



Studying how to improve farm sustainability and animal production efficiency

Increasing the efficiency of **animal production** (i.e. improving herd health, milk production, and milk nutrients and components like fat and protein, etc.) can often require more cows or more land to produce more feed. But this strategy can be expensive and unreliable, and enhances the ecological and emissions **footprint** of the dairy sector. That's why Wolfe's Neck Center studied how a **kelp-based mineral supplement** affects milk production efficiency, as it could reduce an increasing need for land-based resources that can negatively impact the environment while creating new market opportunities for seaweed farmers.

What we did



- We fed two groups of eight cows the same base diet, but fed one group a traditional mineral supplement that they normally receive (no kelp) and fed the other group a **kelp-based mineral mix** instead.
- We measured milk yield, milk contents (fat, protein, lactose, minerals, and nutrients), and tested the cows' blood to monitor their health.

What we found

- We found that milk production stayed about the same in both groups, but that the kelp-fed cows' milk had significantly higher levels of **iodine**—an element that kelp has a lot of and is crucial for human health.
- **Sodium** was also slightly higher in the kelp-fed cows' milk, another critical element in small amounts.

Why it matters



- Our findings show that kelp-based mineral supplements can raise iodine milk levels, enough to question if it could exceed human safety limits. As up to **83%** of organic dairies in the Northeast feed “kelp meal” supplements, this work provides **real trial data** on a common mineral supplement use case to help farmers decide what to feed their herds and demonstrate measured outcomes of this feed strategy.
- **Future research** can help scientists understand how to **control the iodine and sodium levels** from the milk of cows eating kelp-based mineral supplements to develop more sustainable and healthy supplement options.