)

Is an enclosed space:
- Roof and walls are continuously connected (a shed or barn set on top of the ground does not have a continuous connection between the walls and the ground. A foundation and floor must be provided)
- Windows or openings that provide natural light must be covered by transparent glass or hard plastic
- At least one door that can be opened and closed

Photo: D. Ausen, ISU
Minimum and Maximum Temperatures for Indoor Housing

- Guinea Pigs and Hamsters:
  - Not below 60°F
  - Not to exceed 85°F

- Rabbits:
  - For temperature 85°F or higher, auxiliary ventilation is required

Auxiliary ventilation, required for rabbits when the ambient temperature is 85°F or higher, can include exhaust fans and vents or air conditioning.

Illustration: Oriana Hashimi-Toroghi: CFSPH:ISU

In indoor housing facilities, sufficient ventilation must be provided at all times for the health and well-being of the animals and to minimize odors, drafts, ammonia, and moisture condensation. Windows, vents, fans or air conditioning may be used to provide ventilation.

Guinea pig and hamster indoor housing temperature cannot rise above 85°F.

When the ambient temperature rises above 85°F for rabbits, provide auxiliary ventilation using fans, blowers or air conditioning.

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Guinea pig and hamster indoor housing temperature cannot rise above 85°F.

When the ambient temperature rises above 85°F for rabbits, provide auxiliary ventilation using fans, blowers or air conditioning.
Outdoor Housing Facility

- Must have:
  - Shelter from sunlight for rabbits when temp is above 90°F
  - Artificial cooling by sprinkler or other means is required
  - Shelter from cold weather must be provided for rabbits when temp falls below 40°F
  - Shelter from rain or snow
  - Protection from predators
  - Proper drainage

Primary Enclosures

Definition

- Primary Enclosure:
  - Any structure or device used to restrict an animal to a limited amount of space.
  - For example:
    - Room
    - Pen
    - Run
    - Cage
    - Hutch

A primary enclosure is any structure or device used to restrict an animal to a limited amount of space. Examples of primary enclosures include a room, pen, run, cage or hutch.

Photo: D. Ausen, ISU

Minimum Requirements: Primary Enclosures

The following slides discuss the minimum requirements for all primary enclosures.

General Requirements for Each Species

Guinea Pigs & Hamsters
- Enclosures and racks, shelving and other accessories must be made of smooth material substantially impervious to liquids and moisture

Rabbits
- Primary enclosures must contain rabbits and keep predators out
- Enclosures must keep rabbits clean and dry
Flooring Requirements for Guinea Pigs, Hamsters, Rabbits

- Guinea Pigs & Hamsters
  - Enclosures with a solid floor must have clean bedding
  - Must protect all animals' feet and legs from injury

- Rabbits
  - Enclosures with a solid floor must have litter
  - For nursing females with litters less than one month of age, a suitable nest box with clean nest material must be provided
  - Must protect all animals' feet and legs from injury

Space Requirements: Guinea Pigs, Hamsters, Rabbits

- Primary enclosures shall be constructed and maintained to provide for space for each animal:
  - To make normal postural adjustments
  - To allow adequate freedom of movement

Space Requirements for Guinea Pigs and Hamsters

- For primary enclosures acquired after Aug. 15, 1990:
  - (Refer to AWA Regulations and Standards for primary enclosures acquired before the above date)

Primary enclosures must meet or surpass requirements set by the regulations for minimum space and exercise for the animals housed in them.

Space Requirements for Guinea Pigs (After Aug 15, 1990)

<table>
<thead>
<tr>
<th>Weight or Stage of Maturity</th>
<th>Space per Guinea Pig</th>
<th>Interior Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weaning to 350 grams</td>
<td>60 sq in</td>
<td>7 in</td>
</tr>
<tr>
<td>350 grams or more</td>
<td>101 sq in</td>
<td>7 in</td>
</tr>
<tr>
<td>Nursing females with litters</td>
<td>101 sq in</td>
<td>7 in</td>
</tr>
</tbody>
</table>

Nursing females with litters require 101 sq in of space per animal and an interior height of 7 inches to meet the minimum requirements set by the regulations.

Example:
- Harem breeding primary enclosure
- Floor space exceeds the minimum requirements for guinea pigs and females with litters
- Open enclosure has walls high enough to contain animals

Photo: D. Ausen, ISU
Space Requirements: Hamsters (After Aug 15, 1990)

<table>
<thead>
<tr>
<th>Weight or Stage of Maturity</th>
<th>Minimum Space per Hamster</th>
<th>Minimum Interior Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 60 grams</td>
<td>10 sq in</td>
<td>6 in</td>
</tr>
<tr>
<td>or 2.1 oz</td>
<td>64.52 sq cm</td>
<td>15.24 sq cm</td>
</tr>
<tr>
<td>60-80 grams</td>
<td>13 sq in</td>
<td>6 in</td>
</tr>
<tr>
<td>or 2.1-2.8 oz</td>
<td>83.88 sq cm</td>
<td>15.24 sq cm</td>
</tr>
<tr>
<td>80-100 grams</td>
<td>16 sq in</td>
<td>6 in</td>
</tr>
<tr>
<td>or 2.8-3.5 oz</td>
<td>103.23 sq cm</td>
<td>15.24 sq cm</td>
</tr>
<tr>
<td>&gt; 100 grams or &gt; 3.5 oz</td>
<td>19 sq in</td>
<td>6 in</td>
</tr>
<tr>
<td></td>
<td>122.59 sq cm</td>
<td>15.24 sq cm</td>
</tr>
</tbody>
</table>

Space Requirements: Nursing Female Hamsters (After Aug 15, 1990)

<table>
<thead>
<tr>
<th>Type of Hamster</th>
<th>Minimum Space per Litter (no other animals allowed in enclosure)</th>
<th>Minimum Interior Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamster</td>
<td>127 sq in</td>
<td>6 in</td>
</tr>
<tr>
<td>Dwarf Hamster</td>
<td>25 sq in</td>
<td>6 in</td>
</tr>
</tbody>
</table>

Space Requirements: Rabbits

- Minimum floor space in all of the following tables does not include the space taken up by food and water receptacles
- For primary enclosures acquired prior to Aug. 15, 1990, refer to AWA regulations and standards

Space Requirements: Rabbits (After Aug 15, 1990)

<table>
<thead>
<tr>
<th>Weight of Rabbit</th>
<th>Minimum Space per Rabbit by Weight</th>
<th>Minimum Interior Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2 - 4.4 lbs</td>
<td>1.5 sq ft</td>
<td>14 in</td>
</tr>
<tr>
<td>or &gt; 3 kg</td>
<td>14 sq in</td>
<td>35.56 cm</td>
</tr>
<tr>
<td>4.4 - 6 lbs</td>
<td>3 sq ft</td>
<td>14 in</td>
</tr>
<tr>
<td>or &gt; 2.4 kg</td>
<td>28 sq in</td>
<td>35.56 cm</td>
</tr>
<tr>
<td>6.1 - 11.2 lbs</td>
<td>4 sq ft</td>
<td>14 in</td>
</tr>
<tr>
<td>or 6.1 - 6.4 kg</td>
<td>37 sq in</td>
<td>35.56 cm</td>
</tr>
<tr>
<td>11.9 - 12 lbs</td>
<td>5 sq ft</td>
<td>14 in</td>
</tr>
<tr>
<td>or &gt; 5.4 kg</td>
<td>49 sq in</td>
<td>35.56 cm</td>
</tr>
</tbody>
</table>

Example of primary enclosure with adequate floor space and height for adult rabbits.

Photo: D. Ausen, ISU
Space Requirements:
Nursing Female Rabbits
(After Aug 15, 1990)

<table>
<thead>
<tr>
<th>Weight of Female</th>
<th>Space per Female/Litter</th>
<th>Minimum Interior Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 4.4 lbs</td>
<td>4 sq ft</td>
<td>14 in</td>
</tr>
<tr>
<td>&lt; 2 kg</td>
<td>37 sq meters</td>
<td>95.56 cm</td>
</tr>
<tr>
<td>4.4-8.8 lbs</td>
<td>5 sq ft</td>
<td>14 in</td>
</tr>
<tr>
<td>2-4 kg</td>
<td>46 sq meters</td>
<td>35.56 cm</td>
</tr>
<tr>
<td>8.8-11.9 lbs</td>
<td>6 sq ft</td>
<td>14 in</td>
</tr>
<tr>
<td>4-6.4 kg</td>
<td>56 sq meters</td>
<td>35.56 cm</td>
</tr>
<tr>
<td>&gt;11.9 lbs</td>
<td>7.5 sq ft</td>
<td>14 in</td>
</tr>
<tr>
<td>or &gt; 5.4 kg</td>
<td>70 sq meters</td>
<td>35.56 cm</td>
</tr>
</tbody>
</table>

Example of primary enclosure with adequate space for mother and babies as well as an appropriate nesting box with bedding materials.

Photo: D. Ausen, ISU

Innovative Primary Enclosures
- For guinea pigs, hamsters or rabbits
- Enclosures that do not precisely meet space requirements, but that do provide sufficient space and the opportunity to express species-typical behavior may be approved by:
  - Dealers and Exhibitors – Animal Care Administrator
  - Research Facilities – Institutional Animal Care and Use Committee

Conclusion
You should now be able, as appropriate for guinea pigs, hamsters or rabbits:
1. Define the different types of facilities (indoor, outdoor)
2. Describe the general structural and maintenance requirements for all facilities
3. Define and describe Primary Enclosures suitable for each species
4. Describe maintenance, climate, other requirements for primary enclosures

Questions?
Acknowledgments
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