Supplementary material for the publication: Extending Cow Lifespan in Dutch Dairy Farming: Farm Characteristics, Management Practices, and Behavioral Determinants**.**

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DOI: https://doi.org/10.18174/703519

Appendix III

In depth interview for farmers in high / low lifespan class

1. **Introduction** can you tell a bit about the farm and its management, why you became a farmer and what your most important goals are (with reflection on survey answers to the goals)
2. **About increasing lifespan**
    a. Do you feel that cows on your farm have a relatively long / short lifespan?
    b. What enables you to have older cows? / What do you feel is the reason for the lower lifespan on your farm?
    c. Did you invest in anything to increase the lifespan of your cows?

d. Did you receive help from other parties (e.g. farm advisor) to increase the lifespan of your cows?

3. **Attitudes and beliefs**

a. How important is increasing cow lifespan in comparison with other sustainability themes? (with reflection on survey answers regarding the value of these themes)

b. What is your personal motivation to increase the lifespan of cows? / Would you want to increase the lifespan of cows on your farm?

c. What do you see as the most important positive consequences of increased lifespan of cows?

d. What do you see as the most important negative consequences of increased lifespan of cows?

e. Do you intend to increase the lifespan of your cows further? / Do you intend to increase the lifespan of your cows?

f. If you had a large sum of money to invest in increasing the lifespan of your cows, what would you spend this on?

4. **Social and physical context**

a. What are the largest obstacles on your farm to increase the lifespan of your cows?

b. To what extent do external stimuli affect your motivation to increase the lifespan of your cows?

c. Is lifespan of cows a topic of conversation with farm advisers? If not, why not?

d. Is lifespan of cows a topic of conversation with others in your circle? With whom/ why not?

5. **Knowledge**

a. Do you feel you have enough knowledge to increase the lifespan of your cows. Why/ why not, and which knowledge?

b. Do you actively seek information regarding increasing the lifespan of cows?

c. What would be an attractive way for you to increase knowledge about increasing lifespan of cows?

d. If you have questions regarding increasing the lifespan of cows, who would you ask them to? Why?

6. Critical success factors

a. There are many farms where cows have a shorter / longer lifespan than on your farm. How do you feel about this, and what do you think could be causes for this difference?

b. What advice would you have for other farmers that aim to increase the lifespan of their cows? / no extra question for the short lifespan farms

Appendix IV

Thematic overview of checklist used for 10 farm visits after in-depth interviews on extending the lifespan of dairy cows.

FARM INFORMATION

Visit Information

Date, names, and details of participants

Consent form

Farm Information

Dairy processor, feed supplier, veterinarian, and other farm visitors

Milking system and production level

Grazing details

Use of technical tools

Animals and Replacement

Animal numbers and stocking density

Animal behavior and general condition

Replacement rate and replacement by animal group

Culling and purchasing policy, and main reasons for culling

YOUNG STOCK

Birth

Calving, calving procedures, and protocols

Housing and animal contact

Barn hygiene and disinfection

Feed and water supply

Colostrum management

- Dam: colostrum production and quality
- Calf: colostrum feeding and management

Calves < 14 days old

Management, care, and procedures

Animal health and hygiene

Barn, housing, and ventilation

Milk feeding after colostrum period

Forage and water provision

Calves from 14 days to 2 years old

Management, care, and procedures

Animal welfare and health

Barn, housing, and ventilation

Hygiene of barn, bedding, and animals

Milk feeding and weaning process

Feeding, roughage, and water provision

Growth and insemination

DRY COWS

Management

Animal care, protocols, and dry period length

Production level at drying off, and dry off methods used

Udder health and general health

Housing and Feeding

Housing, facilities, and ventilation

Hygiene of barn, bedding, and animals

Feeding procedures, diet composition, feed components and concentrates

Dry-off procedures

Protocols and hygiene

Facilities and materials

Antibiotic use, dry period success, somatic cell count, and mastitis

LACTATING COWS

Housing and Care

Barn type, stocking density (feeding and lying spaces), and ventilation

Dimensions of lying area and bedding type

Hygiene of lying areas, slatted floors, and cows

Feeding

Feeding procedures, diet composition and feed quality

Feed fence, concentrate boxes, and pasture access

Drinking water availability and water quality

Body condition and rumen fill

Fertility

Insemination policy and procedures

Heat detection and use of technology

Conception rate and pregnancy rate of cows

Animal Health

Disease incidence, antibiotic use, and reasons for culling

Udder health and somatic cell count

Transition diseases and other health issues

Claw Health

Comfort of bedding and quality/type of walkways

Claw health management and record-keeping

Preventive treatments and hoof trimming

Claw conditions and hoof quality

Risk Factors and Infection Pressure

Disease and Health Status, and Participation in Monitoring Programs

Vaccinations and Other Preventive Measures

Animal movements, pasture access, and contact with other animals

Movement patterns, farm clothing, use of equipment, and visitors

Manure management and other environmental factors