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Effects of the novel concept ‘outdoor veal calf’ on antimicrobial use, daily weight gain and mortality in Switzerland

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Where does veal come from?



Where does veal come from?

- Bovine calves slaughtered at ~5 months
- CH: ~30% of orally administered antibiotics to veal calves
(ARCH-Vet, 2014; Proviande, 2015)
- Main reason for treatment is pneumonia
- Treatment incidence 21 ± 15 resp. 12.5 days/calf-year
(Lava et al., 2016a,b; Schnyder et al., 2019)

Background: Risk factor analysis

Lava et al., 2016 a,b

- Purchase
- No clinical examination at arrival
- No quarantine
- No vaccination
- Groups >10 calves
- Weight differences >50kg within pen
- Shared air space

Intervention study design

19 intervention farms

‘Outdoor veal calf’ system

19 control farms

IP-Suisse label guidelines

Observation period 1 year

Comparison of performance data



Intervention farm example



1. Direct purchase

2. Quarantine

3. Outdoor fattening



Intervention farm example



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Results

Parameter	Intervention group	Control group	p-value
Mean treatment incidence [days/calf-year]	5.90 ± 6.53	31.50 ± 27.4	<0.001
Treated animals [%]	15.10 ± 11.54	56.00 ± 24.33	<0.001
Mean number of treatments per treated animal	1.66 ± 0.59	2.43 ± 0.86	0.004
Mean mortality [%]	3.07 ± 2.34	6.29 ± 4.93	0.02
Mean daily weight gain [kg/day]	1.29 ± 0.17	1.35 ± 0.16	0.24

Susceptibility testing (of *E. coli* and Pasteurellaceae)

- Isolation of bacteria of the respiratory tract and indicator bacteria of the guts



- 7012 samples were taken (isolation of 3551 *E. coli* and 2282 Pasteurellaceae)
- Minimal inhibitory concentration susceptibility testing is ongoing

Limitations

- No random assignment of participating farmers to groups
- Farmers in 'outdoor veal calf' group may be innovative
- For outdoor hutches, sufficient surface is needed

Conclusions

- Drastic reduction of treatment incidence and mortality
- No difference in daily weight gain
- Implementation according to principles of risk reduction
- In toto- or adapted use of concept (in case of local restraints)

Funding Institutions and Organizations



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