



QUESTIONNAIRE 1 "Cow Cooling Solutions"

GENERAL INFORMATION: please insert an **X** in applicable boxes

- Farm location (country, region)
.....
- Cows breed (s)
- Number of milking cows Replacement heifers
- Type of management grazing confinement
- Average per cow average annual milk production liters

SPECIFIC INFORMATION - related to summer conditions and effect on the cows:

1. Days of "real summer" per year (stressful symptoms by the cows)

2. Symptoms observed on cows in the summer:

- 2.1 Increased breathing frequency YES NO
- 2.2 Reduced general activity YES NO
- 2.3 Cows stop/reduce ruminating YES NO
- 2.4 Cows tend to be crowded YES NO
- 2.5 Cows reduce their consumption YES NO
If YES, what is the rate of decline %
- 2.6 Cows increase water consumption YES NO
If YES, what is the rate of increase %
- 2.7 Decrease in daily milk production per cow YES NO
If YES, what is the rate of decrease %

2.8 Decrease in milk fat content YES NO

2.9 Decrease in conception rate of milking cows YES NO

If YES, give summer (..... %) and winter (..... %) percentages for

Replacement heifers.....

F/C heifers.....

Adult cows.....

3. Cooling cows in the summer YES NO

4. In the event of cooling the cows, please describe how and where:

- Holding pen YES NO

- Feed line YES NO

- Rest area YES NO

- Other area/s

5. MILKING DATA:

- Number of milking groups

- Size of the largest milking group

- Milk sessions per day

- Hours of starting each milking session

- Duration of each milking session (hours).....

- washing cows' udders before milking YES NO

- Waiting yard data (in square meters)

- Length.....width.....height.....

- Is waiting yard shaded YES NO

If YES, with what material?

- What is the largest distance your cows must walk for being milked (in meters)?

.....

6. FEEDING DATA (related to milking cows):

- Do you feed TMR ? YES NO

- Times per day feed is distribute to the cows in the summer

- Rate of decline in daily DM consumption per cow in the summer (%)......

7. HOUSING DATA:

- Housing type (Free stall/ loose stall /tie stall)?

- Roof height? (lowhigh)
- Barn orientation (South/ North, East / West, other) ?
- Water troughs in the milking cattle barn:
 - Number of troughs
 - Availability per cow (cm/cow)
 - Depth of troughs (cm)
- Is your feed line shaded? YES NO
- Is the feed line with or without “lockers”?

8. SUMMER CONDITIONS

- Temperatures °C (min.... / max ...)
- Relative humidity, % (min / max).

9. COOLING MEANS:

9-1 – Cooling in the waiting yard:

- Wetting the cows from above in the waiting yard YES NO
- Using fans in the waiting yard YES NO

If YES :

Number of fans

Diameter of fans (cm)

Distance between fans (meters) in row in line

- Wind velocity inside the yard (meters/seconds)
- In the event cows are cooled in the waiting yard by combining wetting & forced ventilation, what is the duration of the each:
 - Wetting session (Seconds)
 - Ventilation session (minutes).....
- In case cows are cooled in the waiting yard, is it only before milking or also between milking sessions

If between milking - times per day, duration of treatment

9-2 – Cooling in the feed line:

- Wetting in feed line YES NO
- Fans in feed line YES NO

If YES, :

Number of fans per line

Fans diameter (cm)

Distance between fans (meters)

- Wind velocity (m/sec)
- In cows are cooled in the feed line by combining wetting and forced ventilation, what is the duration of the wetting session (Seconds) Ventilation session (continue of minutes)
- In cows are cooled in the feed line between milking sessions, how many times per day.....
- If cooling cows in the feed line, what is the duration of the cooling period? (min)

9- 3 – Cooling in the rest area:

- Do you have fans in the rest area? YES NO

If YES :

- Number of fans
- Diameter of fans
- Distance between fans (in row and in line)

10 - Prices (in US\$) –

- Cost of 1 kg DM of milking cows ration
- Farm Gate milk price
- Cost of 1 KW electric power.....
- Day salary of a "non professional" worker.....