

Antibiotic Footprint – Do We Need It ?

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Carbon Footprint

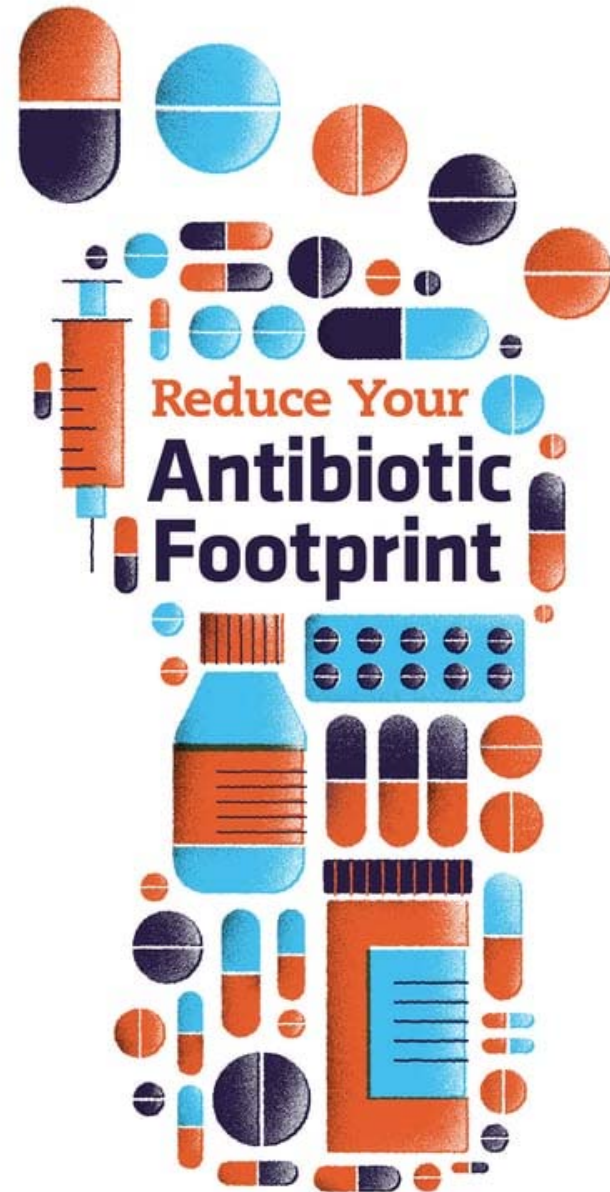
Based on the idea that all users of **energy** leave on an imprint of their use on the environment

Antibiotic Footprint

Based on the idea that all users of **antibiotics** leave on an imprint of their use on the environment

<http://www.health.state.mn.us/onehealth/abx/footprint.html>

<http://www.mdpi.com/2079-6382/2/2/191>



<https://i.pinimg.com/736x/45/9d/d5/459dd5aa24b7c7136670b97564771b1f--business-organization-carbon-footprint-project.jpg>

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footprint.wwf.org.uk

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WWF FOOTPRINT CALCULATOR CAN YOUR HOME SAVE £ AND CO₂ TOO?

HOW BIG IS YOUR ENVIRONMENTAL FOOTPRINT?

Our lifestyle choices make up our environmental carbon footprint. Measuring yours takes less than 5 minutes and could change the way you live...

GET STARTED NOW

Your home is a big part of your environmental footprint – but it doesn't have to be. Calculate how much energy your home might be wasting and send a message to your MP to help improve our homes


feedback




FREE CARBON CALCULATORS

For Individuals And Small Businesses

Select the type of calculator you need



Individual



Small Business

CLIMATE CHANGE (COP21)

KEEP GLOBAL TEMPERATURES RISE

WELL BELOW

2°C

WITH ASPIRATION TO

1.5°C

ALL COUNTRIES TO REPORT REGULARLY

ON THEIR EMISSIONS AND EFFORTS TO REDUCE THEM



NEW TRANSPARENCY AND ACCOUNTING SYSTEM IN PLACE

EVERY 5 YEARS

REVIEW EACH COUNTRY'S CONTRIBUTIONS TO GHG EMISSIONS CUTS SO THAT THEY CAN BE SCALED UP

DEVELOPED COUNTRIES TO PROVIDE

\$100BN

CLIMATE FINANCE PER YEAR **UNTIL 2025**

WHAT DO GLOBAL CITIZENS THINK?

78%

WANT THEIR COUNTRIES TO TAKE MEASURES TO REDUCE GHG EMISSIONS EVEN IF OTHER COUNTRIES DON'T

70%

NOT SATISFIED WITH PAST UN CLIMATE NEGOTIATIONS

56%

SUPPORT RENEWABLE

90%

SUPPORT A CARBON TAX

Carbon trading in a Paris Agreement

UNFCCC

INDC

NAMA

FVA

Johan Nylander

FORES Study 2015:4

FORES

Carbon Facts

Product Size 1 Cheeseburger (130g)

Amount Per Serving

Kilograms CO₂ Equivalent 5.18

Kilograms CO₂ .243 Kilograms CH₄ .215

Total C: Energy Sources 243g

Transportation

Fossil Fuel (Diesel) 120g

Fossil Fuel (Gasoline) 48g

Electricity Production

Fossil Fuel (Natural Gas) 75g

Fossil Fuel (Coal) 0g

Other

Total C: Non-Energy Sources 4939gCO₂E

Enteric Fermentation 181.0g (4110gCO₂E)

Manure 25.8g (656gCO₂E)

Other 5.2g (120gCO₂E)

Carbon/Product Ratio 39.9

Localism Rating C+

Sustainable Production Rating D+

overall carbon code: orange



Antibiotic Footprint Thailand



**When was the last time you
took antibiotic ?**

<https://antibioticfootprint.wordpress.com/>

Antibiotic Footprint Thailand



Result of the pilot study

Thai subjects: 6 months

Expats in Thailand: 1.5 years

Antibiotic Footprint Thailand



How about our animals ?

<https://antibioticfootprint.wordpress.com/>

What is “Antibiotic free” meat ?



- Current labels on meat packages are ‘confusing’
- “antibiotic-free” means “no residual antibiotics”

What is “Raised without antibiotics” ?



- “raised without antibiotics” means “raised without medically important antibiotics” – Colistin ?
- Who is NSF ? Details ?
- **“No label” = “ATB used is neglected”**

Review



antibiotics



Review

Antimicrobial Usage and Antimicrobial Resistance in Animal Production in Southeast Asia: A Review

Only 6 studies so far; 2 were in Thailand

- One study in integrated fish-chicken farms**
- One study in fish and shrimp farms**
(Both had no quantitative data)

Gumphol Wongsuvan et al.

Antibiotic use in Thai chicken farms

**This online first version has been peer-reviewed, accepted and edited,
but not formatted and finalized with corrections from authors and proofreaders.**

**Antibiotic use in farming chicken meat: a survey of eight farms in
Thailand**

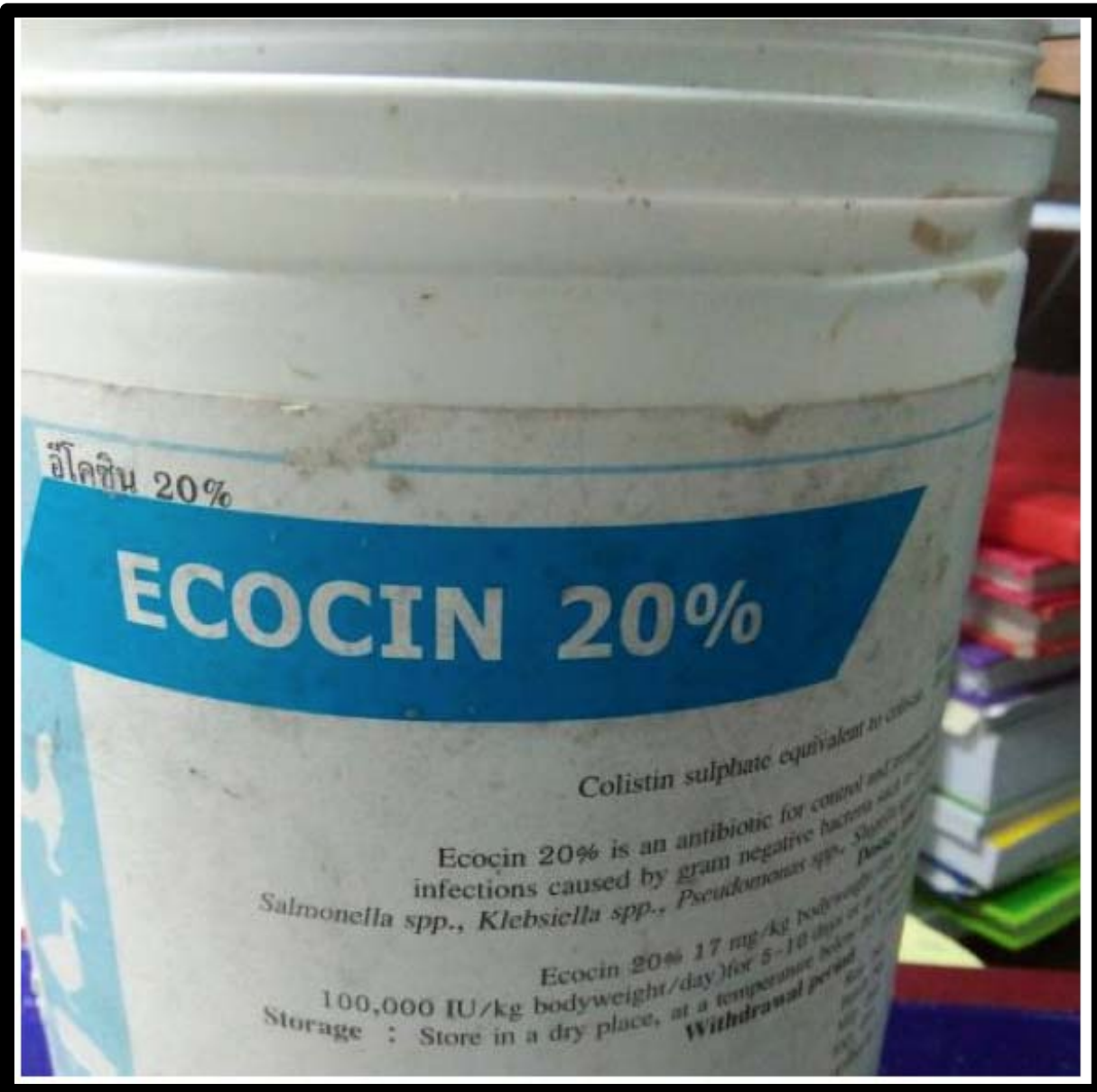
Gumphol Wongsuvan,^a Vanaporn Wuthiekanun,^a Soawapak Hinjoy,^b Nicholas PJ
Day^c & Direk Limmathurotsakul^a

- **None of the surveyed farm reportedly used long-term low-dose antibiotics for growth promotion.**
- **3 of 8 farms (for company ‘B’) used routine antibiotic prophylaxis**



An example of a house to raise 14,000 meat chickens / cycle

An example of Timetable of Antibiotic Feed to Raise 14,000 Meat Chickens	Oral Antibiotic Prescriptions *	# per Day
age 1 day to 4 days (4 days)	Tilmicosin solution	85 ml
age 1 day to 4 days (4 days)	Doxycycline	40 grams
age 9 day to 12 days (4 days)	Amoxycillin	140 grams
age 9 day to 12 days (4 days)	Colistin 20%	300 grams
age 15 day to 18 days (4 days)	Doxycycline	340 grams
age 21 day to 24 days (4 days)	Amoxycillin	560 grams
age 21 day to 24 days (4 days)	Colistin 20%	1,200 grams
age 28 day to 31 days (4 days)	Oxytetracyclin	4,000 grams



Composition
 Each 1 kg contains
 200 g (6,000 MIU)

Indications
 Gastrointestinal

Colistin sulphate equivalent to colistin

Antibiotic Footprint for a 3-kilogram Meat Chicken	Antibiotics	Total Amount of active antibiotics
A chicken	Tilmicosin	6 mg
A chicken	Doxycycline	54 mg
A chicken	Amoxycillin	100 mg
A chicken	Colistin	86 mg (2.6 MIU)
A chicken	Oxytetracyclin	57 mg
A chicken	Total antibiotics	303 mg



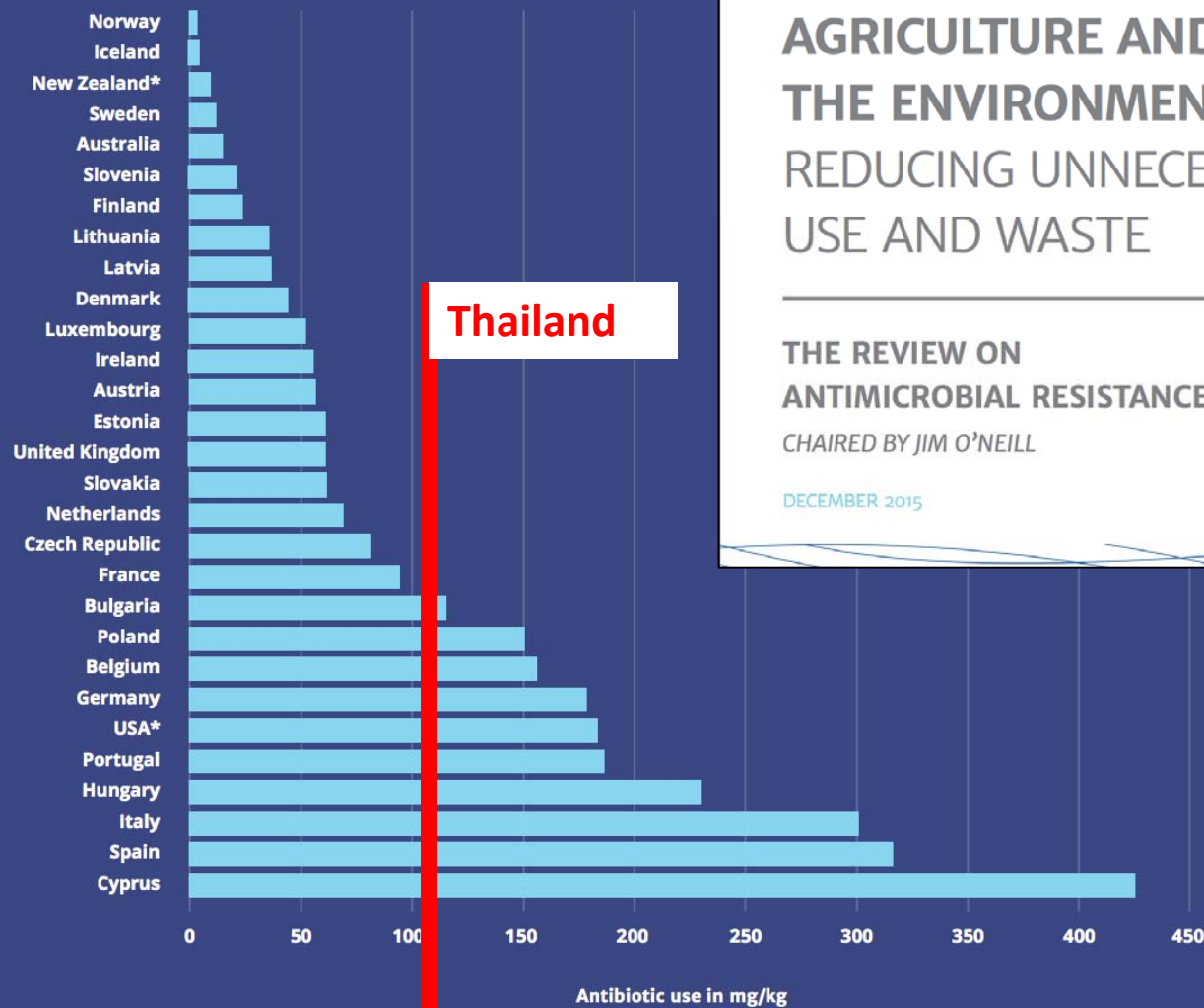
303 mg of ATB
101 mg/kg



10 days window
period before
slaughtering



ANTIBIOTIC USE IN AGRICULTURE VARIES GREATLY BY COUNTRY



ANTIMICROBIALS IN AGRICULTURE AND THE ENVIRONMENT: REDUCING UNNECESSARY USE AND WASTE

THE REVIEW ON ANTIMICROBIAL RESISTANCE

CHAIRERD BY JIM O'NEILL

DECEMBER 2015

<https://amr-review.org/sites/default/files/Antimicrobials%20in%20agriculture%20and%20the%20environment%20-%20Reducing%20unnecessary%20use%20>

- **Thailand produces about 1,400 million meat chickens per year**, and 80% of chicken meat came from 12 large companies.
- If we extrapolate that meat chicken farms in Thailand were fed with antibiotics similar to what we observed, proportionally, **the total antibiotics used for meat chicken industry alone is about**

“161 tons of antibiotics a year”

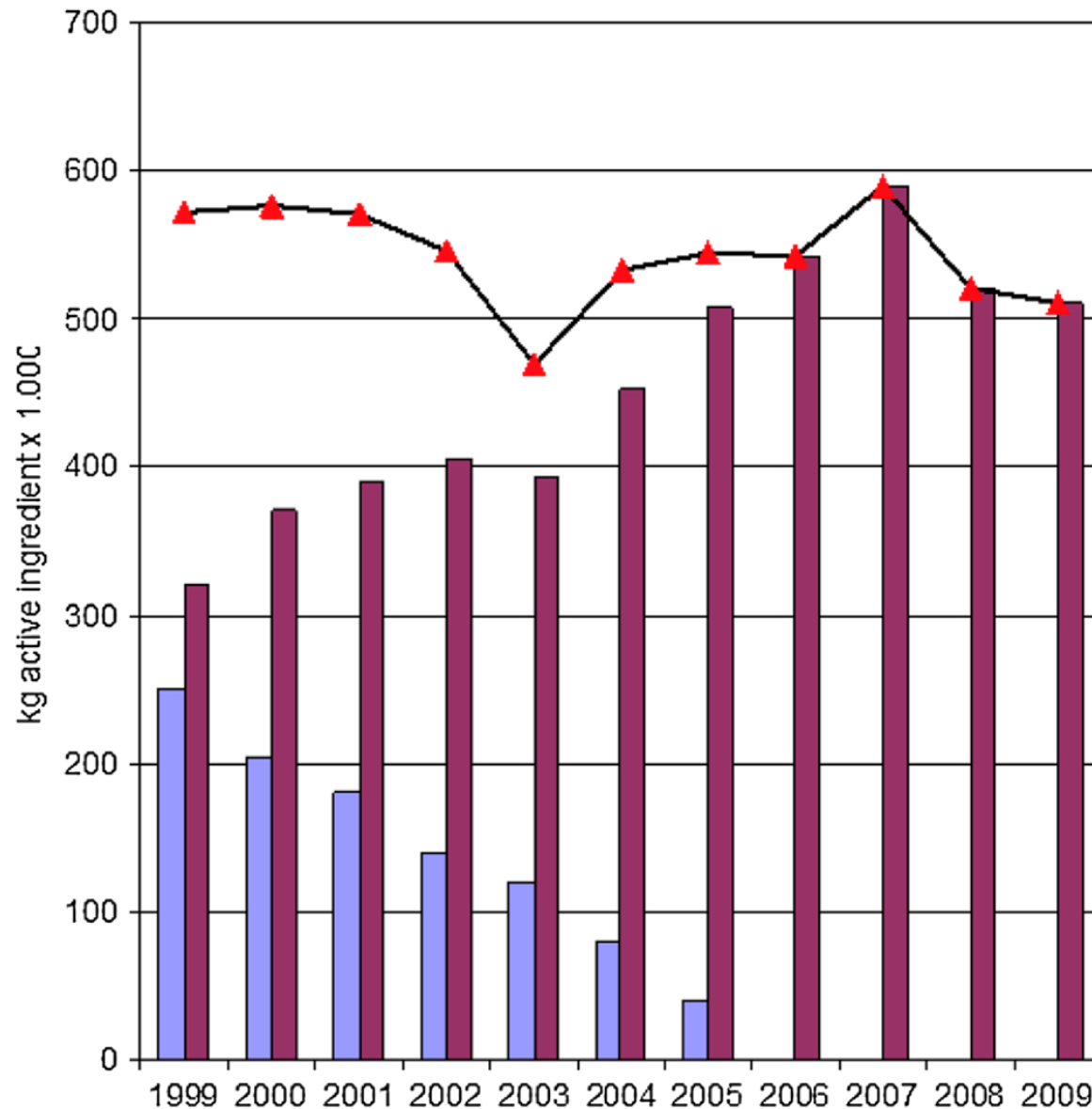


Fig. 1 Sales of antimicrobials for therapeutic use on prescription in animals (*purple bars*) and sales of antimicrobial growth promoters from 1999 to 2009 in the Netherlands (*Source: FIDIN*) (color figure online)

**Sales of
antibiotics in
livestock
production in
the Netherlands
increased from
approximately
300 tons in 1999
to almost
600 tons in 2007**

Our proposal: 'mock-up retail label'

Antibiotic Facts

Product: chicken breast (100 g)

Antibiotic footprint: 101 mg/kg*

Antibiotics used to produce 1 kg of chicken:

Amoxicillin**	33 mg
Colistin**	29 mg
Oxytetracycline***	19 mg
Doxycycline***	18 mg
Tilmicosin**	2 mg

For the last 10 days of its life, the chicken from which this meat came was raised without antibiotics. This meat is categorized as antibiotic-free (i.e. it has no detectable antibiotics)

* The total amount of antibiotics given to the chicken over its entire life divided by the target weight at the time of its slaughter.

** World Health Organization classifies this antibiotic as critically important to human medicine.

*** World Health Organization classifies this antibiotic as highly important to human medicine.

Take Home Message 1/3

- Campaign to stop using ATB as growth promoter alone is not enough
- The extent and nature of antibiotic use in animals should be officially and openly reported by each farm, sector and country.
- There is no data available from EMA to compare with our mg/kg in chicken & Better relevant information is needed

Take Home Message 2/3

- Colistin is currently considered to be the last defence against multidrug-resistant bacteria
- EU has set a target for colistin use in food-producing animals, of < 5 mg/PCU
- Chicken farms producing for company B would have to reduce their overall use of colistin by at least 83% (from 28mg/kg of final weight to < 5)

Take Home Message 3/3

- The **labels on animal products** should contain information on antibiotic footprints that is similar to that already given on carbon footprints.
- These measures **may encourage a reduction in antibiotic use** globally and lead to a reduction of AMR

Acknowledgements

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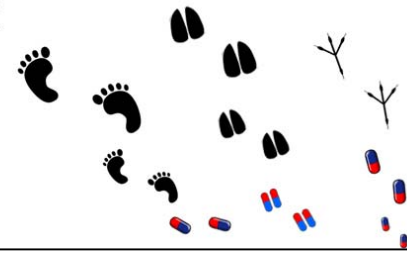
Anchalee Jatapai

Sharon Peacock

Ben Cooper

Nicholas Day

Antibiotic Footprint Thailand



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