



6 GOATS AND A UTILITY POLE

Dr. Kristin Haas

State Veterinarian

**Vermont Agency of Agriculture Food and
Markets**

NEUSAHA 2022, Ithaca, NY



Case Summary

- **Early August 2021 > owner of small dairy goat herd reports ingestion of copper naphthenate by multiple goats, resulting in clinical illness in several animals (lethargy, neurologic, GI abnormalities)**
 - **Goats grazing in public right-of-way**
 - **Exposed “bag of leftover utility pole preservative” in the right of way**
 - **Three of the six goats did what goats do**
- **Owner had been voluntarily dumping milk since incident in late July**
- **Contacted VT Agency of Agriculture to inquire about recourse against company**
- **VT Agency of Ag dairy program manager identified this as a concern and flagged the issue for internal discussion among: animal health, dairy, and pesticide regulators, and general counsel**

The many faces of copper naphthenate...



Osmose COP-R-PLASTIC WOOD PRESERVING COMPOUND

- Bag of goodies left in 2005
- Utility company responsible for application subcontracted the application to a company that changed hands and then subsequently went out of business
- Copper naphthenate is regulated as a pesticide
- “But its not supposed to be in food”

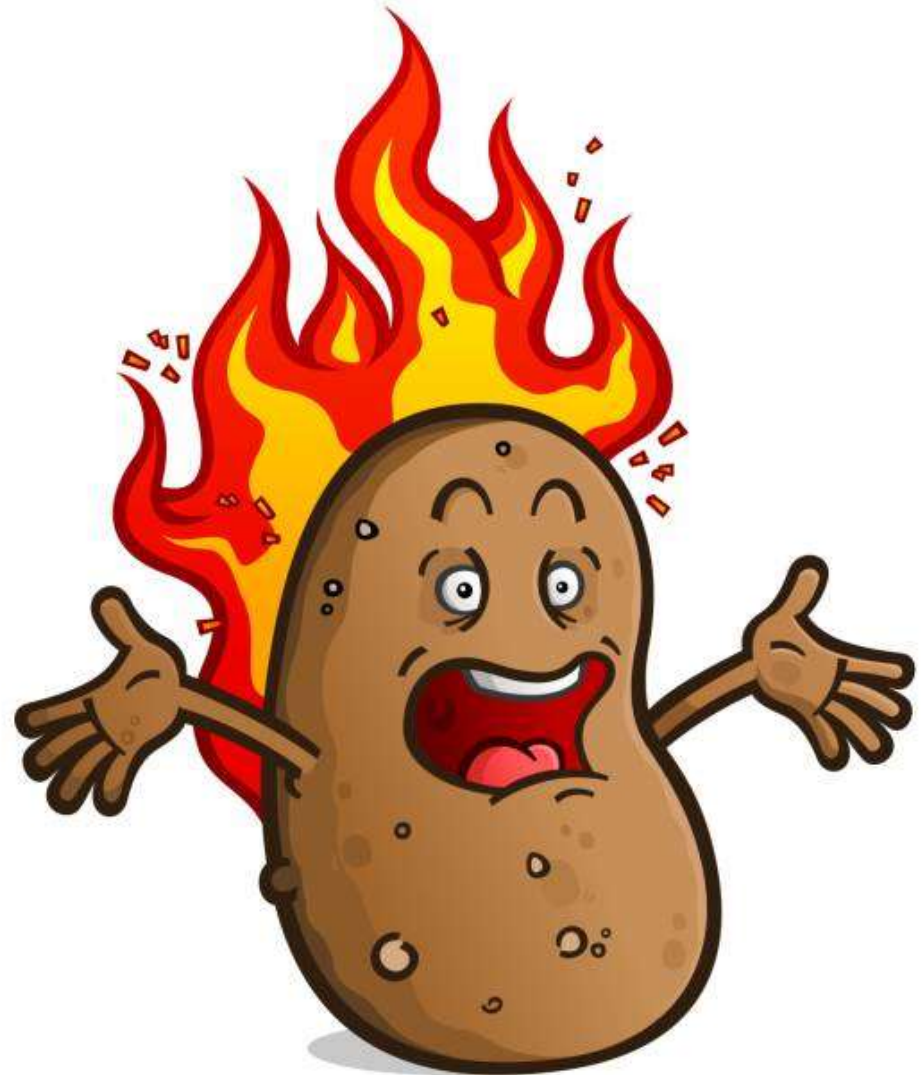
From MSDS:

SECTION VIII - CONTROL MEASURES

- **RESPIRATORY PROTECTION:** Normally not needed. If TLV of any component is exceeded, a NIOSH/MSHA self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure modes is advised. Contact industrial hygienist.
- **VENTILATION REQUIREMENTS:** Yes
- **LOCAL EXHAUST:** Normally sufficient
- **MECHANICAL:** In enclosed spaces.
- **PROTECTIVE GLOVES:** PVA, PVC or neoprene or other chemically resistant gloves.
- **EYE PROTECTION:** Wear face shield or goggles.
- **OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** As necessary to avoid skin contact.
- **WORK/HYGIENIC PRACTICES:** Wash hands before eating, smoking, or after work. Launder clothing before reuse.

The fun began...

- **FDA – milk safety and food safety branches**
- **EPA**
- **VT Dept. of Health**
- **Cornell Toxicology lab**
- **California Animal Health and Food Safety Laboratory**
- **University of Guelph, Animal Health laboratory; Agriculture and Food laboratory**
- **Avomeen Laboratory**
- **FARAD**
- **Solutions in Science toxicologist**



Progress – December 2021

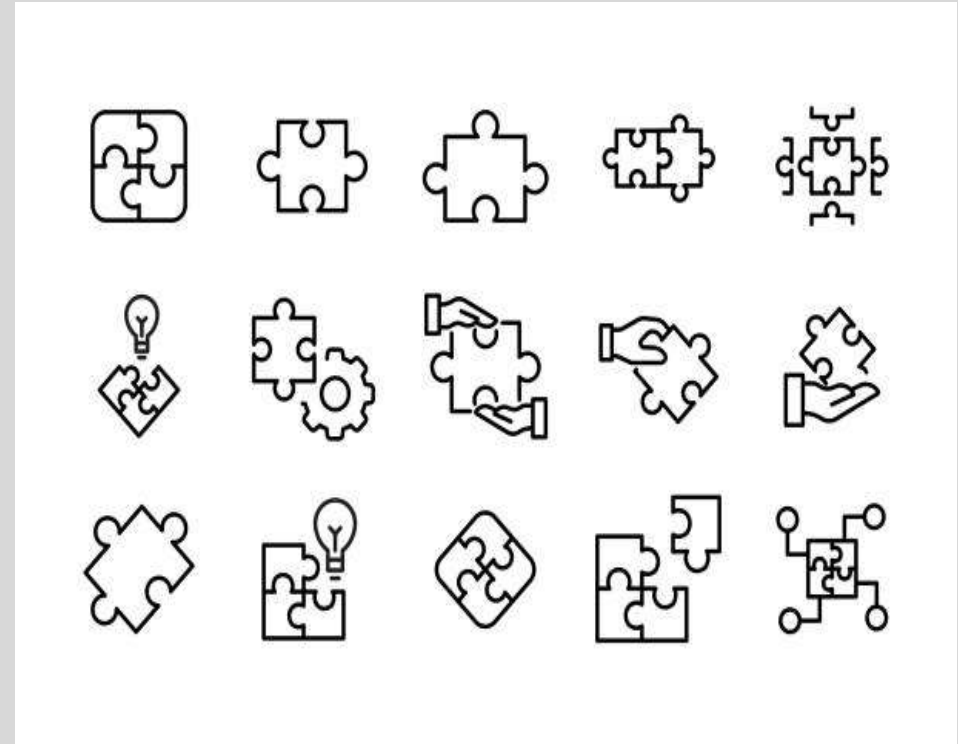
- **Office of Community Health and Hazard Assessment (OCHHA); Agency for Toxic Substances and Disease Registry (ATSDR); Centers for Disease Control and Prevention (CDC)**
 - **Issuance of December 2021 technical memo**
 - **ATSDR reviewed published toxicokinetic and toxicological information to predict residence times for copper naphthenate.**
 - **ATSDR/Simulation Science Section/Office of Innovation and Analytics (OIA) used “worst case scenario” assumptions:**
 - **Each goat ingested more than what was likely**
 - **All ingested product was absorbed**
 - **All absorbed product partitioned into milk**
 - **Even though major data gaps were identified on the toxicokinetic properties of copper naphthenate, established computational approaches such as “read-across”, which entails the use of available information from analogous substances to predict properties of substance(s) of concern, were applied to fill these data gaps**

Resolution – April 2022

- **Literature search**
- **“Read-across” – use what is known about analogous substances and apply it to substance of concern to draw conclusions**
- **Modeling**
- **We used copper as the “known” and relied on**
 - **Estimated copper clearance times using worst case scenario assumptions**
 - **Established “safe” levels for copper in goat milk**
- **Quarantine on 2/3 lactating goats was lifted December 2021**
- **Quarantine on 3rd goat was lifted April 2022 following milk analysis post-kidding**
- **ATSDR**
 - **Provided technical assistance in response to request from VT Ag**
 - **Findings do not represent a position or health-based level for copper naphthenate**
 - **Findings are not shareable outside of VT Ag**

Novel Food Safety Scenario Regulatory Challenges

- Inadequate body of science/research
- When contemplating a novel food safety situation, do you default to “safe” or “unsafe”?
- Do you/how do you “unknow” something?
- Precedent setting with impact on future cases because “this happens all the time”
- Quarantine issuance – good stop-gap at the outset, but what will be the determinant for release?
- Interacting with politicians and attorneys – no animal health or food safety background
- Novel diagnostics – don’t exist or impractical because cost-prohibitive
- Exposure details unclear or unknown/sample types unavailable



Thank you

