

Usage of Medical Lice Treatments Along the Norwegian Coastline 2023-2024

Background

Investigating treatment intensity

- Sea lice (*Lepeophtheirus salmonis*) are a major parasite in salmon farming.
- Medicinal feed treatments are used to control infestations (oral/medicated feed).
- Concerns: resistance development, sediment residues, effects on non-target organisms.
- "Aim: To identify spatial differences in medical feed treatment intensity along Norway's coast



Hypothesis

The use of medical feed treatments differs between northern and southern coastal zones.

List of medical feed

- Emamectin benzoate
- Diflubenzuron
- Teflubenzuron
- Other compounds



Method

1. Software: R / RStudio
2. Filter dataset for feed-based medicinal treatments and active ingredients from Barentswatch
3. Aggregate counts by facility and production zone.
4. Spatial mapping of treatment events (plot by lat/long).
5. Descriptive bar charts per production zone (mean feed treatments per facility).
6. Correlation analysis between total treatments, feed treatments, and mechanical treatments.
7. One-way ANOVA across production zones + Tukey post-hoc tests.

Study site

The Norwegian Coast with 13 production zones



Results

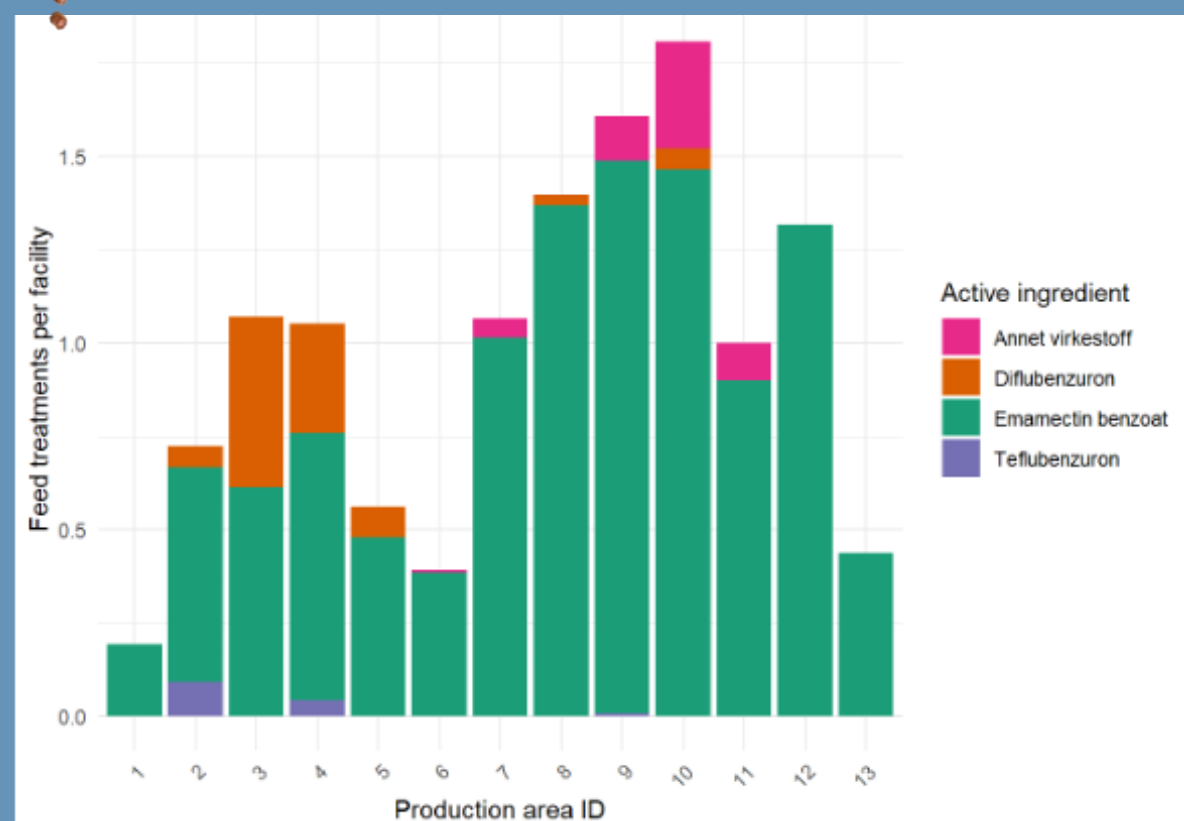


Figure 1 : Number of feed treatments per facility across production areas (IDs 1-13), segmented by active ingredient. Emamectin benzoate is the most frequently used compound across most regions, while Diflubenzuron, Teflubenzuron, and other substances show more variable distribution

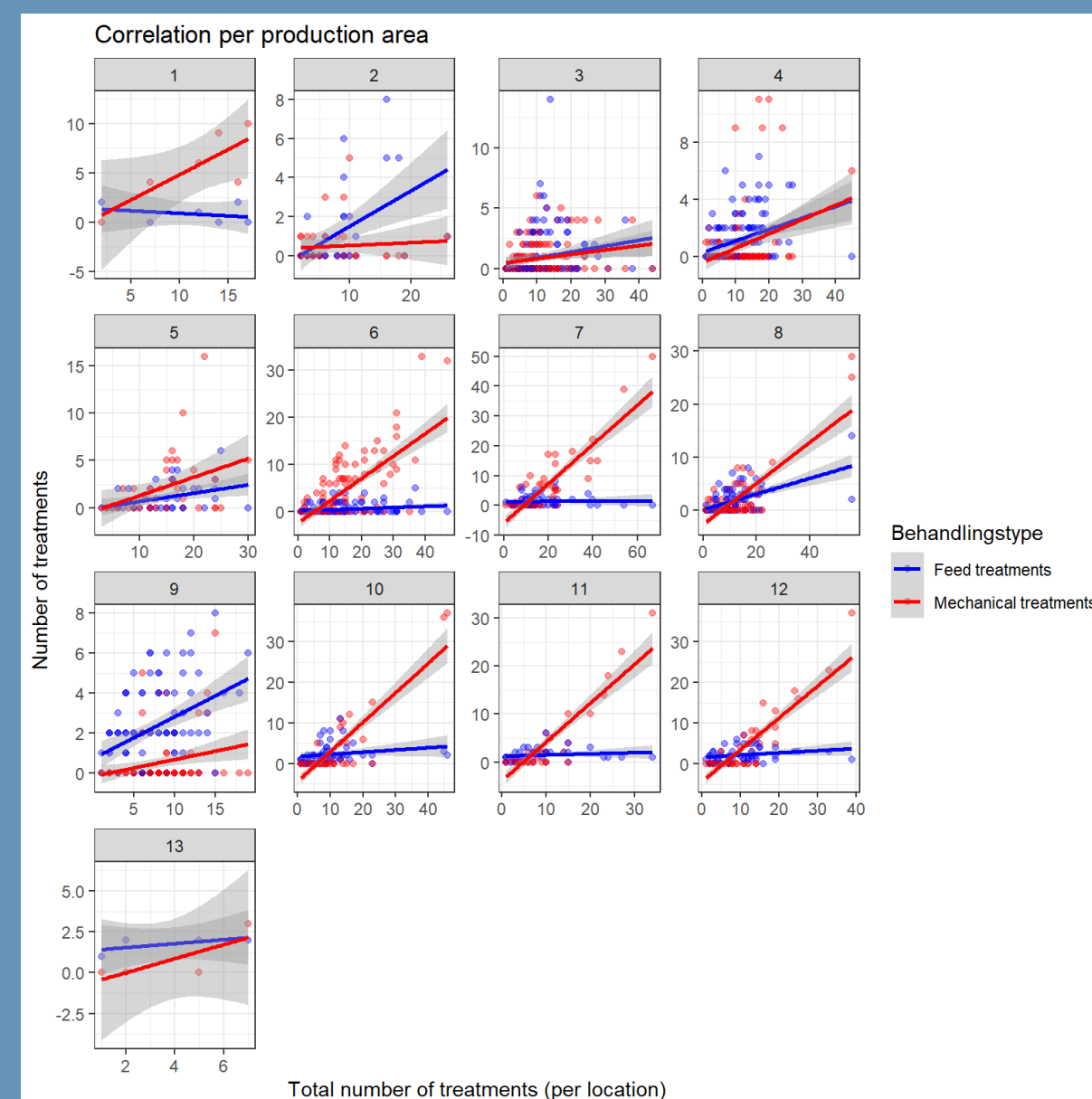


Figure 2 : Correlation plot between medical feed treatments and mechanical treatments across different production areas.

Main Findings

Finding 1: There are significant differences in the use of medical feed treatments between production areas (**ANOVA, $p < 0.001$**).

Finding 2: Northern areas (9, 10, 12, 13) have higher usage than southern areas (3-6).

Finding 3: *Emamectin benzoat* dominates as the active ingredient in all zones, but in area 2-5 there is also significant use of *diflubenzuron*.



Discussion

- The findings support the hypothesis: geographic differences influence treatment strategies, likely due to local conditions.
- Results align with previous studies and suggest that regulations like the traffic light system may shape usage patterns.
- Mechanical treatments dominate overall use, and high treatment rates in northern areas challenge assumptions about low lice pressure in colder waters.

Take home message

Overall, the results indicate a clear geographic pattern in the use of medical lice treatments, with higher treatment intensity in the north.

References

BarentsWatch. (u. å.). Last ned fiskehelserapporter | Data - Fish Health (treatments). Hentet 14. november 2025 fra [Din avsnittstekst](#)
Havforskningsinstituttet, (2024). "Kunnskapstatus - Legemidler i fiskeoppdrett 2024" Hentet 14. november 2025



Mathilde Veivåg



Kim Roar Nekkøy



Martin Skaar



Emilie Askeland



Karina Poplavskaia