

**Overview on sustainability related traits / indicators**

(16th Feb 2022)

**A. Impact Scale 1-5 (1, Very little, 2 Some, 3 Moderate, 4 High, 5 Very High)**

**B. Ease of implementation 1-5 (1 Very Difficult, 2, Difficult, 3 Moderate, 4 Somewhat easy, 5 Very easy)**

	Global Environmental issues per kg milk	Local Environmental issues per ha	Animal Health and Welfare	Socio-economic performance of the farm	IMPACT	EASE
<b>Production - (Milk)</b>						
Rolling Herd Average Energy Corrected Milk (i.e. milk, fat and protein) AVG	4,3	3,8	2,8	4,0	15,0	3,7
Age at first calving (calf and heifer raising) AVG	3,2	2,8	2,4	3,4	11,8	3,8
Annual average Days in Milk (long days in milk are typically not very good economically) – see also Reproduction/Calving AVG	2,7	2,7	2,2	3,2	10,7	4,2
MUN /Urea rates in milk (High MUN rates points at overfeeding energy (protein) more N in manure) – herd level – see also Metabolism AVG	3,7	4,0	3,2	3,2	14,1	3,8
Average Lactation Number (herd) AVG	3,7	3,5	4,2	4,0	15,4	3,8
<b>Production – Beef (to be done later)</b>						
Daily gain AVG	2,7	3,5	3,0	4,3	13,4	2,3
Age at slaughter AVG	2,7	3,3	2,8	3,3	11,9	3,7
<b>Stillbirth and mortality / raising losses</b>						
% of calves born dead (or died within 24 hours) AVG	2,2	2,2	4,6	4,2	13,1	3,6
% of mortality (mortality rates) in young stock till 6 months (excluding stillbirth) AVG	2,5	2,5	4,6	4,4	14,0	3,5
% of mortality (mortality rates) in young animals between 6 months and calving (females) AVG	3,0	2,8	4,6	4,4	14,8	3,6
% of calves with diarrhoea AVG	2,0	1,8	4,2	3,2	11,2	2,0
% of calves with respiratory diseases AVG	2,0	1,8	4,2	3,4	11,4	2,3
<b>Reproduction / calving:</b>						
Pregnancy rate (Low pregnancy rates can indicate poor reproduction program) - Non-Return-Rate 56? AVG	2,7	2,3	3,2	3,6	11,8	2,8
Pregnancy Loss Rate (High loss rates can point at various management factor, health, environment, etc.) AVG	2,5	2,2	3,4	3,6	11,7	2,6
Days Open (Long days open are not desirable) AVG	2,6	2,2	2,3	3,3	10,3	2,8
% of cows with fertility disorders, silent heat, cysts, metritis, rep ..) AVG	2,5	2,2	4,0	3,8	12,5	1,8
% of cows culled related to reproductive problems AVG	2,8	2,5	3,8	4,0	13,1	2,6
<b>Udder health</b>						
Weighted Somatic Cell Count (high SCC can point at Udder health problems) AVG	2,8	2,7	3,4	3,2	12,1	3,6
% Chronic infection rate (% with cows with a SCC twice above a certain level e.g. 200.000) AVG	2,8	2,7	3,4	3,4	12,3	3,4
Fresh Cow Infection Rate (Indicated either poor dry cow management of heifer management) above 200.000 at first test day AVG	2,8	2,4	3,4	3,2	11,8	3,5
Dry Cow Cure Rate (Poor cure rates points at poor dry cow program) (last test day above 200.000 and come back below 200.000) (information on selective versus blanket dry treatment information is valuable) AVG	3,0	2,6	3,4	3,2	12,2	3,3
% Cows on Selective Dry Cow Therapy AVG	3,2	2,8	3,0	3,2	12,2	2,3
% of cows with at least one mastitis case within lactation AVG	3,0	2,7	3,6	3,8	13,1	3,0
% of cows culled because of udder health AVG	3,0	2,7	3,6	3,8	13,1	3,0
<b>Metabolic diseases</b>						
Fat-Protein- Ratio first test day (/1- 50/100 days) in lactation <1 and >1,3/1,5 AVG	2,0	1,6	3,0	3,0	9,6	3,6
% of cows with subclinical metabolic issue (ketosis, acidosis, DA's etc (BHB, MIR,...) AVG	2,7	2,3	4,0	4,0	13,0	2,4
<b>Claw health and lameness</b>						
% of lame cows, AVG	2,8	2,7	4,6	4,0	14,1	2,2
% of cows culled because of lameness/claw health reasons AVG	3,2	2,8	4,4	4,0	14,4	3,0
% Cows culled due to other disorders/diseases (Pneumonia, Scour , etc) AVG	2,7	2,5	4,4	3,8	13,4	2,2
% Cows died < 60 - 100 days in milk AVG	3,8	3,8	4,8	4,8	17,3	3,2
<b>Welfare – additional to the already mentioned health related traits (health, BCS, lameness, claw health)??? Objective measures here??</b>						
BCS	2,0	2,0	3,5	3,0	10,5	2,0
<b>Genetics:</b>						
Cow EBV worth e.g NM\$ In US we use NM\$ to measure genetic progress, Higher NM\$ cows would point at genetically superior animals) -including Genomics AVG	3,4	3,2	2,6	2,6	11,8	3,0
Sire EBV worth NM\$ AVG	3,4	3,2	2,6	2,6	11,8	3,5
any genetic/genomic index (NM\$, TPI, LPI, Pro\$, or other national indexes worldwide) for all animals in herd including new born (based on GPA)- -including Genomics AVG	4,0	4,0	3,3	3,0	14,3	2,7
<b>Efficiency:</b>						
MJ ME (NEL) feed intake per kg ECM (either on herd level or on cow-level for approx. day 100 in lactation, i.e. when the cow probably does not yet builds up body mass but also does not mobilise body reserves) AVG	4,8	4,7	2,2	4,2	15,9	1,2
Residual feed intake AVG	5,0	4,8	2,3	4,8	16,8	1,2
Feed efficiency / country specific measures - objective measures AVG	4,5	4,5	2,0	4,5	15,5	1,5
Using milk MIR predictions of Methane Emissions and Energy Balance, DMI, etc (EB is also of course part of Transition); predictions based on sensors AVG	4,0	3,7	2,4	2,4	12,5	2,8
<b>Body weight (to predict maintenance) Christa</b>	3	3	3	3		2