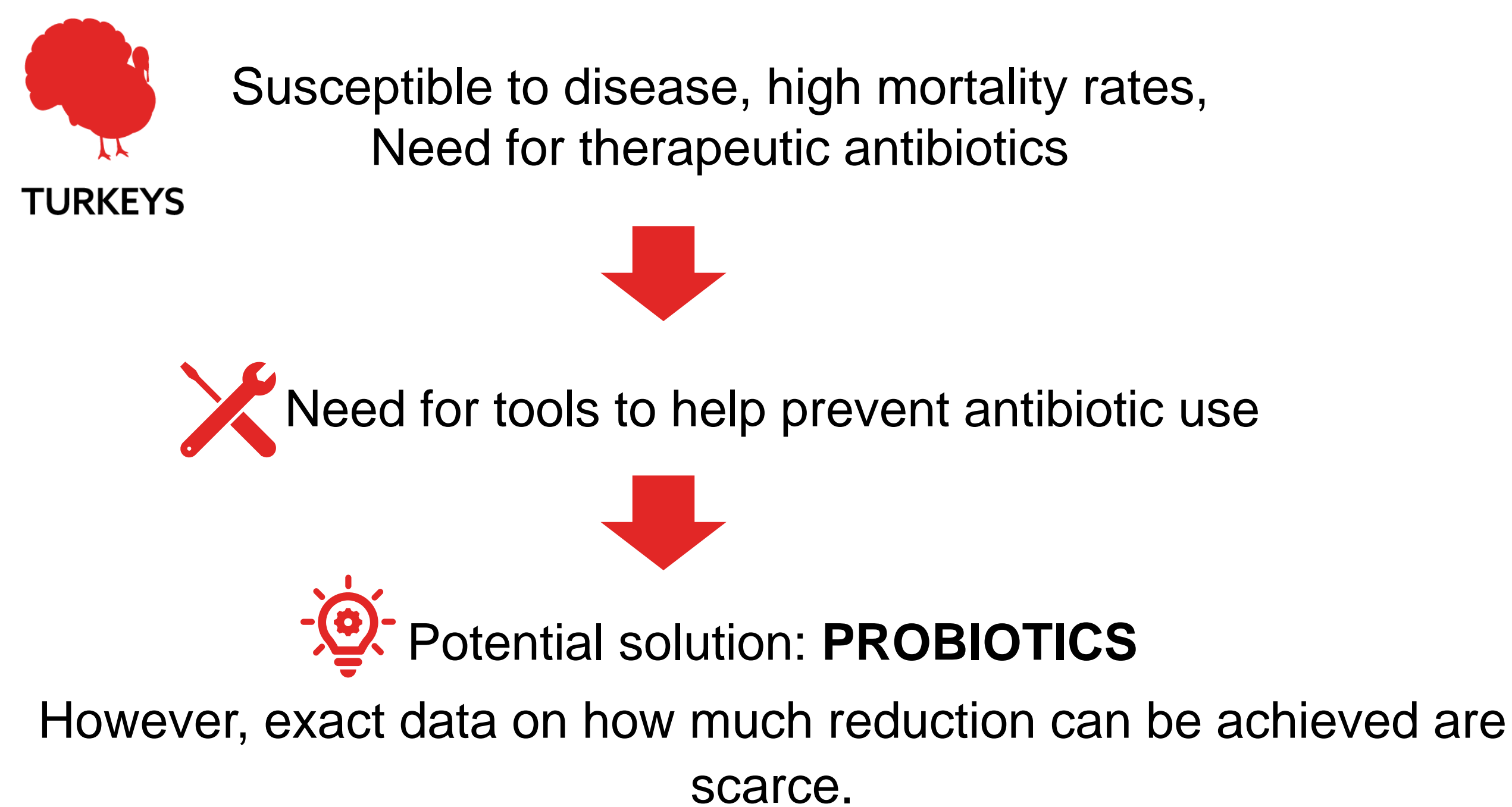


MANAGING HEALTH RATHER THAN WAITING FOR THE NEED TO TREAT: PROBIOTICS AS ALLIES FOR TURKEY HEALTH

SUSANNE KIRWAN¹, NATASJA SMEETS¹, VALENTINE VAN HAMME¹, ERIC N'GUETTA¹

Kemin Europa NV, Toekomstlaan 42, 2200 Herentals, Belgium

INTRODUCTION



OBJECTIVES

The present study aimed to test the hypothesis that a **specific strain of *Bacillus* sp. ATCC PTA-6737 (PB6)** has the potential to reduce therapeutic antibiotic use in commercial turkey farming.

MATERIALS AND METHODS

- Duration: 27 weeks, start in December
- Place: At a commercial poultry integrator in Western Europe
- Treatments: Usage of *Bacillus* sp. PB6 strain was applied across all flocks from hatch till slaughter via the drinking water (3×10^8 CFU/1000L), on every occasion of wet litter or other indications of intestinal health problems. The probiotic was applied at the first signs of intestinal health challenges, instead of antibiotics (Beta-lactams, Colistin, Others)

Note: At the same time, vaccination for ORT (Ornithobacterium rhinotracheale) was introduced. No further change in housing, husbandry, genetics or management conditions happened concurrently.

- Measurements:
 - Antibiotic use year 4 vs. historic data*
 - Morbidity year 4 vs historic data*

* 3 previous years (no probiotic use): year 1, 2, 3

RESULTS

Compared to the three previous years, following was observed:

- ✓ A numerical decrease in the number of applications of beta-lactams (-13%)
- ✓ A statistically significant ($p < 0.05$) decrease in colistin treatments (-44%) and the grouped other antibiotics (-51%)
- ✓ Significant decrease in the frequency of diseases requiring treatments:
 - ✓ Enteritis (-38%)
 - ✓ Colibacillosis (-34%)
 - ✓ ORT (-38%)

Figure 1: Effect on Colistin usage

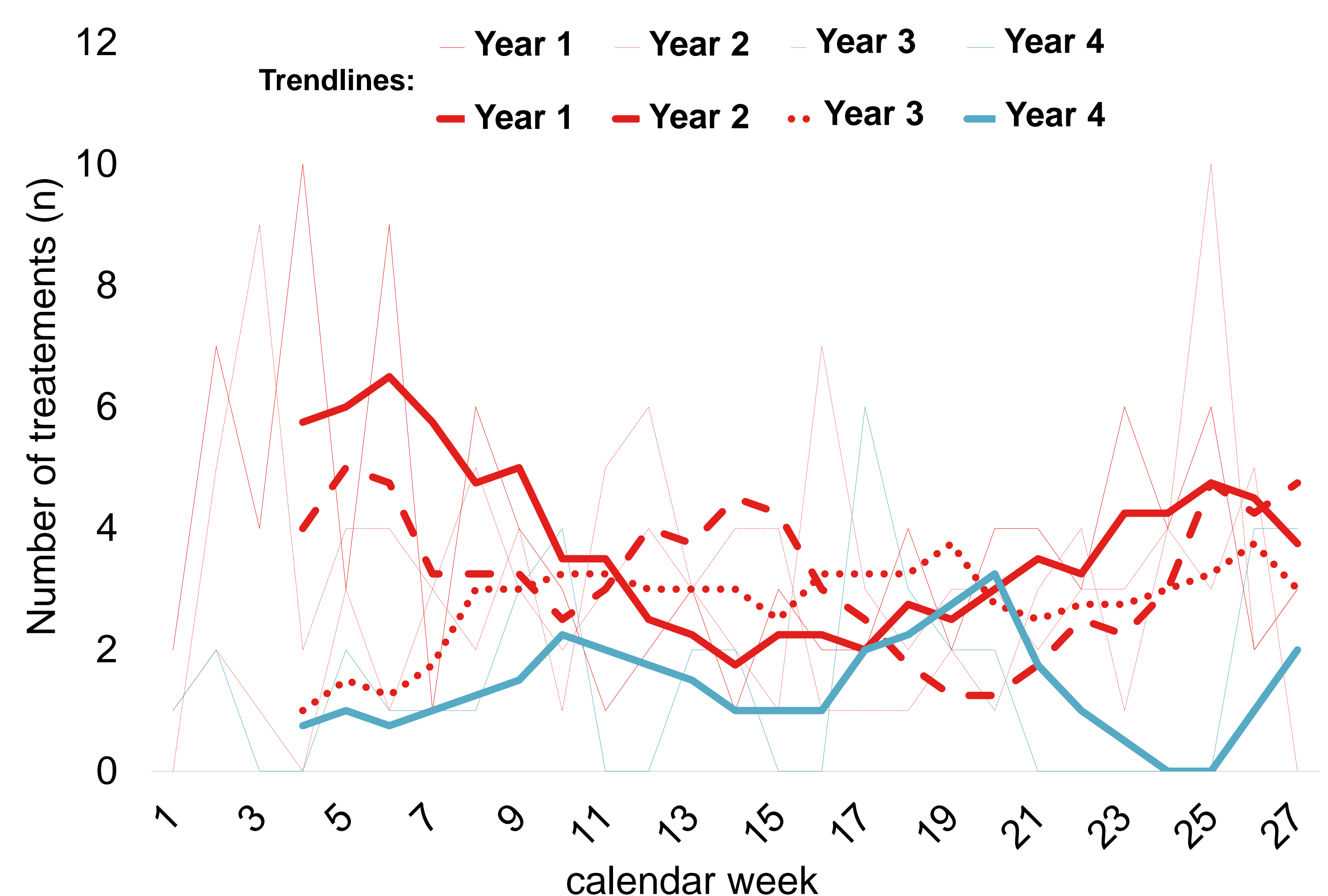


Figure 2: Morbidity year 3 versus year 4

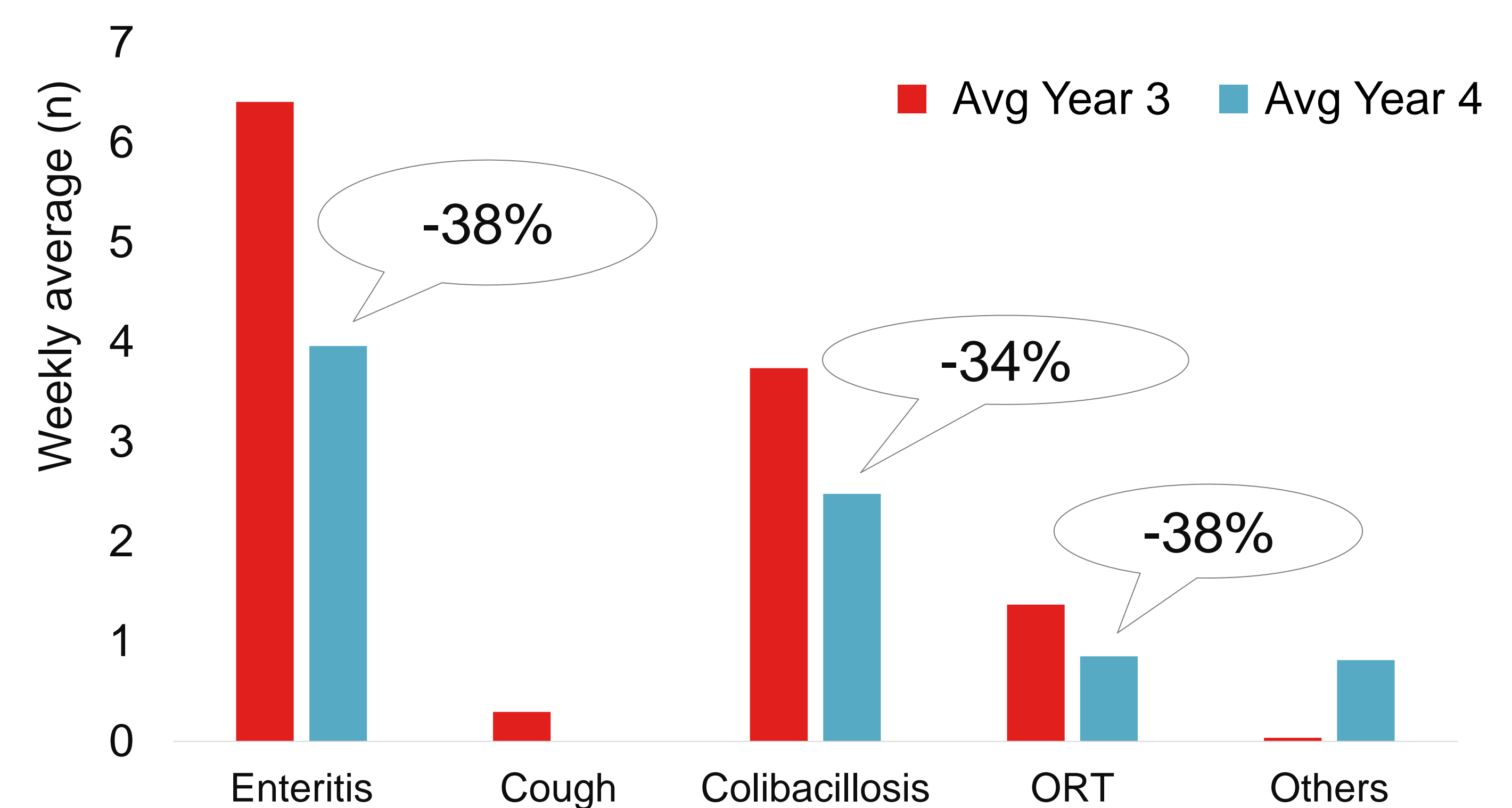


Table 1: Effect on antibiotic use by classes

Beta-lactams	-13% n.s.
Colistin	-44%*
Other antibiotics (tylosin, doxycycline, fluoroquinolones and trimethoprim)	-51%*

* ($p < 0.05$)

CONCLUSION

This trial confirms the hypothesis that addition of *Bacillus* sp. PB6 has a direct effect on antibiotic use. A confounding effect of the ORT vaccine cannot be ruled out, but it is not likely as ORT is a respiratory disease. The data recording of a typical commercial integrator proved sufficient to assess the research question. Further studies in different regions and species other than turkey are needed to extend these findings.