



Lessons learnt from LSD in Israel

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Train-of-trainer for field veterinarians on LSD (TCP/RER/3605) - Kiev, Ukraine, 31 May – 1 June 2018



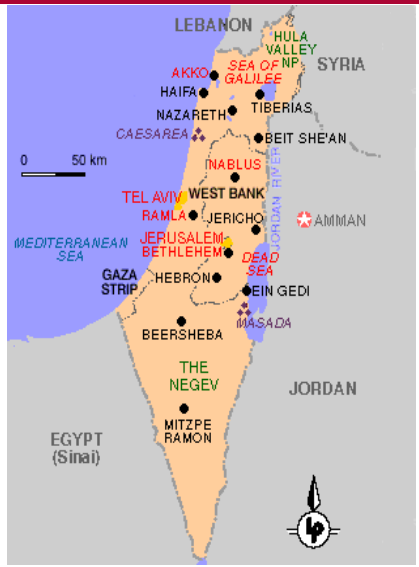
Outline

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- Knowledge & Information
- Preparedness
- Detection
- Control
 - measures
 - Transmission
 - Vaccination

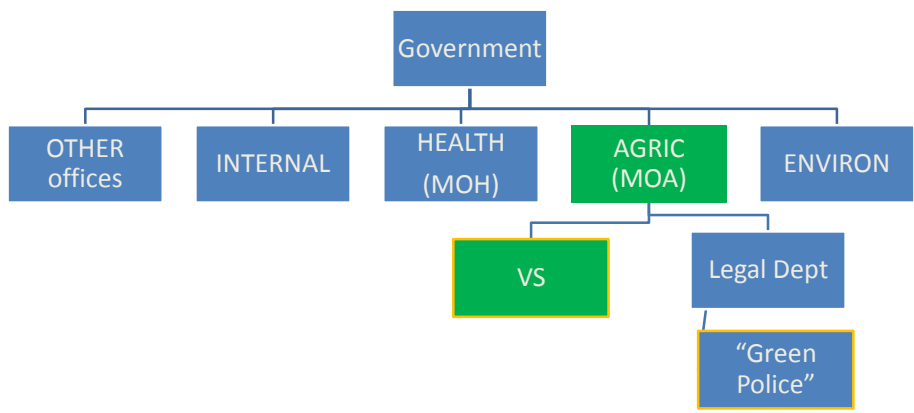
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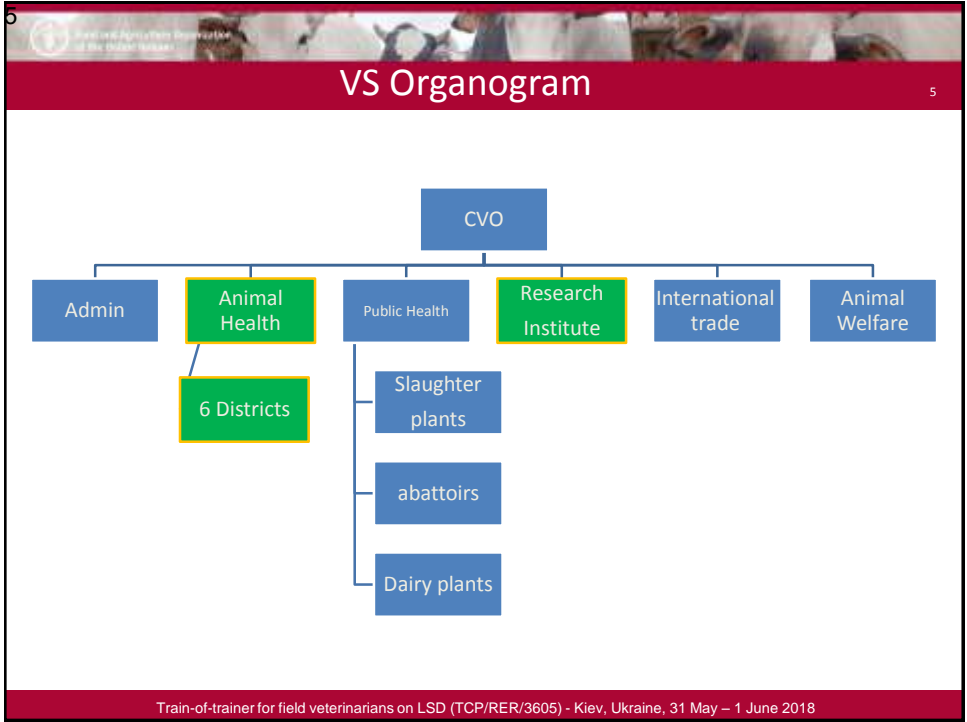
ISRAEL



Est. 1948
 9 Million people
 27,000 km²
 2% farmers

VS positioning





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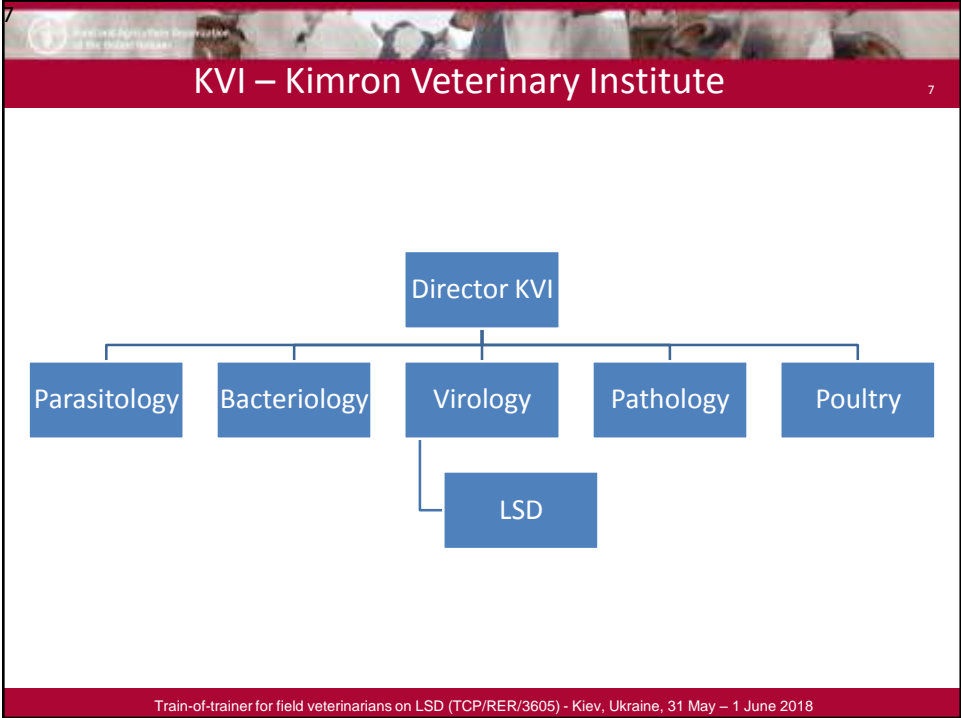
Field Veterinary Services

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- 6 Veterinary Districts
 - DVO -6
 - Vets - 33
 - Inspectors -14
 - Total - 53

The Field Veterinary Districts

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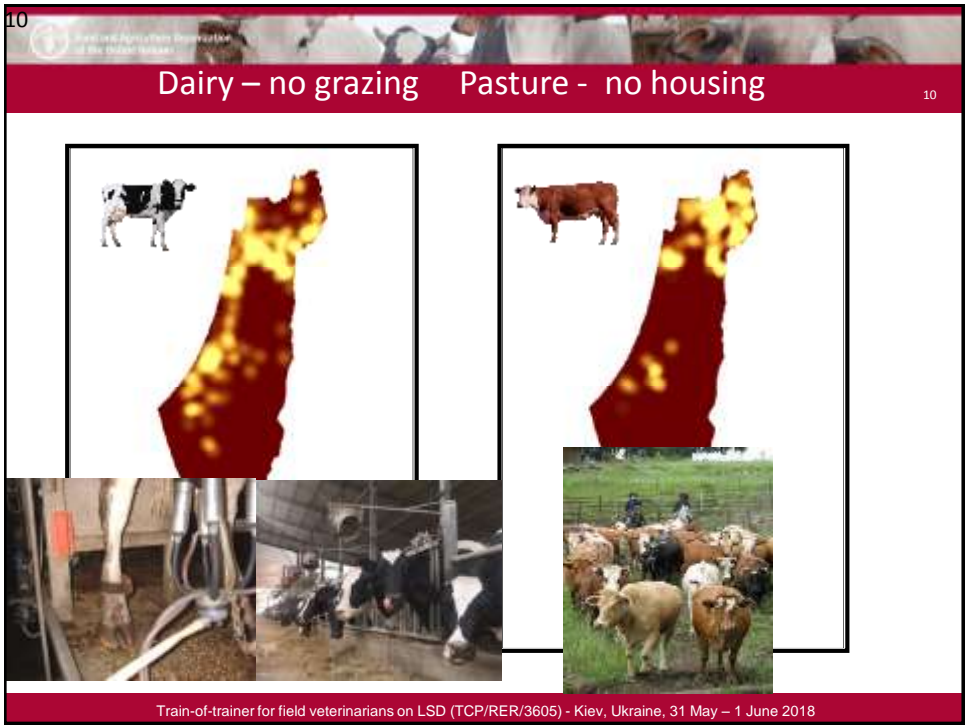
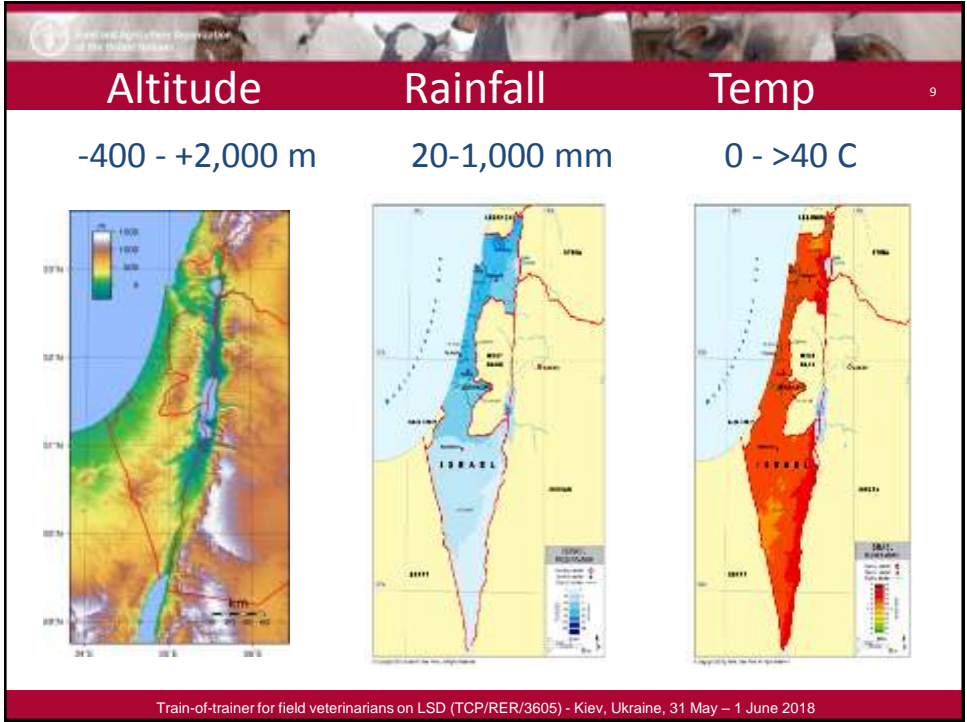


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cattle population (2012)

Type	Herds	Heads (~)	Farm size
Dairy Farms	828	250,000	40-1,100
Feedlots	457	200,000	50-6,000
Pasture	596	60,000	20- 1,000
Total ~	2,000	500,000	

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Active surveillance



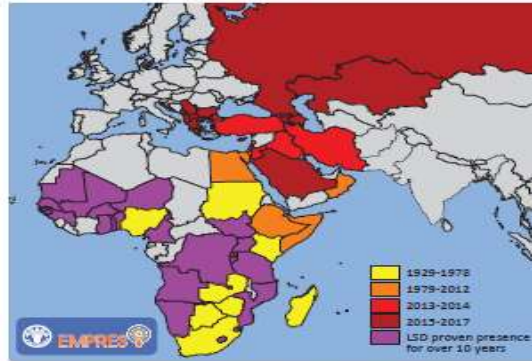
Where
When
How
Who- Gov./Private Vet-
Farmer
Training
\$\$



LSD "doctrine" until 2012

- Trans-boundary summer disease
- Comes from Africa - Egypt, Gaza Strip (South West)
- The vector is known (more or less)- Stomoxys
- Sheep Pox vaccine protects (2006-2012)
- Vaccination – annual, protection zone
- VS can detect early cases and eliminate the disease

FIGURE 1
Countries that have reported LSD



The outbreaks in the Russian Federation have been limited to regions within and next to the northern Caucasus.

Source: OIE WAHID and EMPRES-I, 2017



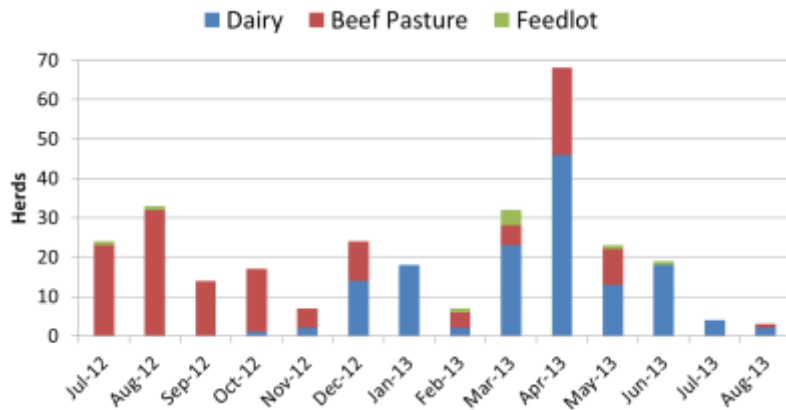


LSD outbreaks in Israel

Year	region	No of herds	Type of farm	Prev. Vacc.	Control method	Culled / died
1989	Western Negev	1	Dairy no-grazing	NO	Stamping Out	>800 heads
2006	Southern coastal plain	1	Dairy No grazing	NO	Vaccinate, clinical test & cull	206 heads 33% of herd
2007	Western Negev	9	Dairy and Beef Small size pasture	Sheep Pox RM 65	Clinical test & cull	508 Dairy 5.5% Beef 33%(10-41)
2012-2013	north	293	Beef dairy	no	Vaccination Selective-culling	Died- 632 (< 1%) Culled- 451 (<1%)

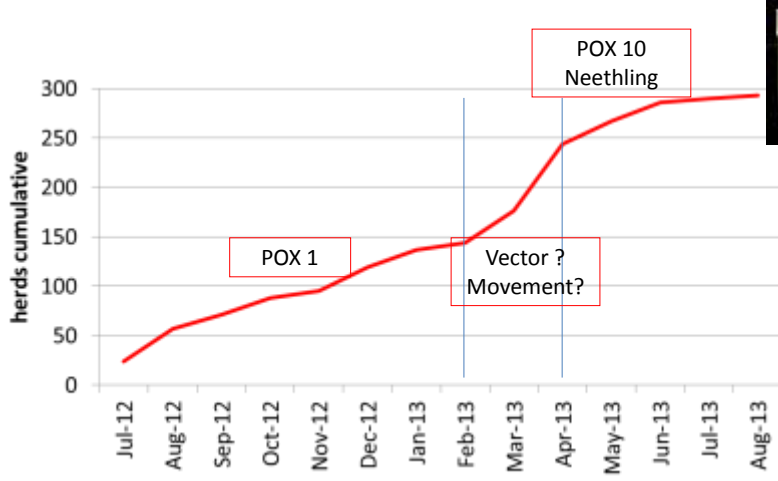


Herds incidence by month and type



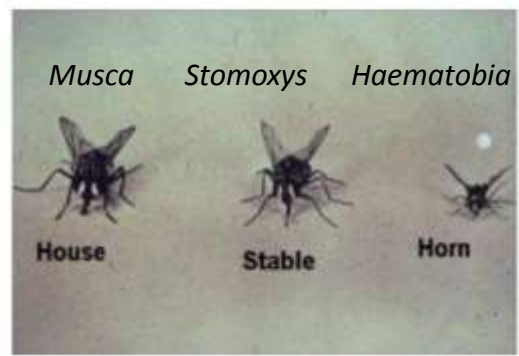


Cumulative # of infected Herds



Transmission - mechanical Vectors

- Insects
- abundance
- life cycle
- breeding
- feeding
- Wintering
- syringes

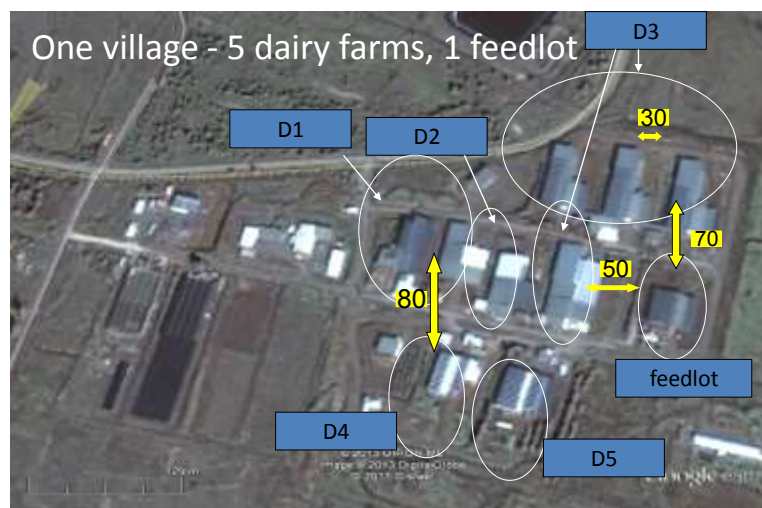


Vector transmission

- More than one vector
- Different vectors- region, season, housing
- Slow & steady spread (compare to BT)
 - With cattle- Horn fly
 - without cattle- Stomoxys
- No effective vector control

- Cattle movement: legal (un dx) & illegal
- Transit permit is required prior to moving

Morbidity variability



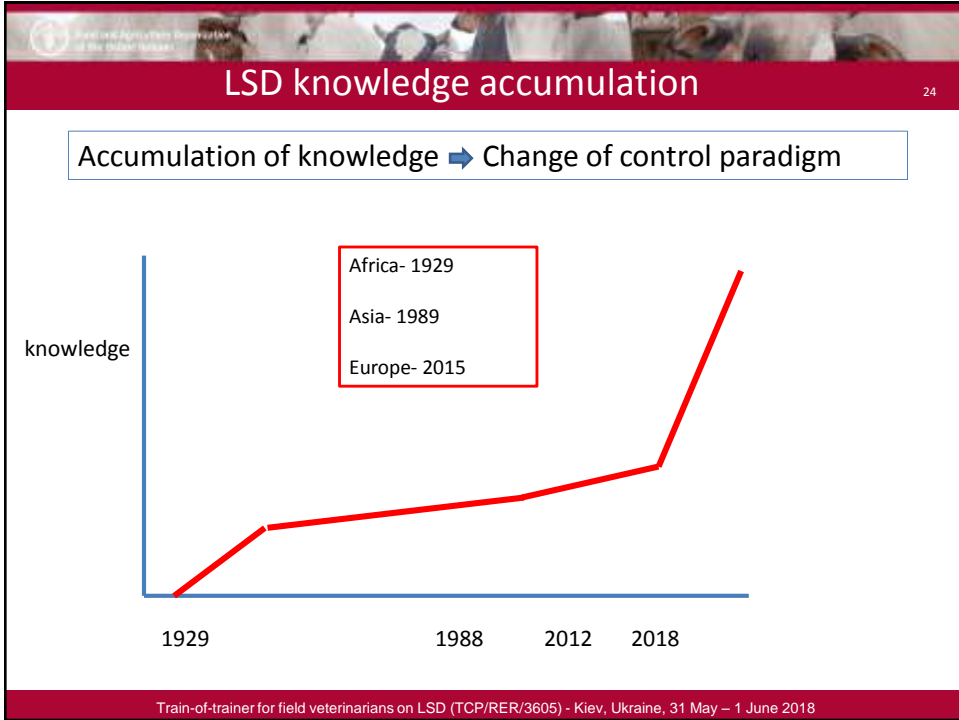
Kanaf village farms –morbidity variability

Farm	Heads in herd	clinical ~ moderate & Severe cases	Duration (d) first- last case
Dairy 1	219	8%	91
Dairy 2	75	16%	36
Dairy 3	50	2%	0
Dairy 4	475	2%	85
Dairy 5	40	0%	0
Feedlot	300	0%	0

Unauthorized cattle movement

Truck load of infected cattle “jumped” 100 km





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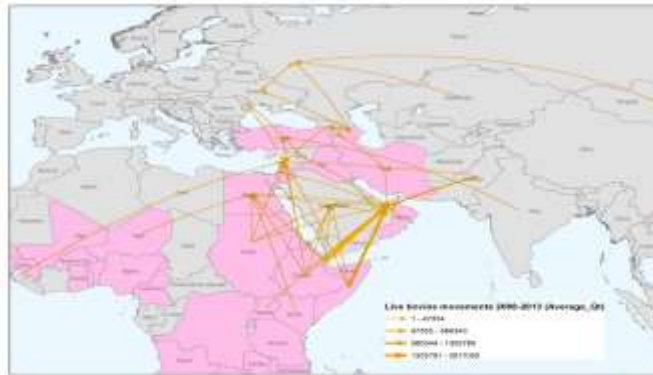
Neethling vs Pox-10 controlled field trial

	Neethling OBP	sheepox-10X <i>Jovac</i>
# vaccinated	4,222	4,279
# Non clinical	4,192	4,178
% non clinical	99.3%	98.8%
% Clinical cases	30 (0.7%)	51 (1.2%)
mild	7	22
severe	23	29

J. Ben Gera et al Vaccine (33) 2015

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Live cattle movements 2008-2013



Pink- Countries reporting LSD in 2011-2014 according to OIE

EFSA Journal 2015; 13(1):3986

Summary

- Study the variability (epidemiology)
- Prepare a plan
- Detect and Respond
- Contain
 - Control
 - Back to freedom
- Evaluate and adapt
- Consult and collaborate- nationally & int'lly

Thank you

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“Every challenge is an opportunity to learn something”



“Very few things are simple Black and White”

Thank you - Questions ?

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Genghis Khan



“He never fought the same battle twice”