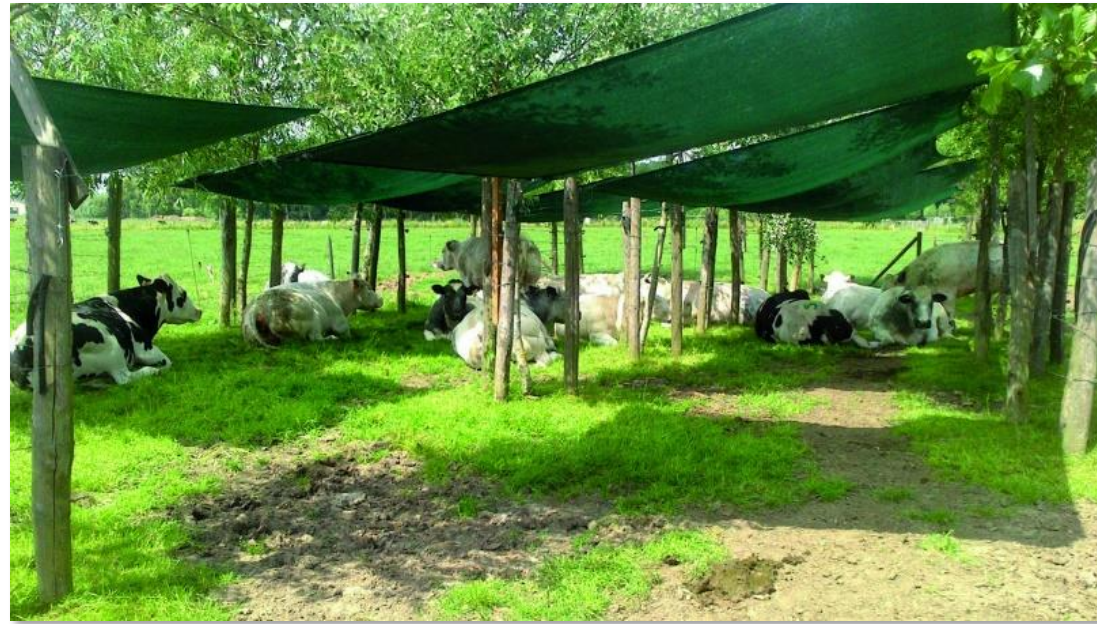


CATTLE WELFARE SELF-ASSESSMENT & BENCHMARKING TOOL FOR FARMERS VIA MOBILE APPLICATION



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INTRODUCTION



✓ **Monitoring animal welfare**

- Valuable for farmers and **their animals**
 - to identify cattle welfare problems requiring attention
 - to evaluate effects of farm management modifications over time

✓ **Self-scans** to assess welfare status on farm → **Advantages**

- incorporate in routine farm management
- less threatening – hence, more inviting – than external audits
- raising awareness about benefits of closely inspecting animals

✓ **Mobile application** for farmers

- to self-assess welfare of their livestock
- to get instant feedback (including potential risk factors, past scanning results & benchmarking)
- to monitor animal welfare status on their farm over time

CRITERIA SELF-SCANS



- ✓ selection of **animal welfare indicators**
 - animal-based '*outcome*' indicators (similar to Welfare Quality[©] & KTBL Protocols)
 - allowing straightforward scoring
 - limited but instructive number of animals (individual scoring)
 - time-span of about 1.5 – 2 h
- ✓ **key questions** on farm management, housing & production parameters
 - **benchmarking** with other, comparable farms
- ✓ allowing **offline data recording**
- ✓ **separate scans** (i.e. app **tiles**) based on type of housing/milking process
 - to allow for appropriate data collection
- ✓ **feedback** after online submission of **completed scan**
 - **report** automatically generated calculating scores for each key welfare indicator (0-100 scale)
 - **scores** depicted **over time** & **benchmarked*** anonymously

* only for members of farmers organisation Boerenbond

CHALLENGES



- ✓ self-scans carried out by farmers **not trained/experienced** in animal welfare assessment
 - tool ➡ self-explanatory
 - scoring selected welfare indicators ➡ straightforward & unambiguous
- ✓ **inviting, comprehensible & practical** for farmers
- ✓ **feasible** to include in routine farm management
 - Uptake restricted if too time-consuming and/or cumbersome
 - ➡ separate scans for different production groups, allowing assessment of one single group per time-slot
- ✓ without compromising **practical value** of the tool



SELF-SCANS



✓ Available for:

- **poultry** (broilers & layers)
- **pigs** (sows-piglets, weaners & finishing pigs)
- **beef cattle** (cows, calves & finishing cattle)
- **dairy cattle** (lactating cows, dry cows, calves & milking process)

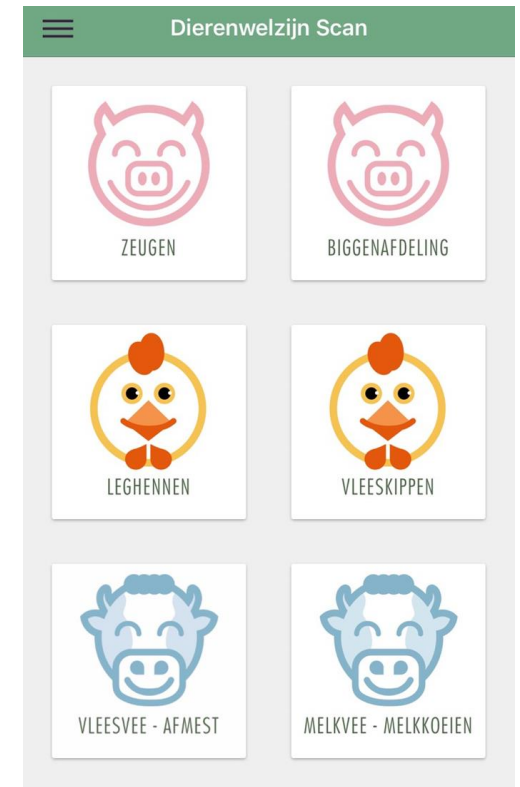
✓ Within **each animal category**

- **Separate scans** based on **type of housing / milking system**

- **Examples**

- free stall or tie stall barn (beef & dairy cattle)
- Suckler calves or separately reared calves (beef cattle)
- robotic milking system or milking installation with milking pipeline (dairy farms)
- enriched cages, floor housing or aviary (layers)

✓ Farmers can assess different production groups at **different time-slots**



SELF-SCANS

- ✓ To assess whether tool **comprehensible**, **inviting** & **feasible** for farmers
 - ➔ tested by regional study groups of farmers on 10 different farms

- ✓ As a result
 - number of animals to be individually scored ↓
 - several questions rephrased for clarity



SELF-SCAN BEEF CATTLE



Download

Log-in

Start

“Dierenwelzijn Scan”

- Dutch only -

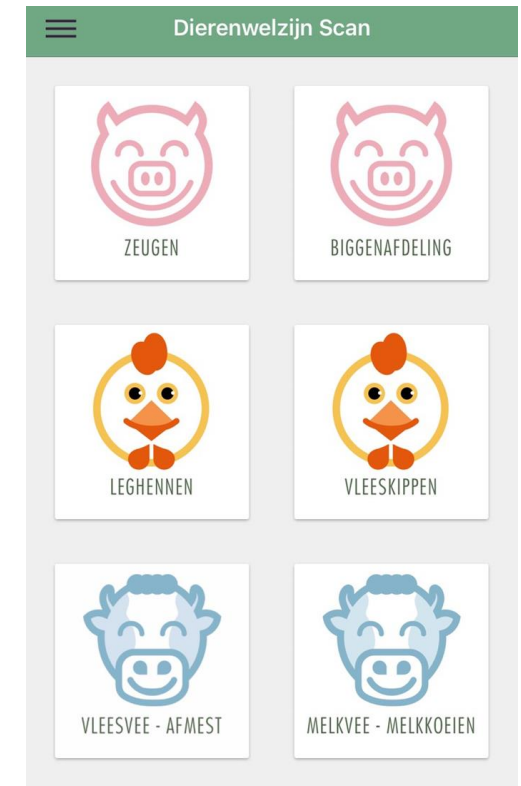
Google Play
(Android)



App Store
(iOS)



The login screen features three animal icons (pig, chicken, cow) at the top. Below them is the text "BLIJE DIEREN, BLIJE BOER". There is an email input field containing "testuser@ilvo.vlaanderen.be". At the bottom, there are two green buttons: "Volgende" and "Paswoord vergeten".



SELF-SCAN BEEF CATTLE



- ✓ **General Management**
- ✓ **Cows**
- ✓ **Finishing Cattle**
- ✓ **Calves** (≤ 6 months of age)



SELF-SCAN BEEF CATTLE



✓ General Management

- Breed
- Age of 1st calving
- Monitoring calving moment
- Assistance during calving
- Mortality (yearly basis)
- Disbudding (age, use of local anaesthetics)
- Tethering of calves
- Availability of sick pens & pens for lame animals
- Availability of cow brushes
- Pasture conditions (shelter, water provision)

✓ Cows

✓ Finishing Cattle

✓ Calves (\leq 6 months of age)



SELF-SCAN BEEF CATTLE

✓ General Management

✓ Cows (10)

- tie stall barn
- loose housing



✓ Finishing Cattle (10)

✓ Calves (10)

- suckler calves
- separately reared calves



SELF-SCAN BEEF CATTLE



✓ Housing conditions

- Temperature (outside)
- Light (readability of newspaper)
- Feed space (can all animals eat concurrently)
- Number of drinking points
- Cleanliness of water points
- Availability of cow brushes

✓ Group screening

- lying (partly) outside lying area *
- colliding with housing equipment when getting up *
- lameness

✓ Individual screening

- Body Condition Score
- Respiratory symptoms (hampered respiration, coughing, nasal discharge)
- Abnormal faeces (scouring, SARA)
- Skin lesions (mange, dermatophytosis)
- Complications caesarian section
- Complications disbudding
- Injuries (neck, knee, hock)
- Cleanliness
- Claw condition (overgrowth)
- Locomotion (lameness)



* tie stall barn

SELF-SCAN BEEF CATTLE

< Back Vleesvee - Zoogkoeie...
 voortgang.

68%

Zoogkoeienstal

14) Beoordeel de lichaamsconditie  

Eén score per dier (dus totaal van alle opties moet 10 zijn).

te mager (score 0-1)

— 0 +

optimaal (score 2)

— 0 +

(te) vet (score 3-5)

— 0 +

< >



Foto 1



Foto 2

LCS	Linkerhand aan het ligament van de staartaanhechting (foto 1)	Platte (palm) van rechterhand op de 2 laatste ribben (foto 2)
0	Vastliggende huid; moeilijk om knijpen	Huid 'plakt' aan de ribben
1	Gespannen huid; knijpen mogelijk	Duidelijk waarneembaar
2	Weinig vet	Ribben zijn nog onderscheidbaar
3	Klein handsvol vet	Huid rolt tussen hand en rib
4	Goed handsvol vet	Geen inzinking meer tussen de ribben
5	Groot handsvol vet	Laagje vet op ribben

SELF-SCAN BEEF CATTLE

Hock Lesion Scoring



REPORT - BENCHMARKING

- ✓ After **online submission** of **completed scan**
 - **report** automatically generated
 - Farm data
 - % for parameters NOT taken into account in score calculation
 - Calculating **scores** for **key welfare indicator**
 - scores **benchmarked*** anonymously with those of comparable farms

- ✓ **NO overall welfare score**

- ✓ **Automated Report**
 - Sent via e-mail
 - Available online (www.dierenwelzijnscaan.be)
 - Per score: **risk factors**
 - Report + Risk Factor listing → basis for **action plan**



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SELF-SCAN BEEF CATTLE

Score Calculation Hock Condition

SCORE

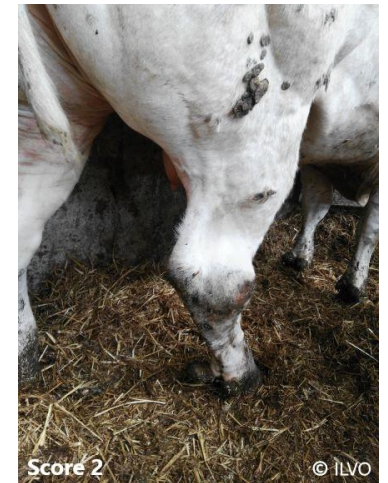
=

$$100 - [(\# \text{ Score 1}) / (\# \text{ Score 0} + \# \text{ Score 1} + \# \text{ Score 2}) * 100 + 5 * (\# \text{ Score 2}) / (\# \text{ Score 0} + \# \text{ Score 1} + \# \text{ Score 2}) * 100] / 5$$



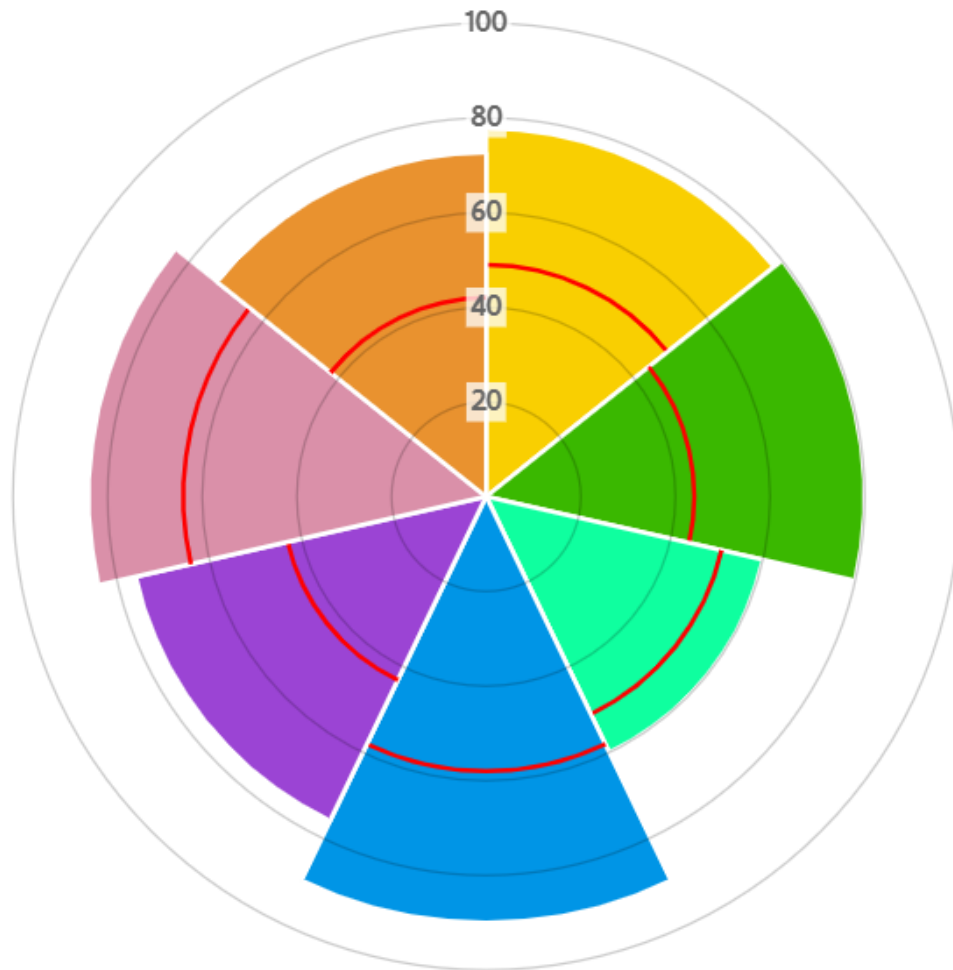
Score 0: worst possible hock condition

Score 100: perfect hock condition



Weighing factors: established by expert panel (**Welfare Quality**®)

REPORT - BENCHMARKING



Welfare Radar displaying scores for

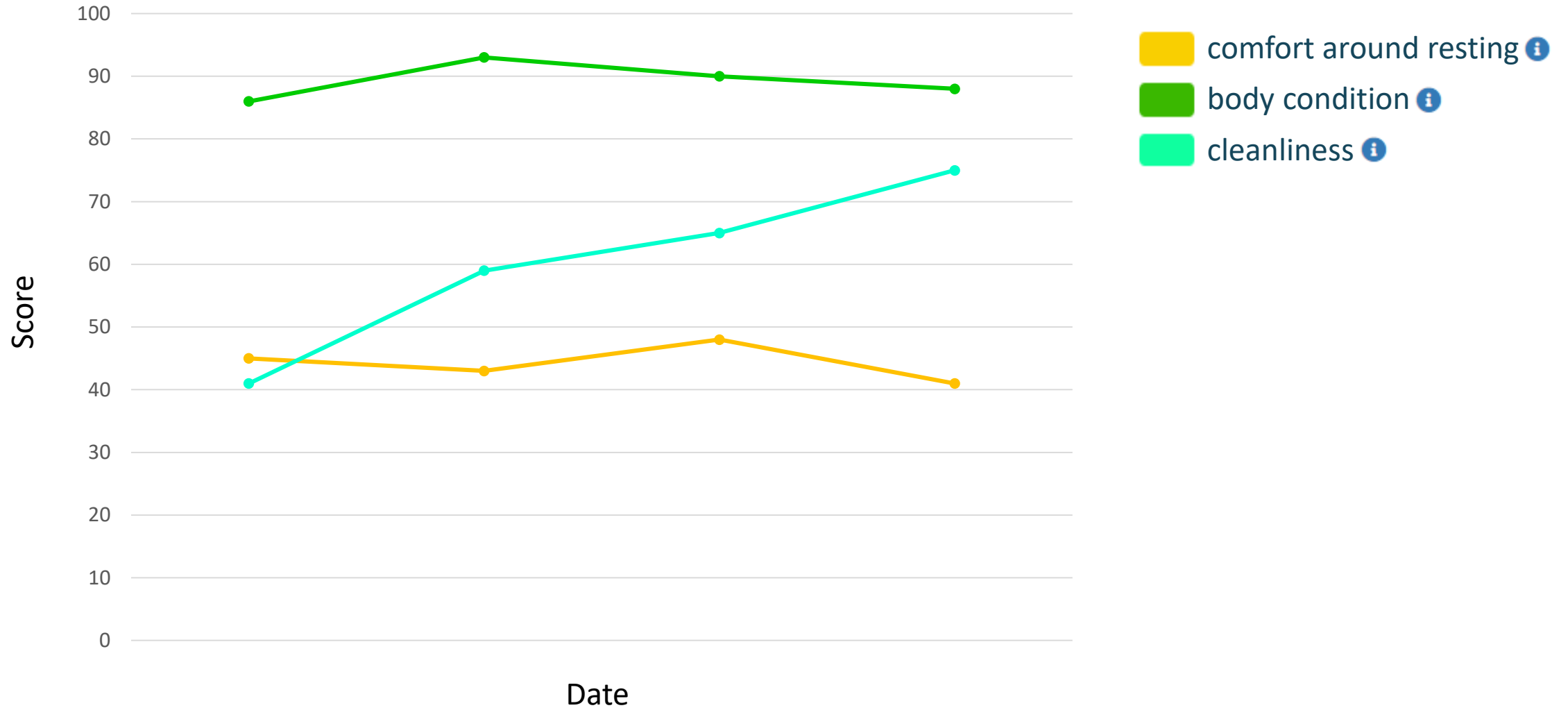
- comfort around resting ⓘ
- body condition ⓘ
- cleanliness ⓘ
- neck condition ⓘ
- knee condition ⓘ
- hock condition ⓘ
- locomotion ⓘ

○ P10

● Median

○ P90

REPORT - BENCHMARKING



SELF-SCANS



Scientific Validity

- Limited sample size > < flexibly incorporable in farm management



Value of the data collected

- raise awareness about benefits of closely inspecting animals
- pinpoint points of attention (linked with risk factors)
- encourage farmers to take action
- monitor effects of measures taken over time



Carried out by farmers not trained/experienced in animal welfare assessment

- comparability of data both within and between farms ?
> < compared to welfare audits performed by trained auditors



Effect of implementing tool on **actual animal welfare status** on farm



THANK YOU FOR YOUR ATTENTION

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DOWNLOAD INFORMATION

App freely available (Dutch only) on
App Store & Google Play

“Dierenwelzijn Scan – Blij Dieren, Blij Boer”