

# ANTIMICROBIAL SALES IN ANIMALS IN THE EU:

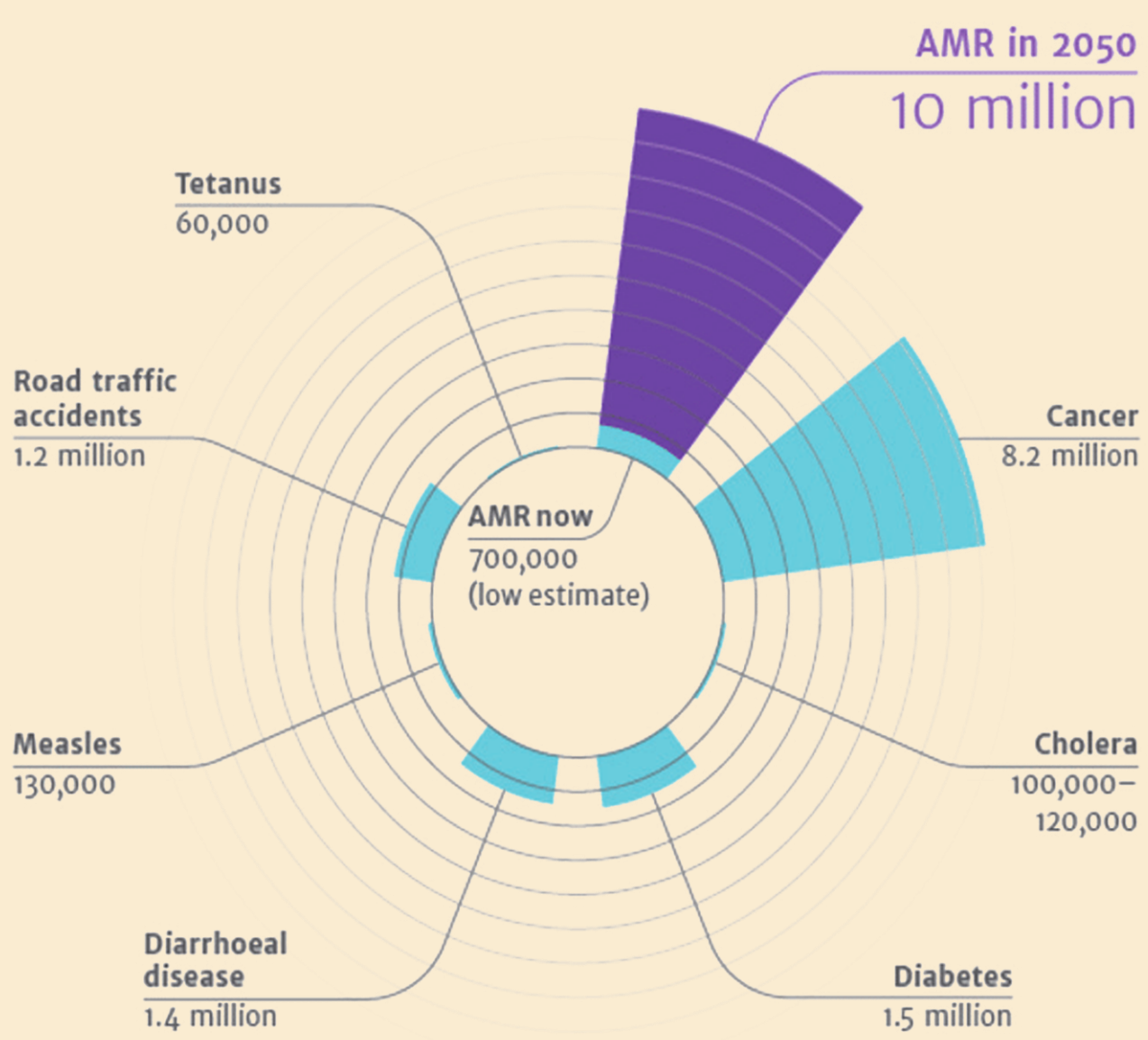
## Correlation between sales and environmental temperatures

### INTRODUCTION

AMR is a global public health crisis that defies our ability to well treat bacterial infections. Many infectious agents that could once be successfully treated with any of several drug classes, have acquired resistance to most of them. (McEwen & Collignon, 2018).

The EU suggests the creation of a project, led by the EMA, to collect data on the antimicrobial consumption in EU/EEA countries. This project, called ESVAC, aims to promote consistent and standardized data collection for antimicrobial use.

Gaining access to this information is crucial for identifying potential risk factors that contribute to the emergence and dissemination of any antimicrobial resistance in animals.



### MATERIALS AND METHODS

1. The data used in this study come from the ESVAC iterative public database. We used the same ESVAC units. The population correction unit (PCU) as a proxy for the size of the animal population at risk of being treated.
2. The statistical test used to address the hypotheses is the Pearson's linear correlation coefficient.

### RESULTS AND CONCLUSIONS

#### 01.

From 2010 to 2021, the majority of countries have made notable reductions in the overall use of antimicrobials in the food production animals.

#### 02.

Countries that initially had low levels of AMC in 2010 have continued to decrease their usage, demonstrating a clear understanding of the importance of reducing AMC.

#### 03.

To effectively reduce AMC, particular attention should be given to penicillins and tetracyclines, as they account for nearly 50% of total sales in 2021.

#### 04.

The overall sales provided to ESVAC indicates a strong correlation between AMC and temperature in these countries. Therefore, nations with a higher environmental warmth should prioritize the execution of policies aimed at reducing AMC.

### OBJECTIVES

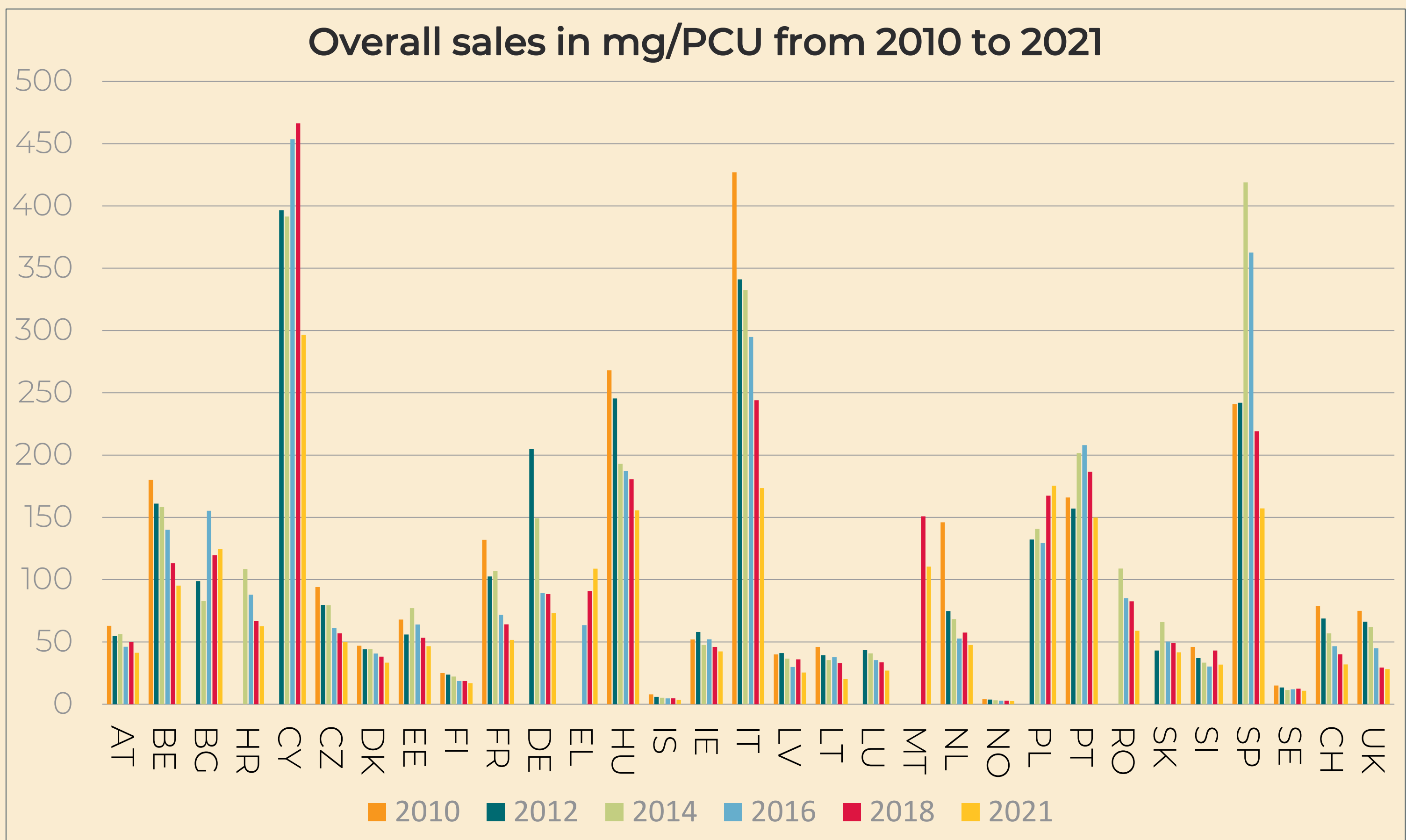
#### 01.

Analysis of sales and trends of antimicrobials data from animal use in EU/EEA countries involved in the ESVAC project between 2010 and 2021.

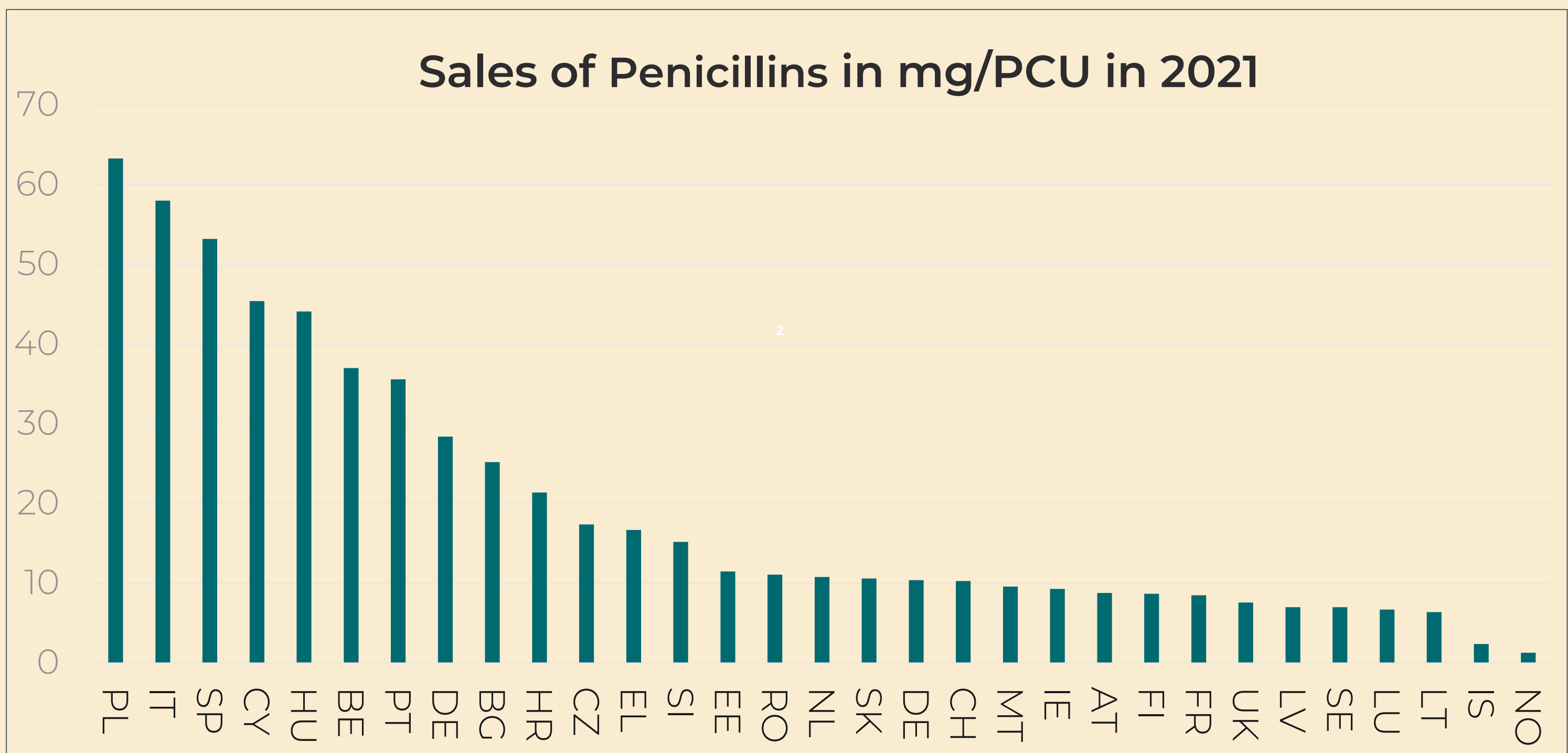
#### 02.

Determine if there is any correlation between antimicrobial use and mean environmental temperatures in EU/EEA countries.

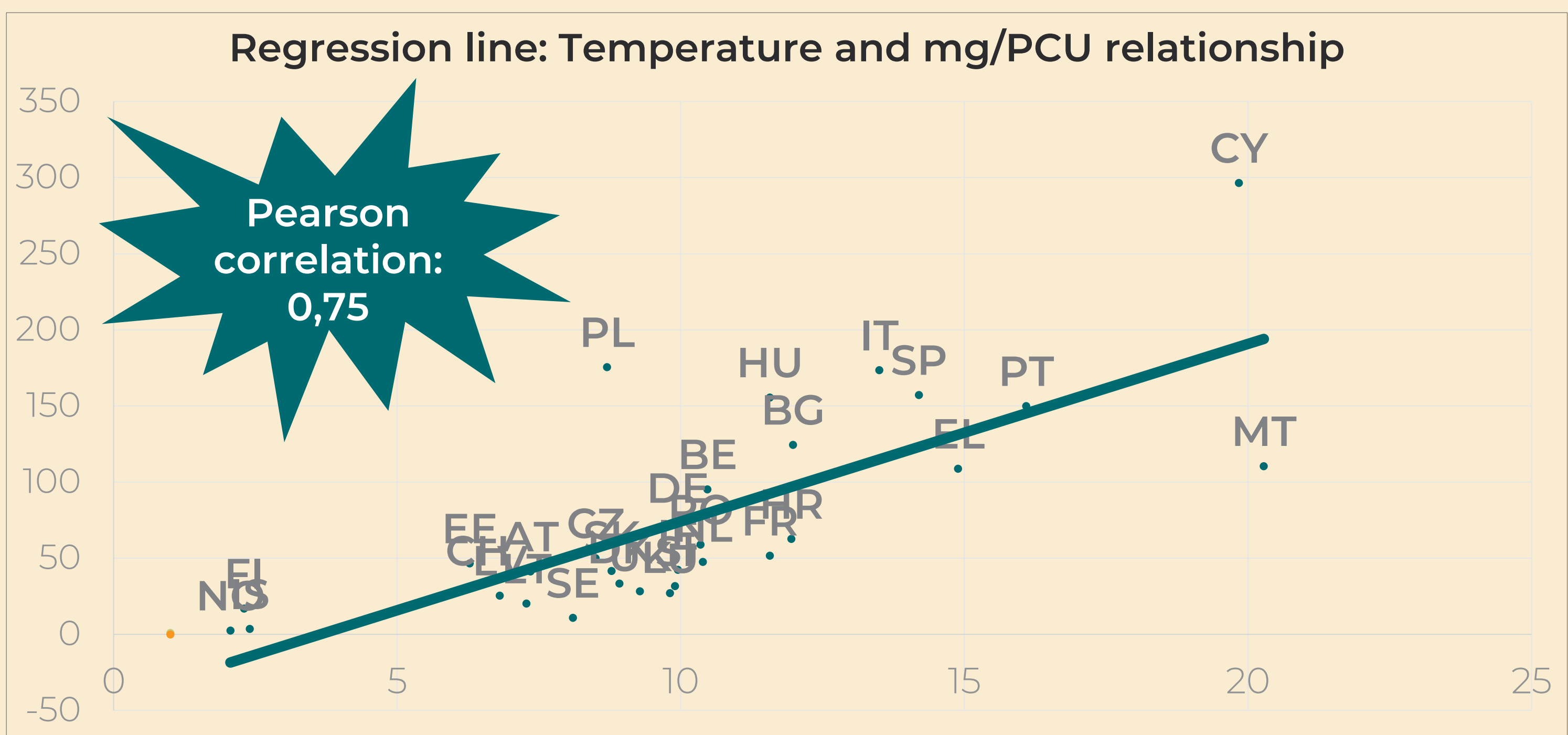
### RESULTS



**Figure 1.** Overall sales of antimicrobials in mg/PCU for all countries reporting data to ESVAC, recorded every two years from 2010 to 2021.



**Figure 2.** Overall sales of penicillins in mg/PCU for the year 2021, across all countries that provided data to ESVAC, arranged in descending order.



**Figure 3.** Sales of antimicrobials in mg/kg PCU in 2016 vs average temperature in the country.