Animal Welfare Indicators Project (AWIN): Turkeys

Adroaldo José Zanella
Department of Preventive Veterinary Medicine and Animal Health,
School of Veterinary Medicine and Animal Science, University of São Paulo

- Turkey welfare:
- http://badbear.com.br/hub/early/story.html
- http://www.animalwelfarehub.com/LearningMaterials/Details/117

Turkeys in an app: facilitating practical on-farm welfare and health assessment of commercial turkeys.

I. Estevez, J. Marchewka, V. Ferrante, T. T. Wanatabe, G. Vezzoli, M. Makagon

App to assess turkey welfare

Smartphone / tablet app for turkey welfare assessment based on the transect methodology.

animal welfare science hub

Turkeys in an app

- Practical on-farm animal welfare assessment protocols for turkeys
  'adapted or designed for actual use; useful'

Defining the

- Welfare Indicators: *Defining the parameters*

Defining the indicators

Welfare Principles	Welfare Criteria	Welfare Indicators
Good Feeding	Absence of prolonged hunger	Small size
	Absence of prolonged thirst	Small size
Good Housing	Comfort around resting	Dirtiness
	Thermal comfort	Featherless
	Ease of movement	Not available
Good Health	Absence of injuries	Head wounds
		Back wounds
		Tail wounds
	Absence of disease	Immobility
		Lameness
		Small size
		Sick
		Terminally ill
		Dead
	Absence of pain	Lameness
Appropriate Behaviour	Expression of social behaviour	Aggression towards mate
		Featherless
		Mating
		Head wounds
		Back wounds
		Tail wounds
	Expression other behaviours	Not available
	Good human-animal relationship	Not available
	Positive emotional state	Not available

Some indicators provide information on more than one welfare criteria and are therefore associated to more than one colour.

Methodology

- **Challenges:**
  - Large flock sizes
  - Available protocols requires herding, enclosing and handling birds
  - High time and manpower demands
  - Particularly problematic in turkeys

Methodology

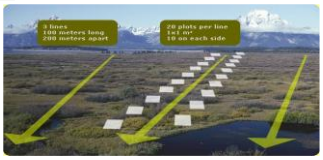
- Routine checks based on walks through the house to screen health status of the flock
- Individuals with visible severe welfare issues detected, with minimal bird disturbances –no quantitative-

Bill Staugler, Cooper Farms http://www.intelligent.com/local/2005/11/20/Parts-supplier-grew-quietly-hinting-Ca2m7X9BV14TY.99

Methodology

Line Transect (population dynamics):

- The line transect methodology successfully used in wildlife studies for decades
- Estimation of the abundance of populations



Methodology

- A similar approach that allows quantification of welfare indicators could be a practical approach for welfare assessment.

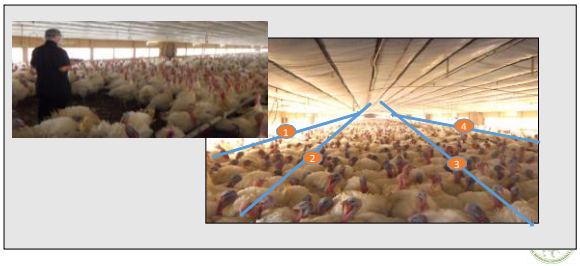
Bill Slaugler, Cooper Farms http://www.toledoblade.com/local/2005/11/20/Parts-supplier-grew-quietly-brettleGCa2m7K9B/141Y.99

Methodology

Transect Walks for welfare assessment:

- Standardized walks divided in randomly set paths covering the full area of the house
- Transects width limited by location of feeder and drinker lines

Methodology



Facilitating the assessment

i-WatchTurkey

Smartphone app for turkey health and welfare assessment.

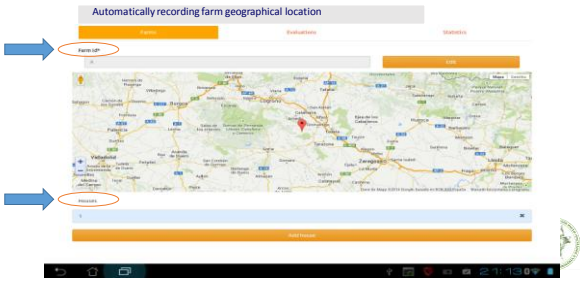
ANDROID

Google play

awin ANIMAL WELFARE INDICATORS

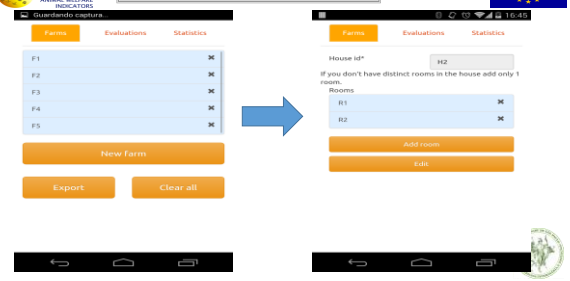
i-WatchTurkey

Automatically recording farm geographical location



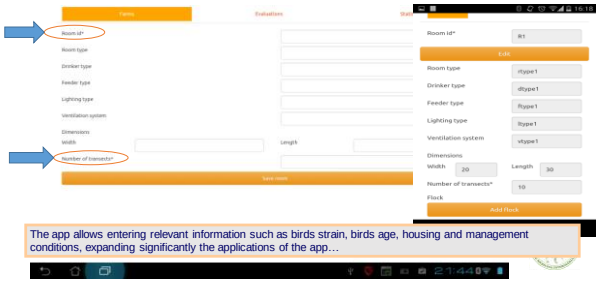
awin ANIMAL WELFARE INDICATORS

i-WatchTurkey



awin ANIMAL WELFARE INDICATORS

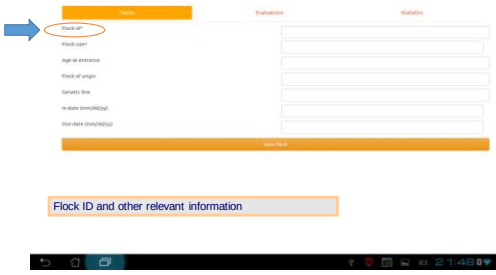
i-WatchTurkey



The app allows entering relevant information such as birds strain, birds age, housing and management conditions, expanding significantly the applications of the app…

awin ANIMAL WELFARE INDICATORS

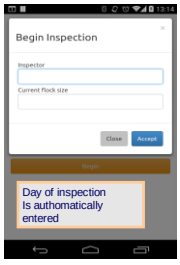
i-WatchTurkey



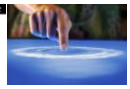
Flock ID and other relevant information

awin ANIMAL WELFARE INDICATORS

i-WatchTurkey

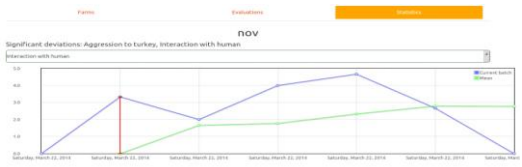


Day of inspection
Is authomatically entered



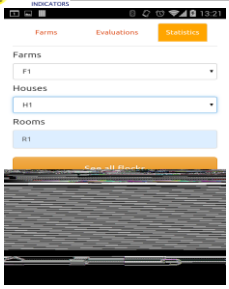
awin ANIMAL WELFARE INDICATORS

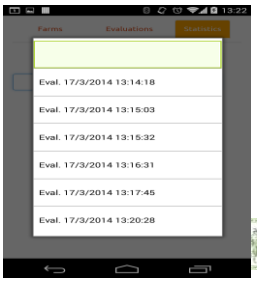
i-WatchTurkey

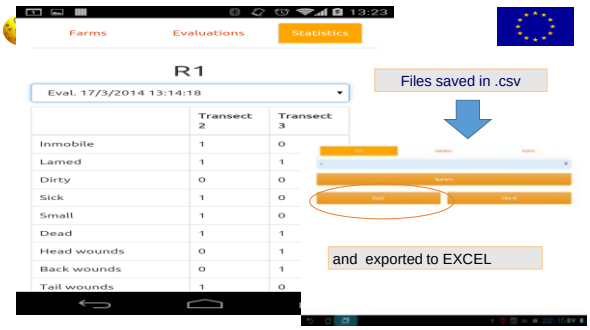


awin ANIMAL WELFARE INDICATORS

i-WatchTurkey

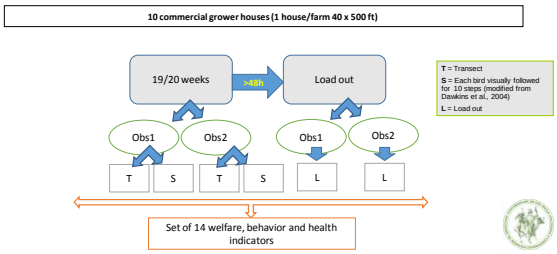






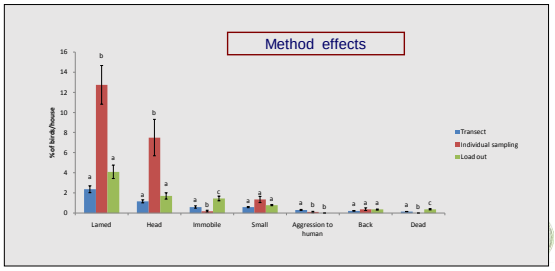
awin ANIMAL WELFARE INDICATORS

Methodology

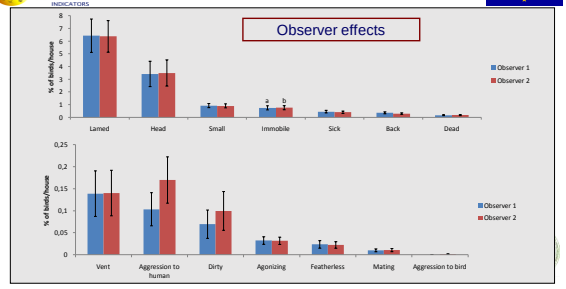


Methodology

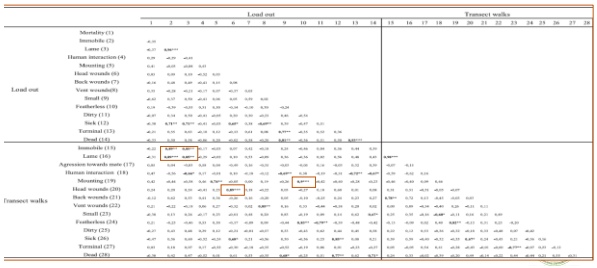
Results



Results



Results



Results

	Im	Lame		back Wnds											
Liveabilty (38)	0,36	0,42	0,04	-0,52	-0,52	-0,13	0,16	-0,31	0,30	-0,30	0,35	0,56	0,09	0,52
Condemned (39)	**0,84****	**0,84****	-0,24	-0,48	-0,51	0,20	**0,66***	-0,23	0,15	-0,09	0,24	**0,75***	0,10	0,19
DOA (40)	**0,71****	**0,63***	0,13	-0,26	0,00	0,15	**0,86****	-0,11	-0,12	0,40	0,23	0,33	0,21	-0,06
Whole (41)	**0,98*****	**0,95*****	-0,16	-0,56	-0,40	0,38	**0,81****	-0,06	0,24	-0,08	0,26	**0,66***	-0,02	0,24
Parts (42)	**0,68***	**0,71****	-0,21	-0,59	**-0,69***	0,16	0,35	-0,34	0,20	-0,46	0,40	**0,77****	0,10	0,47
Av GW (43)	-0,60	**-0,67***	0,13	0,70	0,55	-0,13	-0,33	-0,16	**-0,78****	0,37	-0,11	-0,55	0,32	-0,47
Age (44)	-0,23	-0,32	-0,08	**0,73***	0,33	0,32	-0,17	-0,19	**-0,71***	0,40	-0,44	-0,11	0,31	-0,39
Gain/day (45)	-0,56	**-0,65***	0,42	0,62	0,44	-0,25	-0,35	-0,26	**-0,71***	0,15	0,15	-0,62	0,43	-0,35

Potential benefits

Potential benefits of the transect methodology:

- **Identify, quantify and easily compare** the prevalence of important welfare issues in a very simple manner
- **Better quantify the impact of management** factors

Further studies required to:

- Verify the reliability of the methodology under a **large variety of situations**
- **To determine the predictive potential;** expected final performance of the flock from historical data created by routine application of the method
- Increase opportunities of taking **preventive actions**

This project was financed by the VII Framework Program for Research, Technological development and Demonstration activities of the project Animal Welfare Indicators (FP7-KBBE-2010-4)

Our contribution with the HUB

Science based indicators of animal welfare are necessary to meet the current needs.

In order to promote transparency and good communication among stakeholders and interested parties in animal welfare, a resource, such as the Animal Welfare Science Hub (www.animalwelfarehub.com), should be maintained.

We hope to establish collaborative strategies with the International Society for Applied Ethology and, perhaps, with the OIE Collaborating Centres.

Future work

- On line training
- Creating global databases on animal welfare outcomes

animal welfare science hub

enforce animal welfare policies

Acknowledgements

- Elisabetta Canali
- Valentina Ferrante
- Michela Minero
- Inma Estevez
- Francisco Galindo
- Eduardo Santurtun
- UNAM team

Thank you!

Acknowledgement

The AWIN project has received funding from the European Union s Seventh Framework Programme for research, technological development and demonstration under grant agreement number 266213.

adroaldo.zanella@usp.br

animal welfare science hub

www.animalwelfarehub.com