

Hoof Health and Housing Conditions - a Never Ending Story?!



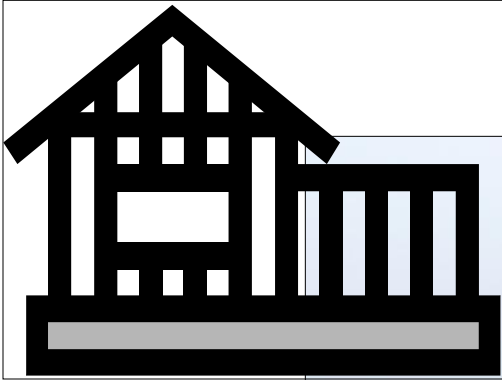
Praxisgemeinschaft für
Klauengesundheit

Dr.med.vet. Fiedler, Kröger, Schindhelm





Housing Conditions



Building



Flooring

Bedding



Crowding

Feeding



Housing Conditions



Building

Bedding



Crowding



Flooring

Feeding



Housing Conditions



Building

Bedding



Crowding



Flooring

Feeding



Housing Conditions

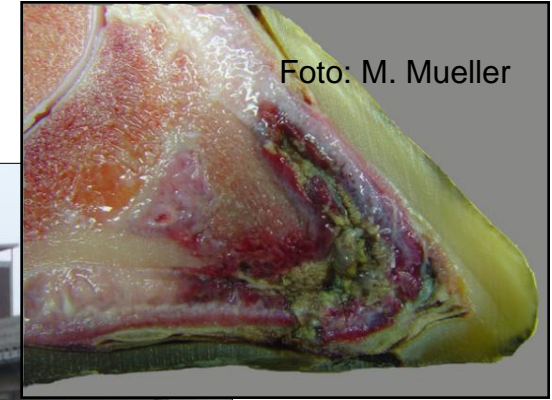


Building

Bedding



Crowding



Flooring

Feeding



Housing Conditions



Building

Bedding



Crowding

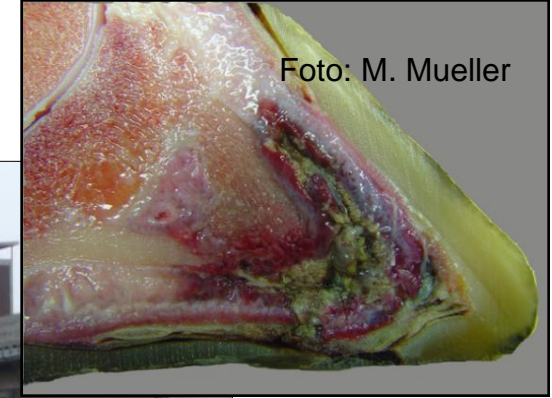


Foto: M. Mueller

Flooring

Feeding



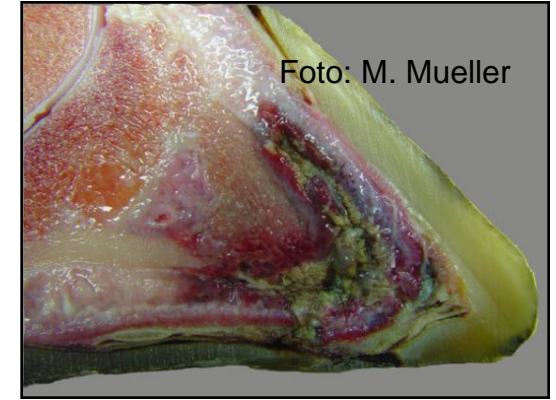
Housing conditions



Building



Crowding



Flooring

Bedding



Feeding



Requirements Specification

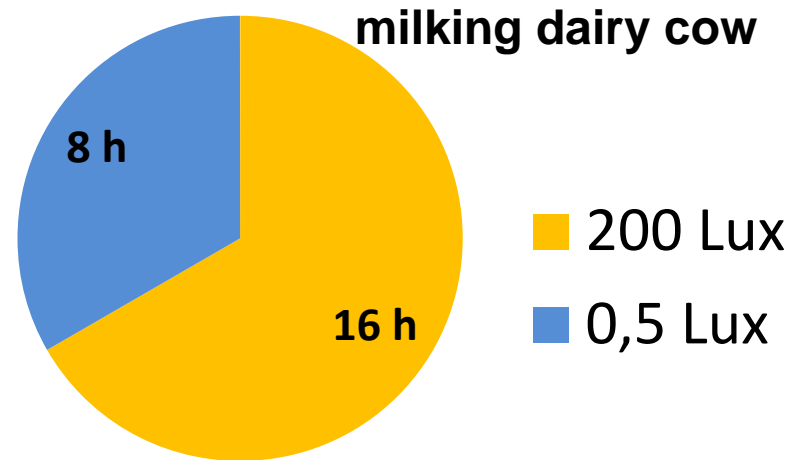
- 1. Building**
- 2. Alleyways**
- 3. Bedding**
- 4. Water supply**
- 5. Young Stock / Heifers**
- 6. Feeding**
- 7. ...**



Requirements Specification

1. Building

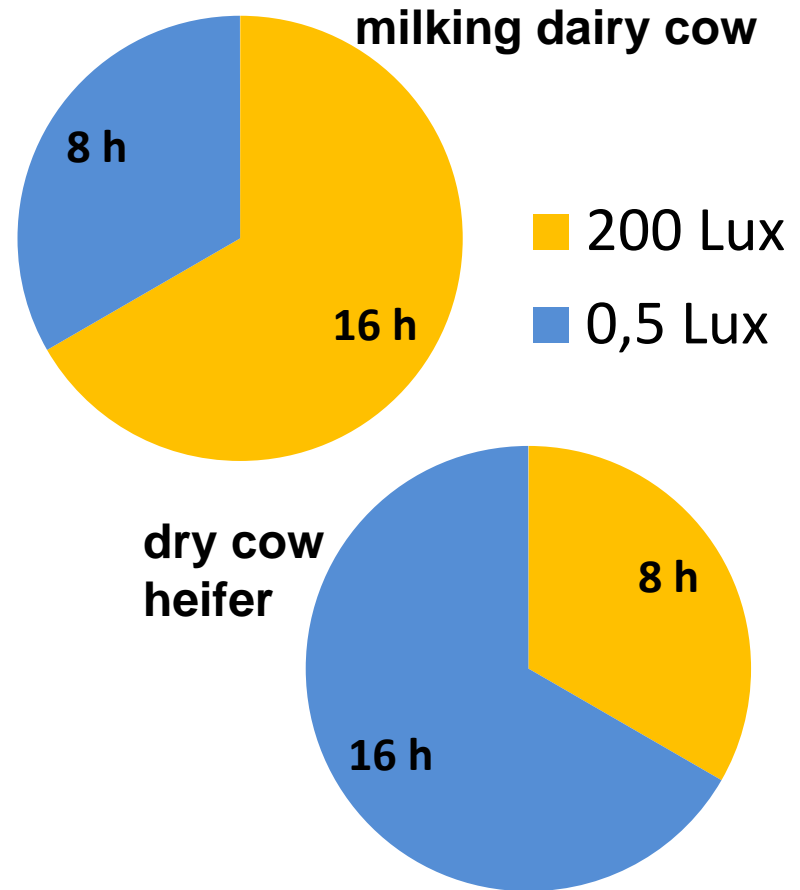
➤ Lighting



Requirements Specification

1. Building

➤ Lighting



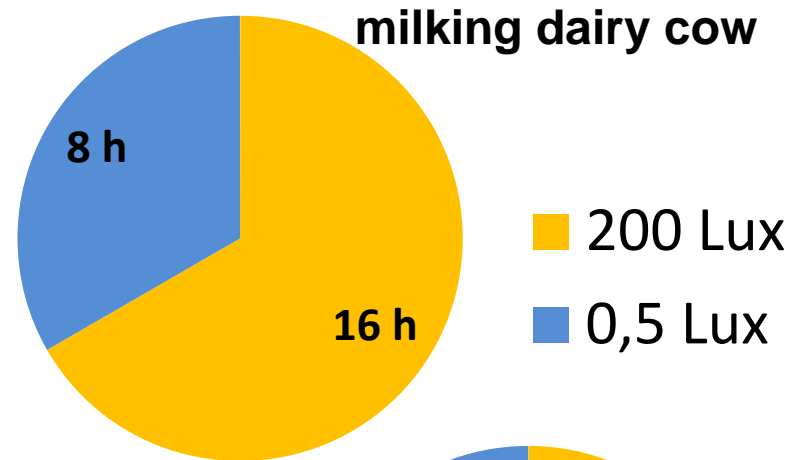
Barash et al, 2001



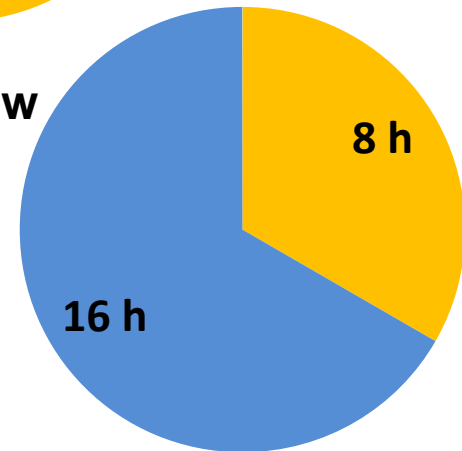
Requirements Specification

1. Building

➤ Lighting



dry cow
heifer



influences of photoperiod on

- reproduction

- milk yield (Dahl et al., 2012; Mikolayunas et al., 2008)

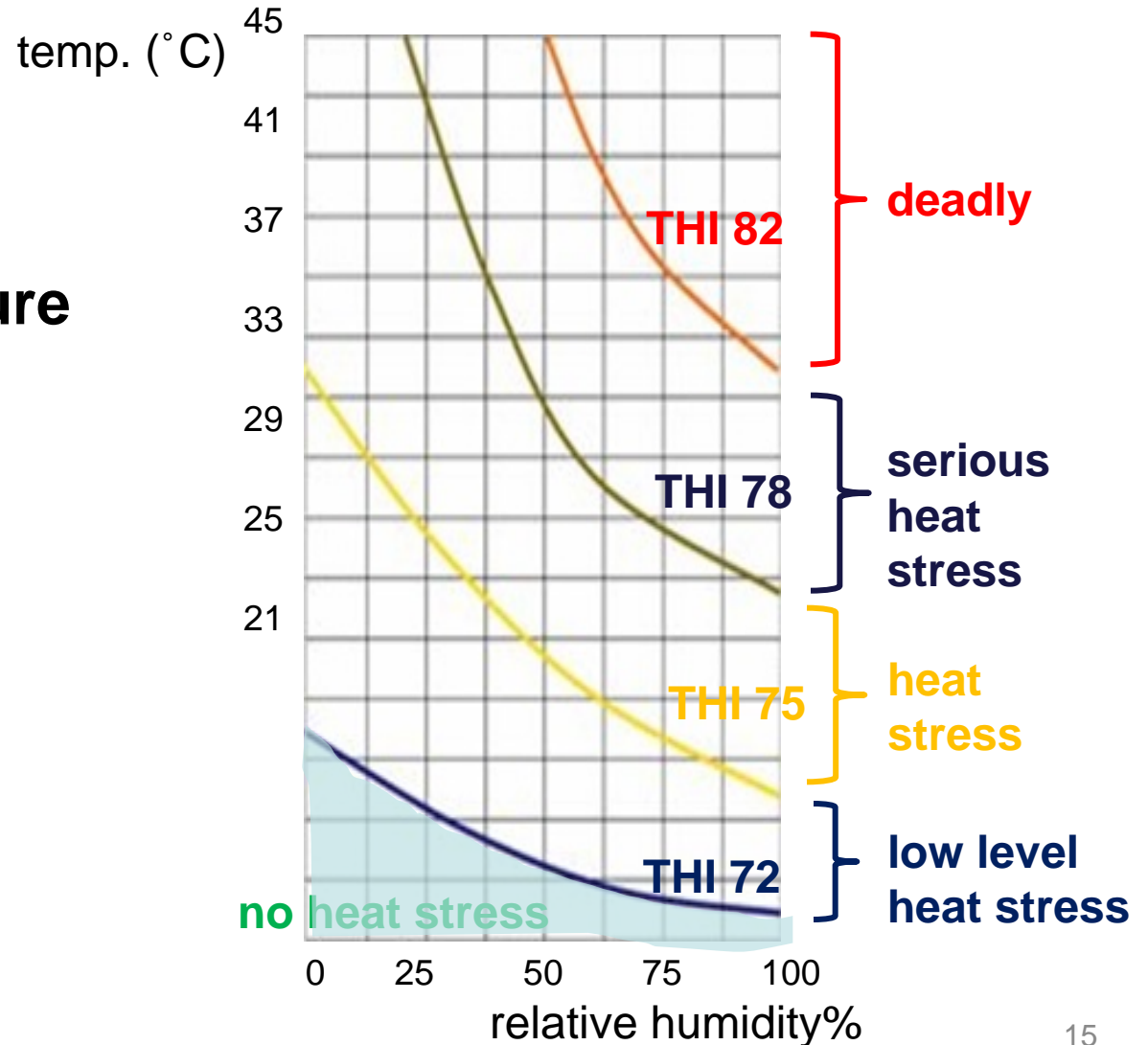


Requirements Specification

1. Building

➤ Temperature

➤ Humidity

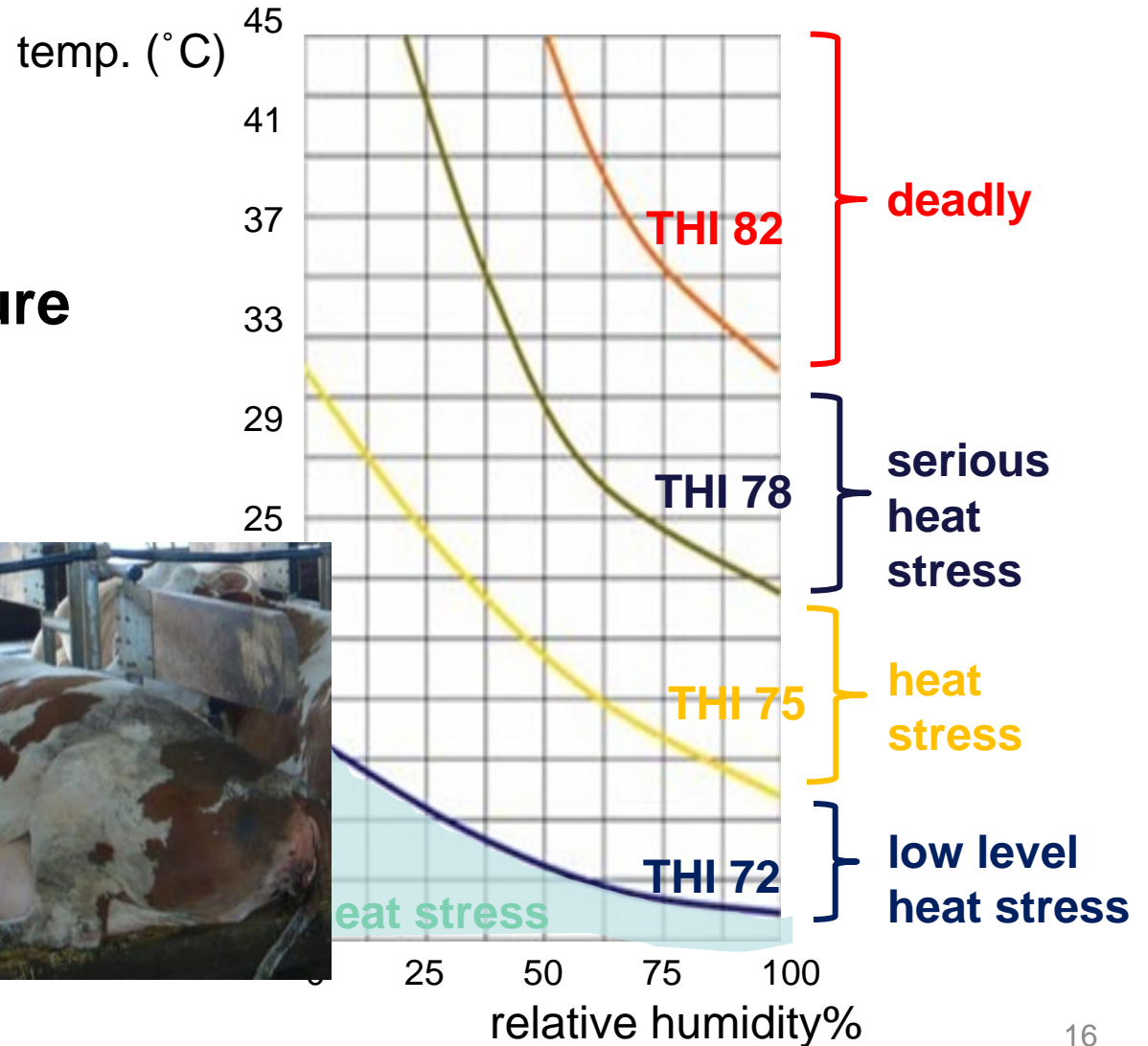


Requirements Specification

1. Building

➤ Temperature

➤ Humidity



Heat Stress

6 to 8 weeks later



White Line Fissure



Double Sole



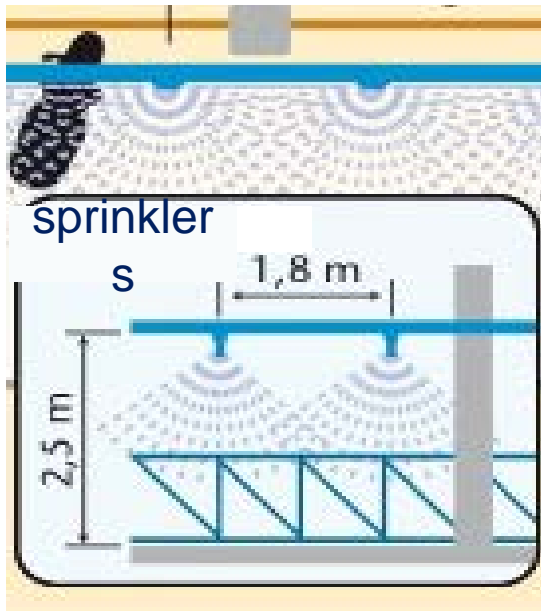
Digital Dermatitis
Sole hemorrhage



Requirements Specification

1. Building

- Temperature
- Humidity



air velocity
0.3 m / sec to 0.6 m / sec

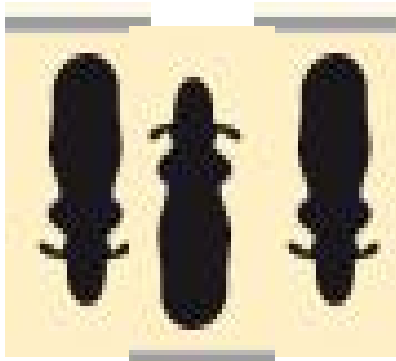


Requirements Specification

1. Building

2. Alleyways

➤ dimensions



alley: minimum three cows

cubicle alley: 3.0 – 3.6 m

feed alley: 4.6 – 5.2 m

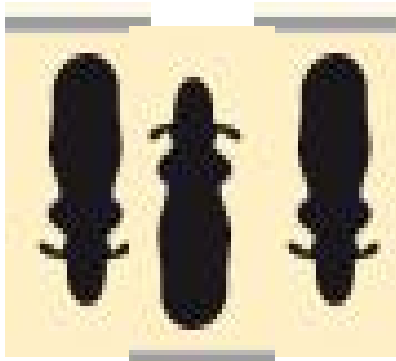


Requirements Specification

1. Building

2. Alleyways

➤ dimensions



alley: minimum three cows

cubicle alley: 3.0 – 3.6 m

feed alley: 4.6 – 5.2 m



passages:
12- 14 stalls



Requirements Specification

1. Building

2. Alleyways

➤ dimensions

➤ **flooring**

➤ **skid resistance**

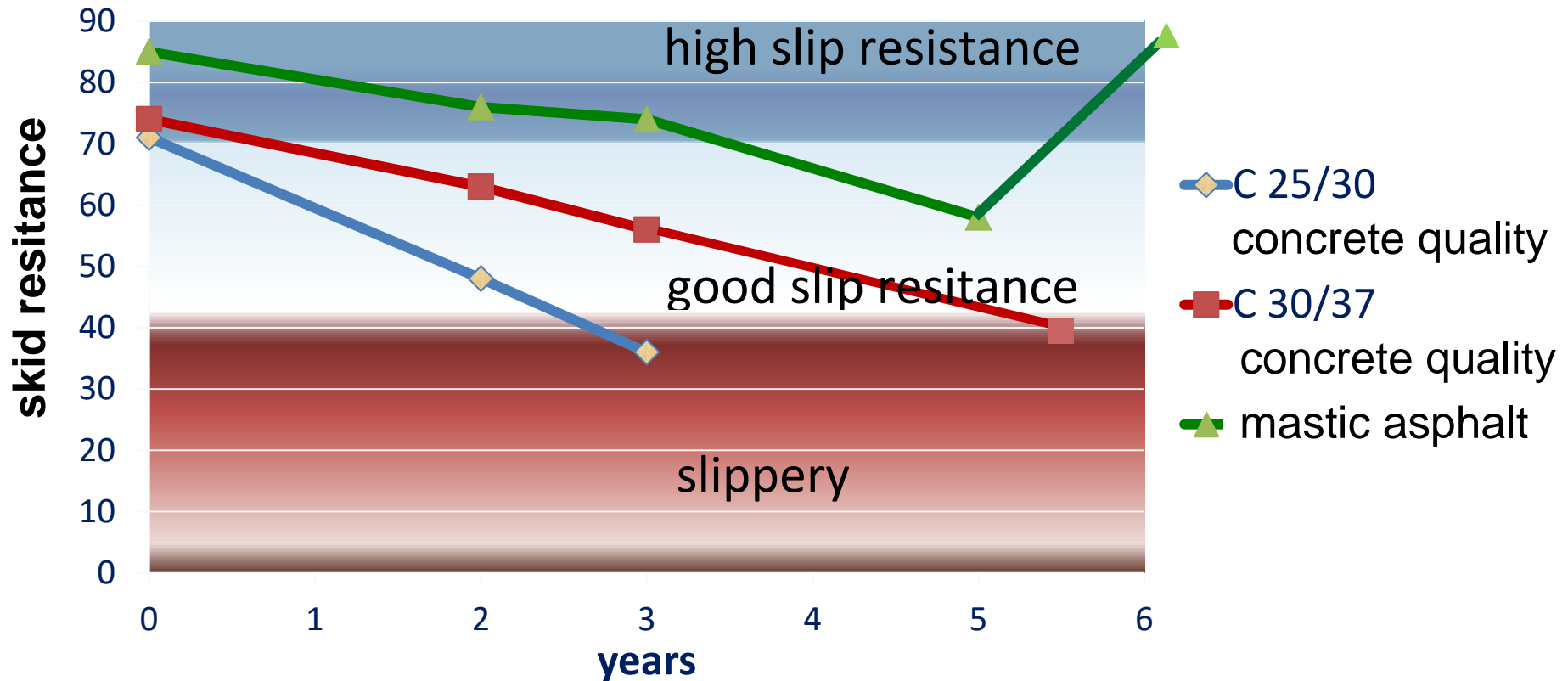
➤ **abrasion**

➤ **long durability**



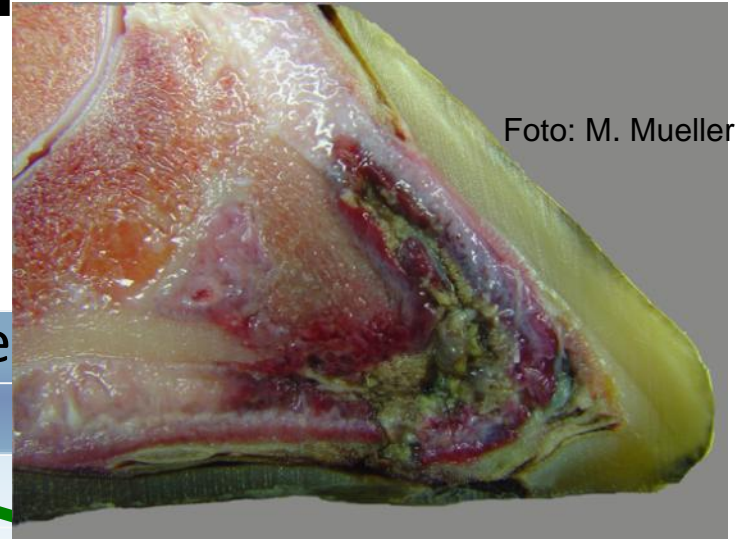
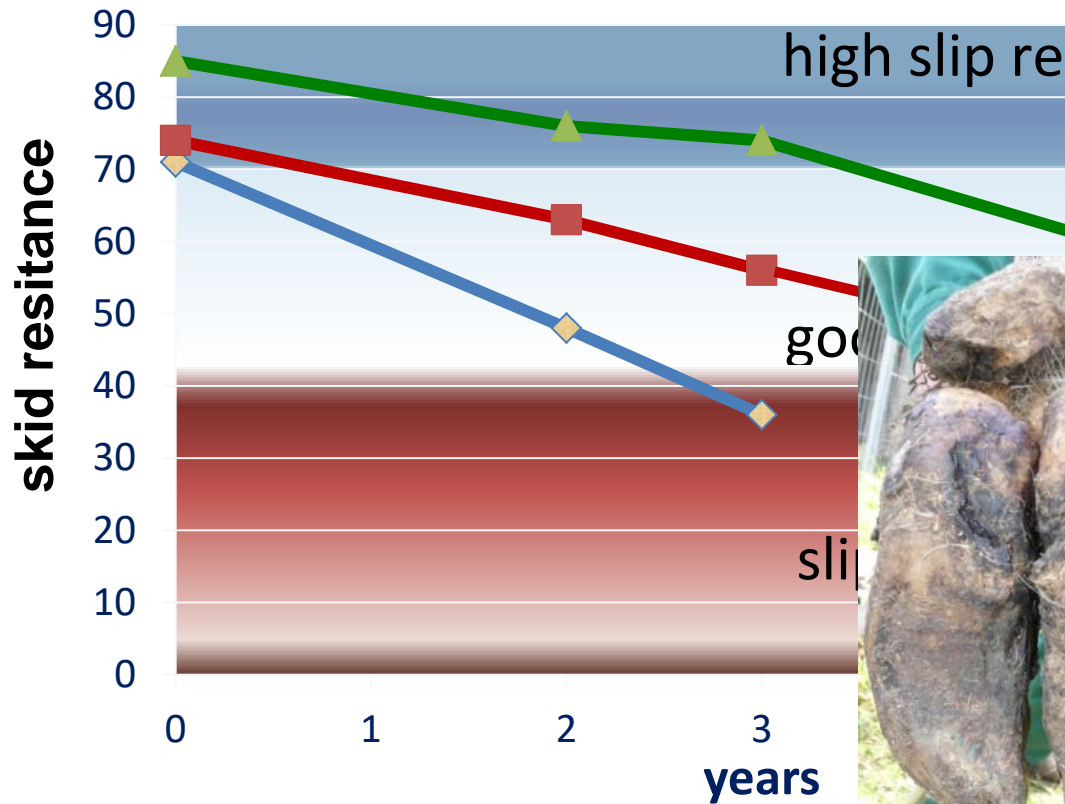
Requirements Specification

Aging of Flooring



Requirements Specification

Aging of Flooring







Requirements Specification

1. Building

2. Alleyways

- dimensions
- flooring
- hygiene



Requirements Specification

1. Building

2. Alleyways

- dimensions
- flooring
- hygiene



Requirements Specification

1. Building

2. Alleyways

- dimensions
- flooring
- hygiene



Requirements Specification

1. Building

2. Alleyways

- dimensions
- flooring
- hygiene







**Footbath:
yes**





Footbath:

no



Requirements Specification

1. Building
2. Alleyways
- 3. Bedding**



Requirements Specification

1. Building
2. Alleyways
3. **Bedding**

➤ type

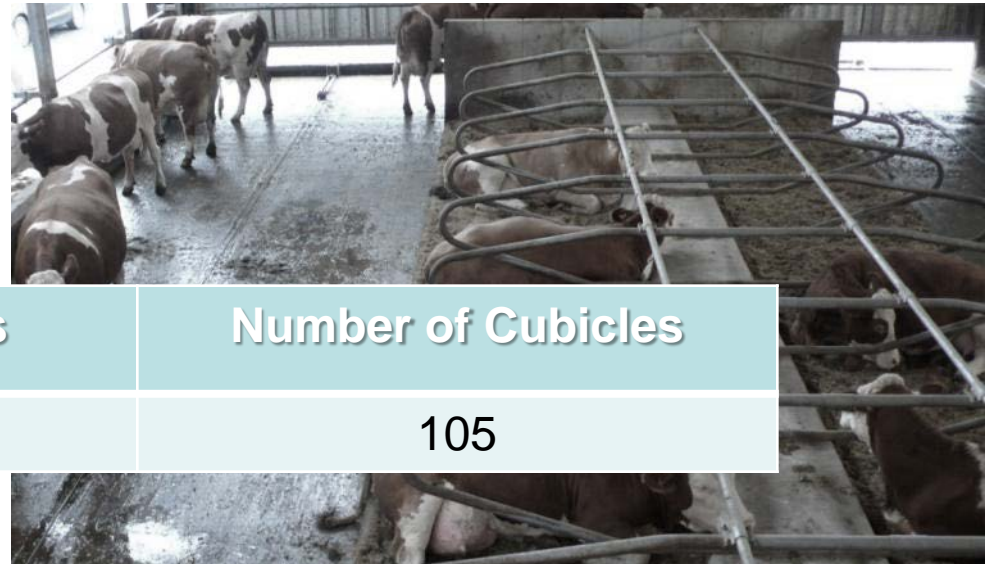


Requirements Specification

1. Building
2. Alleyways
3. **Bedding**

➤ **type**

➤ **number**



Number of Cows	Number of Cubicles
100	105



Requirements Specification



Requirements Specification

1. Building
2. Alleyways
- 3. Bedding**
 - type
 - number
 - dimensions



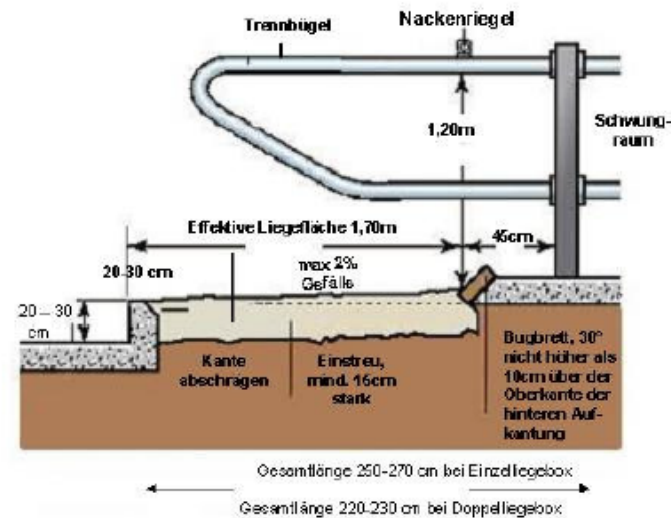
Requirements Specification

1. Building
2. Alleyways
3. **Bedding**

➤ **type**

➤ **number**

➤ **dimensions**



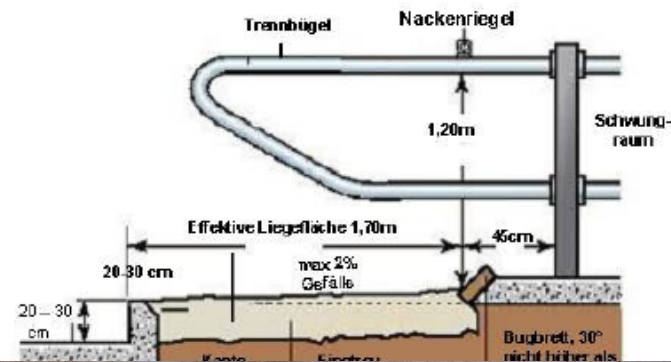
(Schönmuth and Löber, 2006)



Requirements Specification

1. Building
2. Alleyways
3. **Bedding**

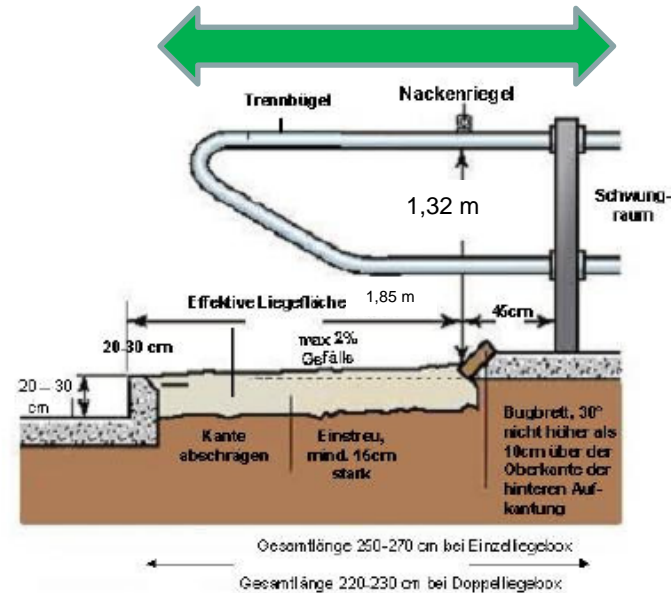
- type
- number
- dimensions



Requirements Specification

1. Building
2. Alleyways
3. **Bedding**

- **type**
- **number**
- **dimensions**



Requirements Specification

1. Building
2. Alleyways
3. **Bedding**

- **type**
- **number**
- **dimensions**
- **hygiene and bedding material**



Requirements Specification

1. Building
2. Alleyways
- 3. Bedding**

- **type**
- **number**
- **dimensions**
- **hygiene and bedding material**



Requirements Specification

1. Building
2. Alleyways
- 3. Bedding**

- **type**
- **number**
- **dimensions**
- **hygiene and bedding material**



Requirements Specification

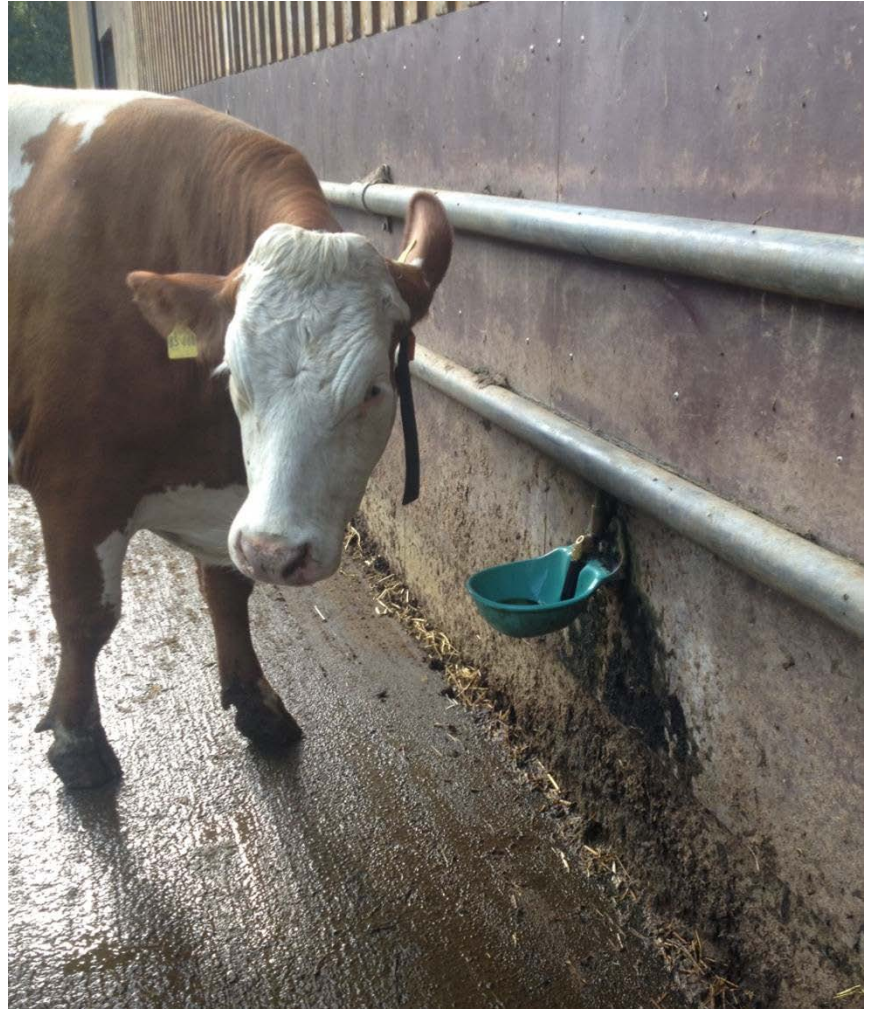
1. Building
2. Alleyways
- 3. Bedding**

- **type**
- **number**
- **dimensions**
- **hygiene and bedding material**



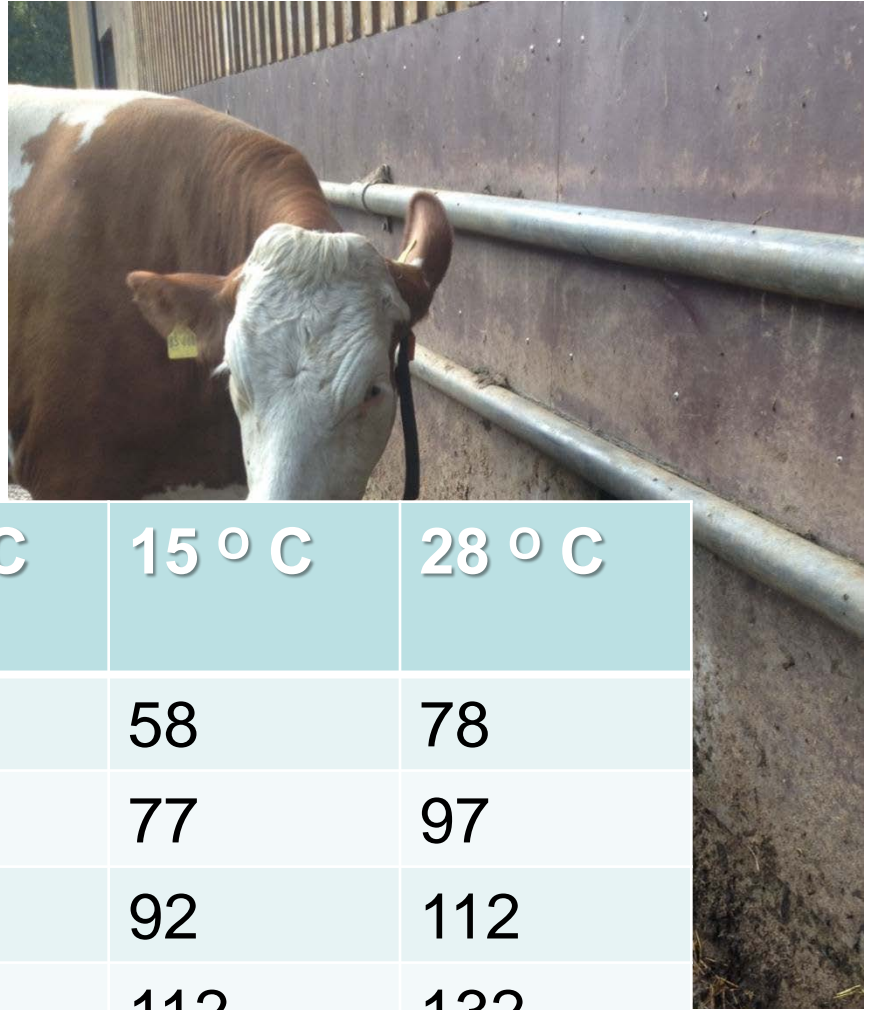
Requirements Specification

1. Building
2. Alleyways
3. Bedding
4. **Water Supply**



Requirements Specification

1. Building
2. Alleyways
3. Bedding



4. Water

Temp.	5 ° C	15 ° C	28 ° C
Milk Yield			
dry	43	58	78
15 l / day	62	77	97
30 l / day	76	92	112
45 l / day	96	112	132

Beede, 1992; Meyer et al., 2002







Requirements Specification

1. Building
2. Alleyways
3. Bedding
4. Water Supply
- 5. Young Stock**



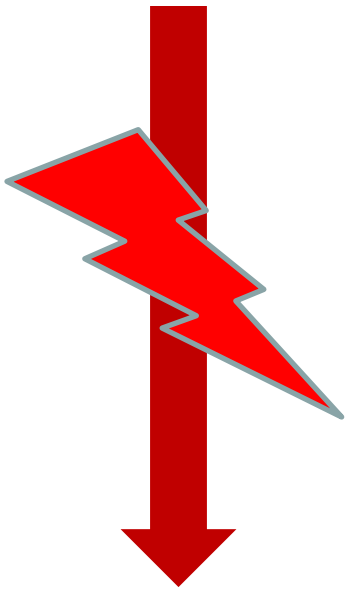
Requirements Specification

5. Young Stock / Heifers

- hygiene during delivery
- dry and clean calf hutches
- comfortable pens



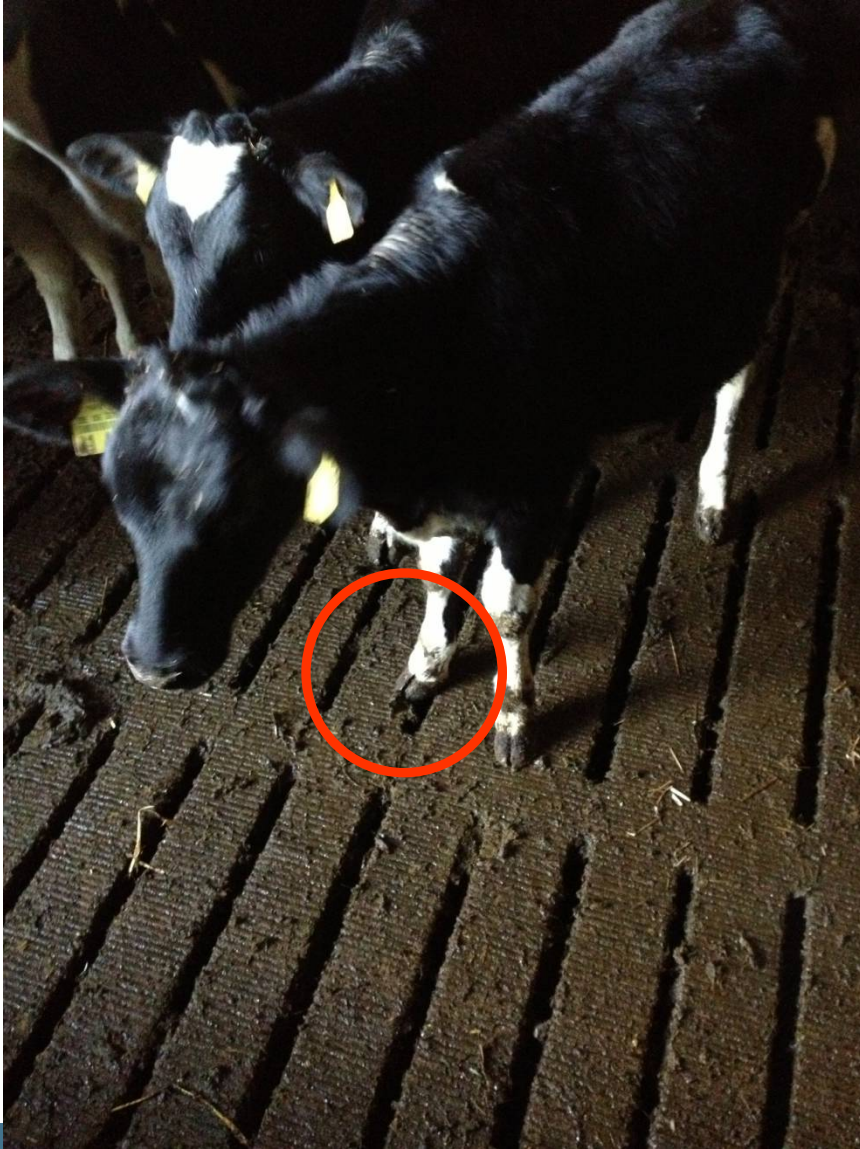
COWS



heifers







Requirements Specification

5. Young Stock / Heifers

- hygiene during delivery
- dry and clean calf hutches
- comfortable pens
- ad libitum milk intake

(Jasper and Weaver, 2002)



Requirements Specification

5. Young Stock / Heifers

- hygiene during delivery
- dry and clean calf hutches
- comfortable pens
- ad libitum milk intake
- calculated rations
- supplement of trace minerals (Gomez et al. 2014)





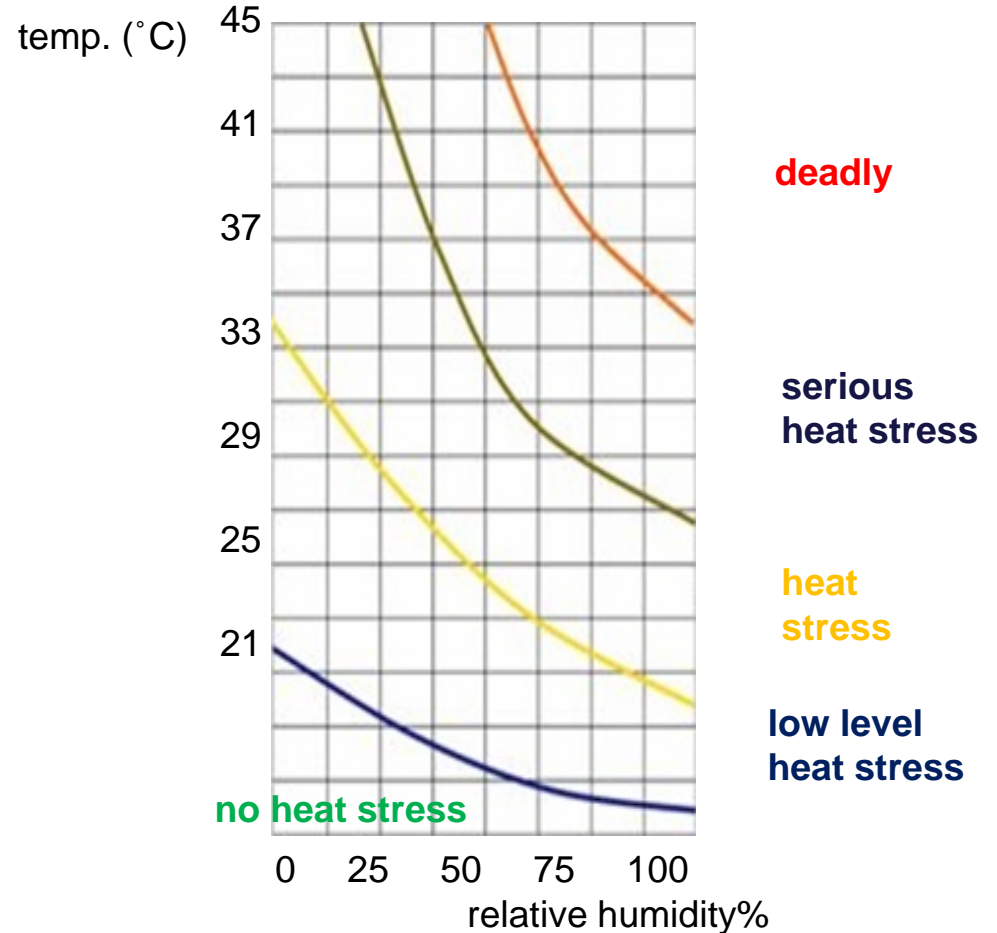


Take Away Messages



Take Away Messages

1. Building



Take Away Messages

1. Building
2. Flooring



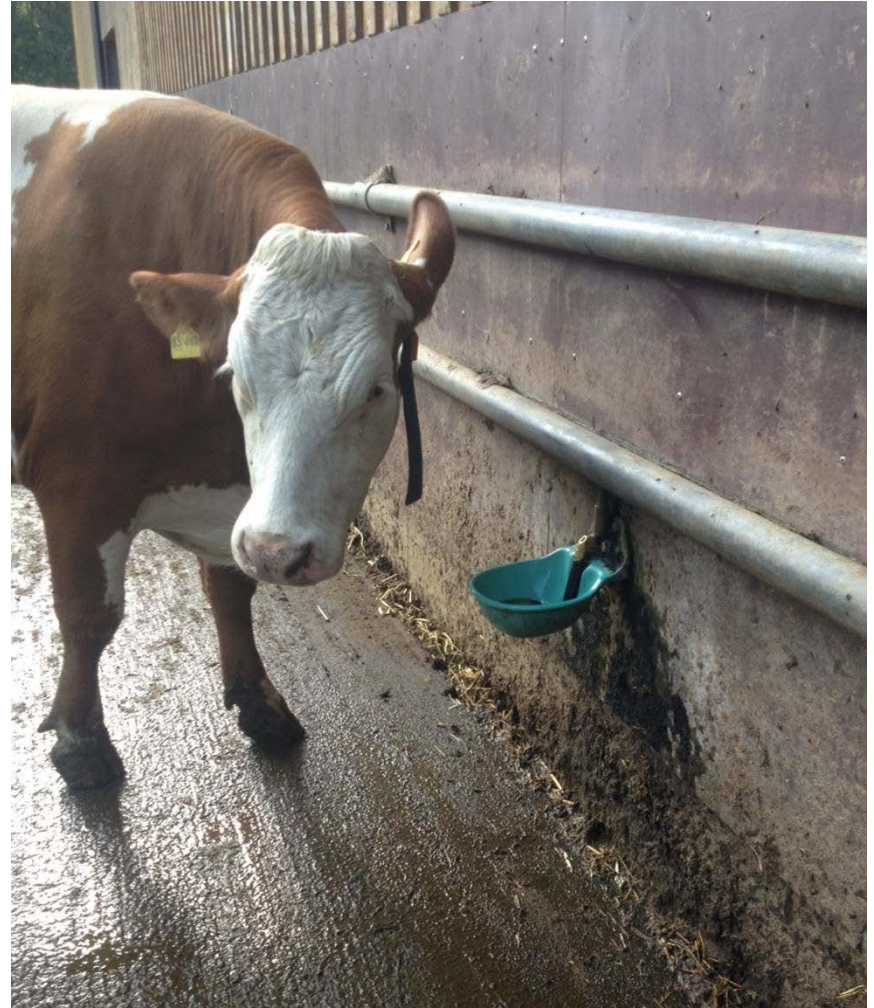
Take Away Messages

1. Building
2. Flooring
3. Bedding



Take Away Messages

1. Building
2. Flooring
3. Bedding
4. Water supply



Take Away Messages

1. Building
2. Flooring
3. Bedding
4. Water supply
5. Young stock



Take Away Messages

1. Building
2. Flooring
3. Bedding
4. Water supply
5. Young stock
6. Feeding
7. Hoof Trimming
8. ...





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