

Background

Antibiotics (AB) are currently threatened by the emergence of antibiotic resistance (ABR), leading to a lack of options to treat infectious diseases in people, livestock and aquaculture. Thus, it jeopardizes human health, animal health as well as food and nutrition security. In Vietnam, the pig sector contributes a considerable part to the overall amount of antibiotic used (ABU) in food animal productions, leading to AB residue in pork and an increased risk of ABR.

Objective

This study aimed at understanding the use of antibiotics in pig farms in Bac Ninh province in Vietnam.

Methods

The research was conducted in Bac Ninh province in 2018 and 2019 by both interviews and a record system.

Interviews:

Sample size: 110 pig farms from different farm-scale sizes including small (<20 pigs), medium (<200 pigs), and large farm (>200 pigs).

Questionnaire: Data on household socioeconomics, pig production system, farm management and the use of antibiotic, knowledge, attitude and practice of ABR and ABU and were collected by questionnaire to the owners or workers of these pig farms. Farmers were also interviewed on pig health management (diagnose and treatment) with antibiotics.

Record books:

Sample size: 110 pig farms (70 out of 110 farms had joined the interview process)

Duration: 4 months from September to December 2018.

Data collection: A record system was set up with 110 record books on ABU for therapeutic use at pig farms where farmers are trained and asked to record the quantity, purpose, duration of the use and the type of antibiotics.

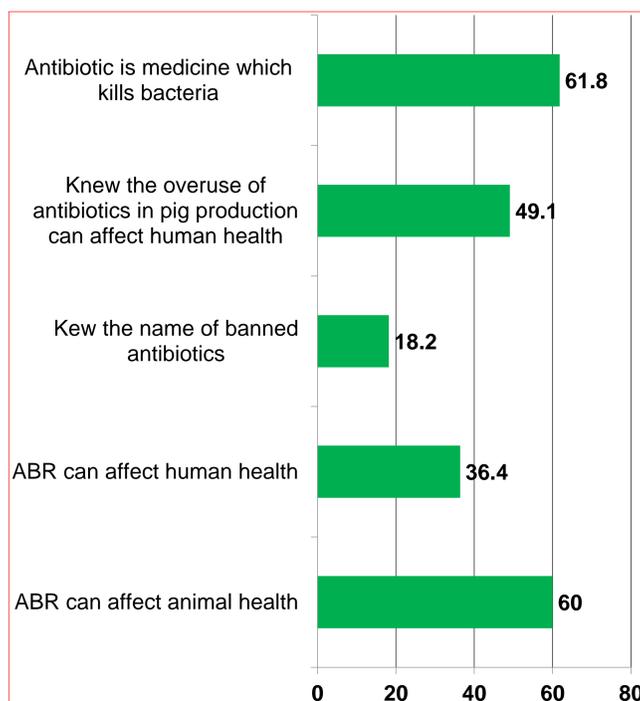


Figure 1: Knowledge of using antibiotics

Knowledge: 18.2% of farmers knew about the name of banned antibiotics. 49.1 % of them knew the overuse of antibiotics in pig production can affect human health.

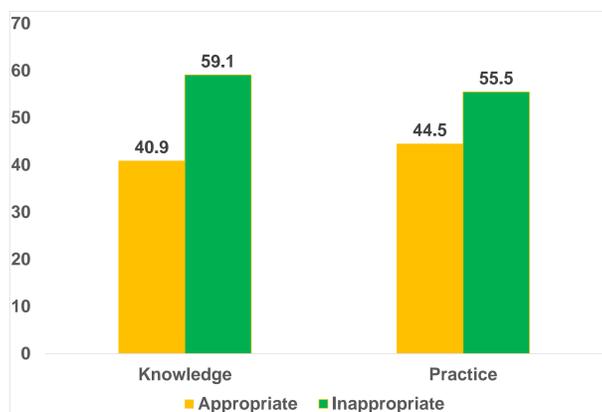


Figure 2: Distribution of knowledge and practices

Farmers who had appropriate knowledge constituted of 40.9%, and the percentage of farmers with appropriate practices was 44.5%. Educational level, working experiences were identified as factors to be significantly associated with knowledge of farmers while influencing factors of practices were gender ($P < 0.05$).

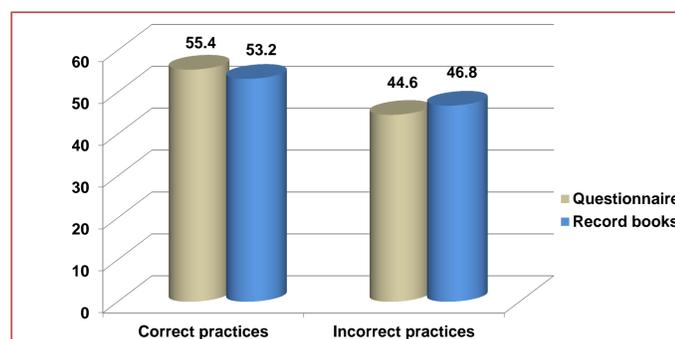


Figure 3: Distribution of antibiotic uses based on questionnaire and record book

Practices	Frequency	Percentage
Disposal of excess antibiotics in the garbage	56	50.9
People have a great influence on practices of antibiotic use		
Him/herself	62	56.4
Veterinarians	56	50.9
Drug sellers	55	50.0
Followed the indication when using antibiotic		
Followed the indication	38	34.5
Did not follow the indication	38	34.5
Followed veterinarian guides	34	30.9
Responses when pigs got diseases		
Based on own experiences	63	57.3
Called to veterinarian	59	53.6
Asked drug sellers and buy drug	57	51.8
The dose of antibiotic use		
Increasing the dose	34	30.9
Decreasing the dose	4	3.6

Table 1: Practices of using antibiotics

Practices: 34.5 % of farmers said they followed the instruction of the drug use, 34.5% did not while 30.9% of farmers followed the veterinarian advice. 30.9% indicated they increased the dose while 3.6% decreased the dose.

Knowledge		Appropriate	Inappropriate	OR 95% CI	P
Educational level	> Secondary	14 (38.9%)	22 (61.1%)	3.5 (1.5 – 8.0)	0.003
	≤ Secondary	51 (68.9%)	23 (31.1%)		
Working experiences	>18	39 (72.2%)	15 (27.8%)	3.0 (1.4-6.6)	0.006
	≤ 18	26 (46.4%)	30 (53.6%)		
Practices		Appropriate	Inappropriate	OR 95% CI	P
Gender	Female	30 (71.4%)	12 (28.6%)	3.0 (1.3 – 6.8)	0.008
	Male	31 (45.6%)	37 (54.4%)		

Table 2: Associated factors of knowledge and practices

Findings from record books:

Antibiotics were used for therapeutic purposes at 77 farms (70%). During the observation, antibiotics were used 97 times, including 45 different types of antibiotics divided into 9 groups of antibiotics. The outcomes from the questionnaire and record books showed a little different between the correct antibiotic use and incorrect antibiotic use.

Conclusion

Our study shows that the use of antibiotics for therapeutic purposes in pig production was common in Bac Ninh. Most of the use was not appropriate as farmers increased the doses, treated sick pigs themselves without diagnose or without seeking help from a veterinarian. These results would be useful to plan training and interventions to improve farmers' KAP on AB use in pig production.



Picture 1: Interviews by using tablets