

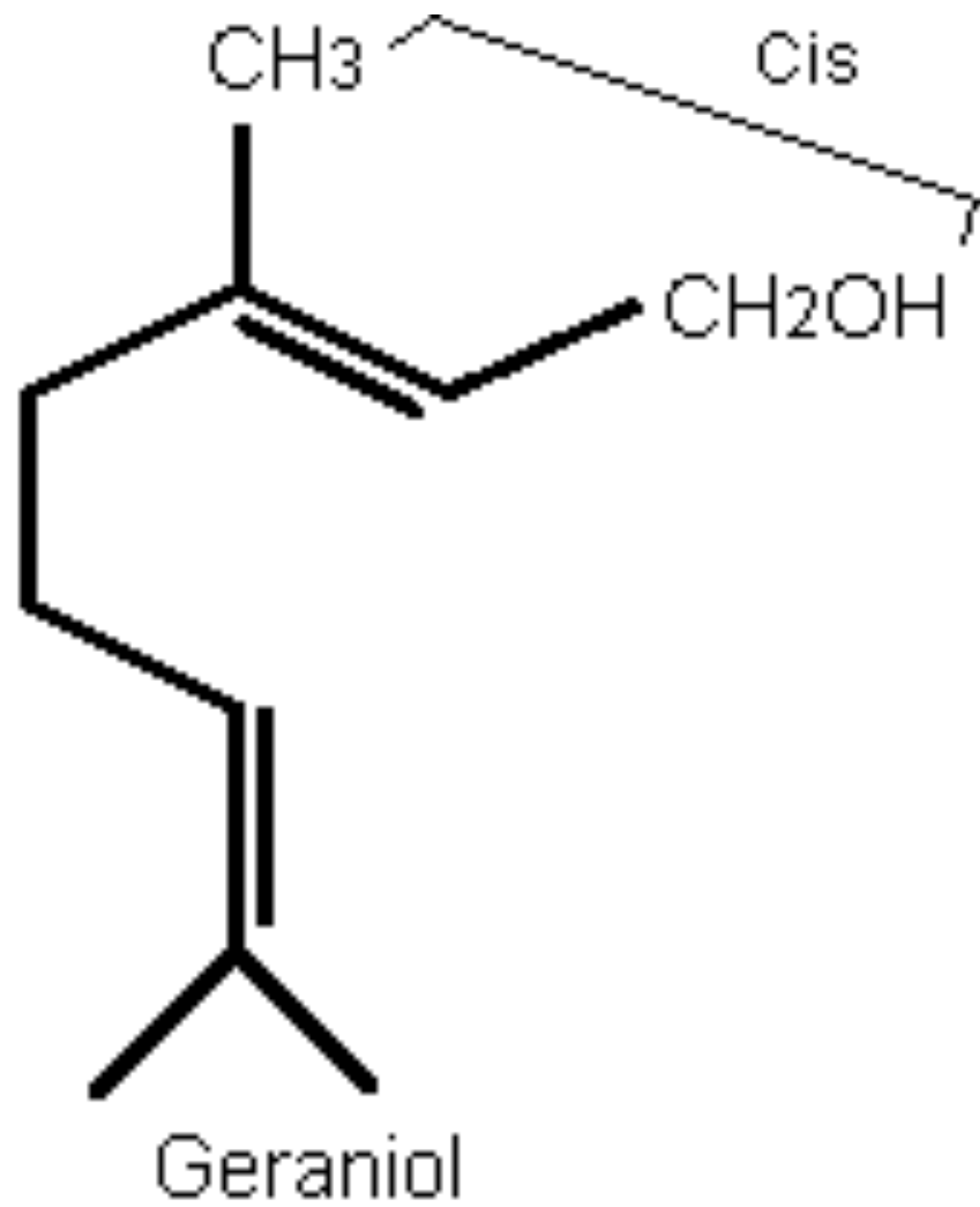
# NAVIGATING THE FLAVOR & FRAGRANCE SUPPLY CHAIN

NATURAL OILS & AROMACHEMICALS

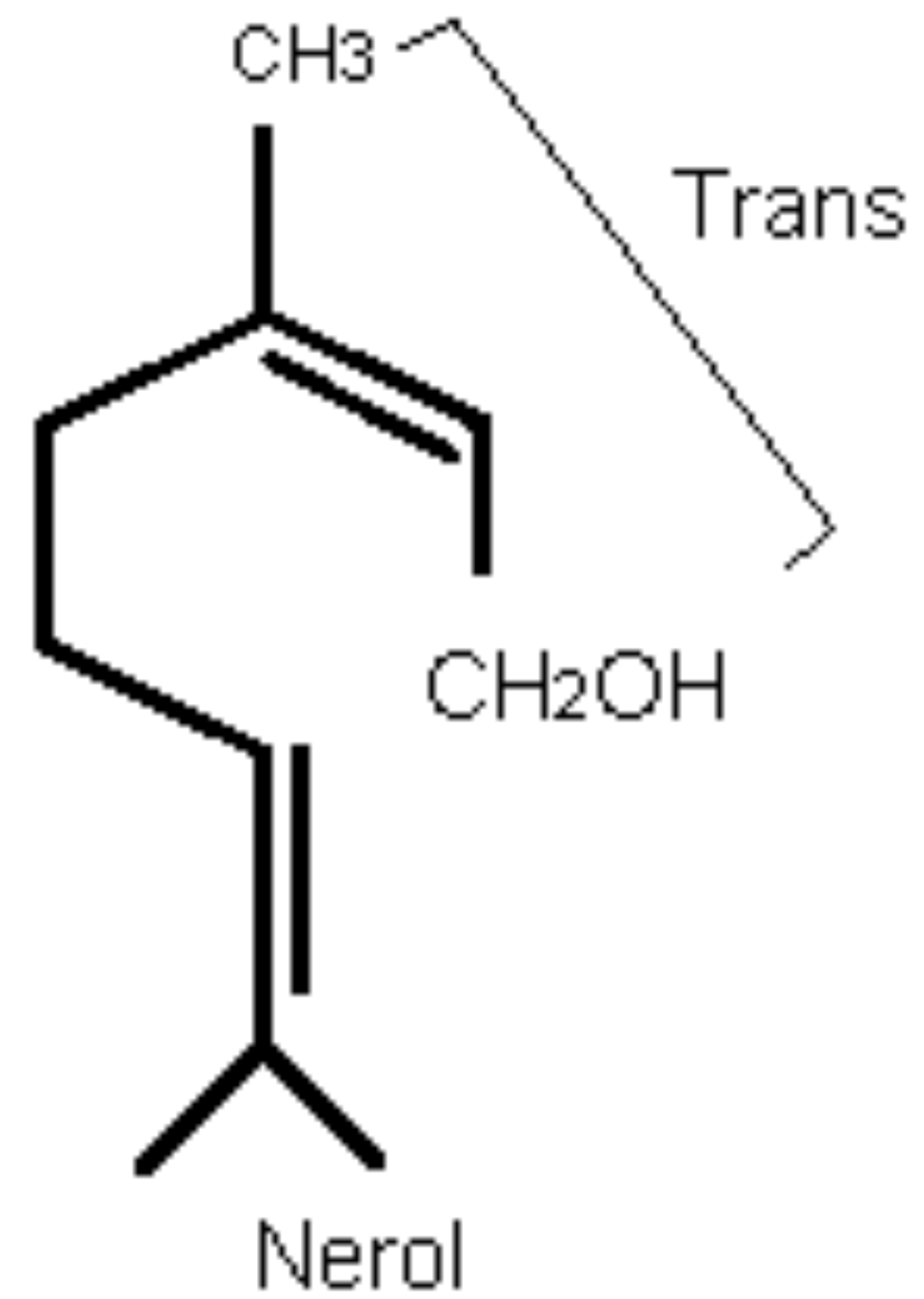




# GERANIOL - AN EXAMPLE



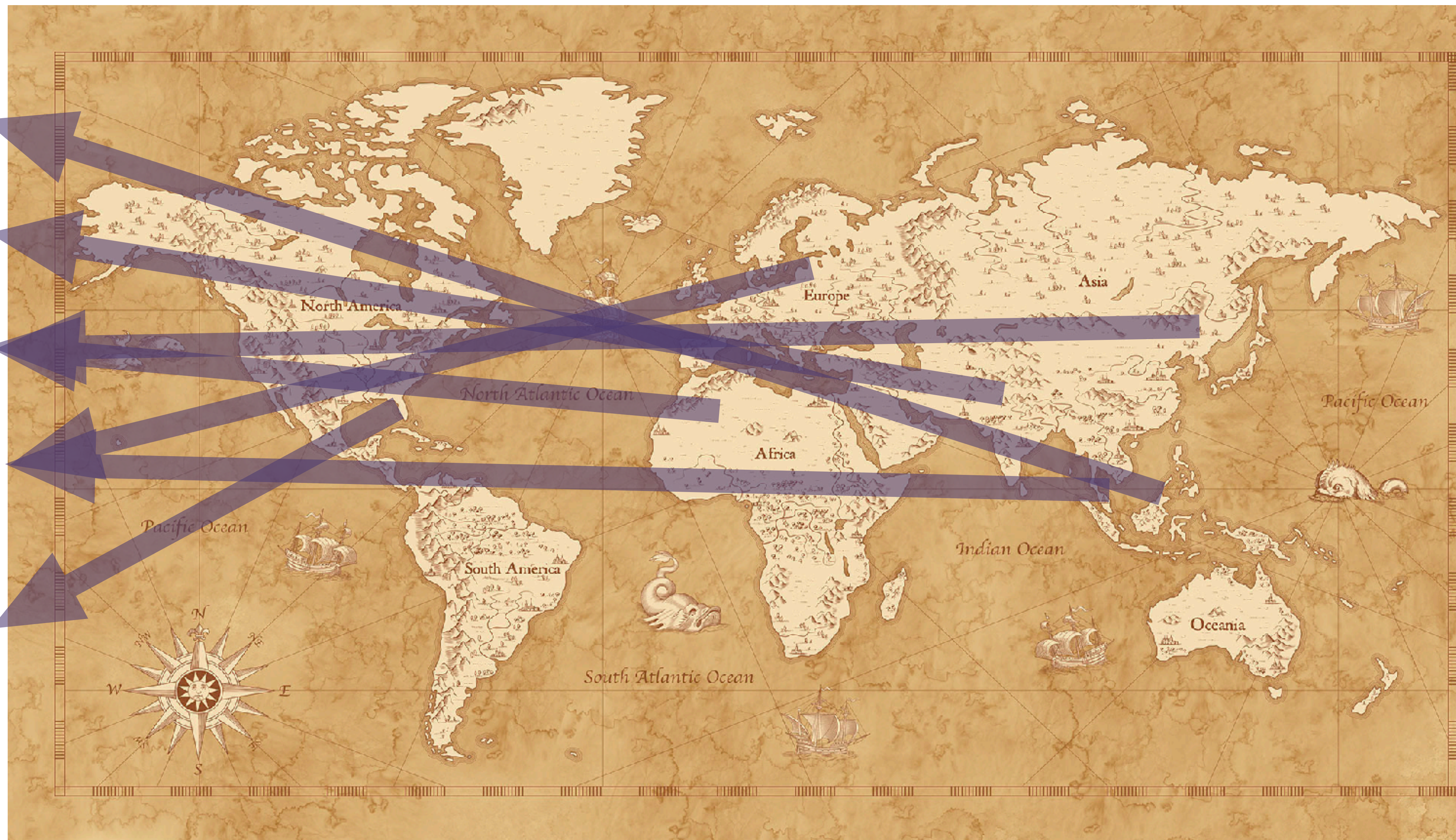
Or





# THE SUPPLY CHAIN OF GERANIOL

- Citronella Oil
- Palmarosa Oil
- Geranium Oil
- Citral
- Crude Sulfate Turpentine (CST)



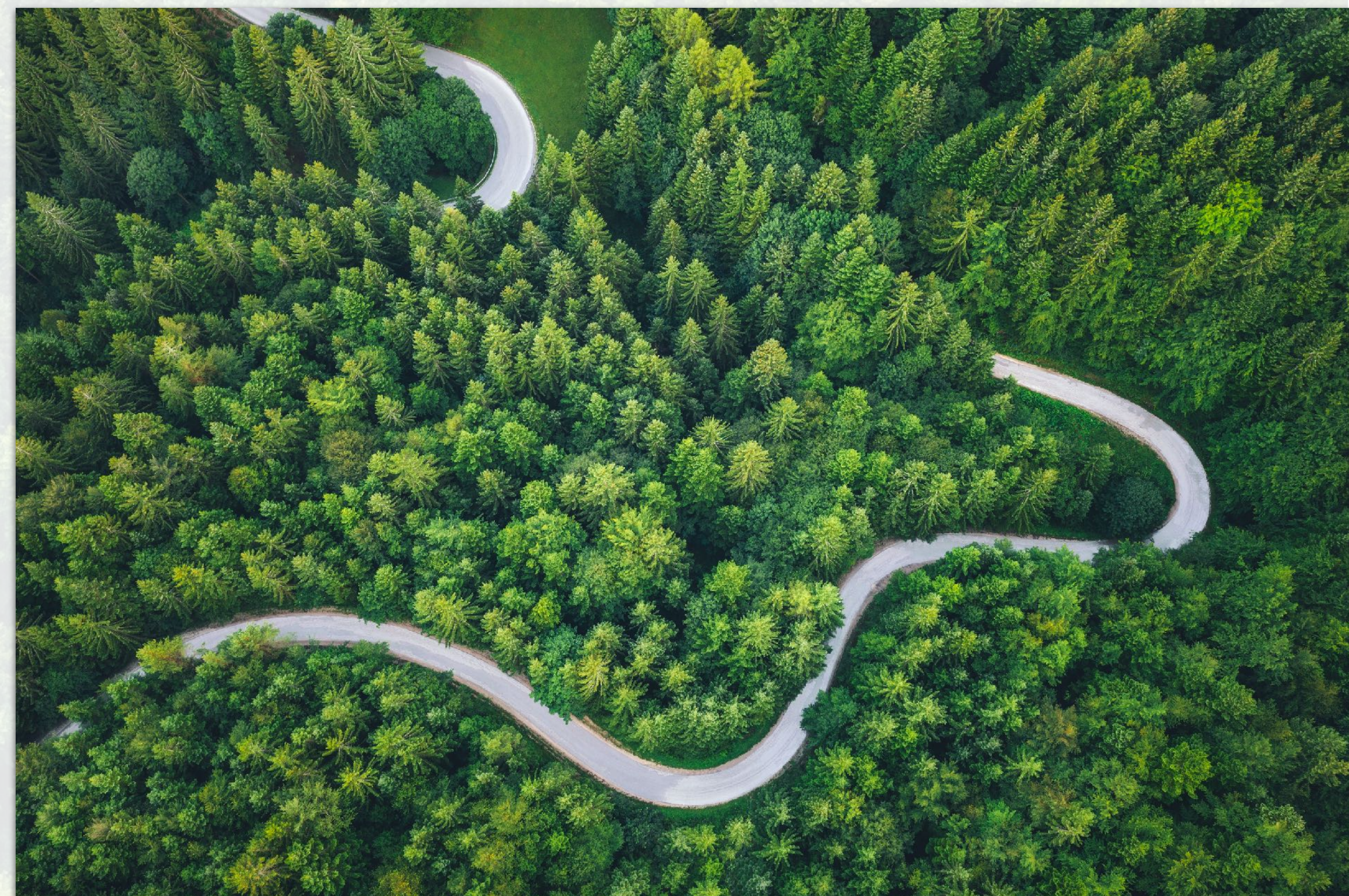
# RECENT DISRUPTIONS TO THE SUPPLY CHAIN





# RUSSIA-UKRAINE CONFLICT

- As the conflict in Ukraine continues to unfold, we are seeing more and more global consequences within our industry.
  - Shipping out of Russia is essentially shut down for the foreseeable future.
  - Products such as sage, coriander, mustard seed, and Siberian fir are at a standstill.





# CORONAVIRUS PANDEMIC

- It should be well understood at this point that the Coronavirus has had, and continues to have, a profound effect on supply chains everywhere.
- Even as restrictions are winding down in 2022, Coronavirus and its variants played a major role in building consumer spending habits.
  - Fine Fragrances
  - At home dining
  - Aromatherapy
  - Outdoor activities





# LABOR SHORTAGES

- Labor shortages as a result of the pandemic continue to be an issue for many shipping companies, manufacturers, and other vital services.





# AGRICULTURAL SHIFTS & ENVIRONMENTAL CHANGES

- The Intergovernmental Panel on Climate Change (IPCC) released its report in late 2021 that indicated major long-lasting changes for global temperatures & climates.
- In the American south, freezing temperatures have wrought havoc on Texas, Florida, Georgia, and other important growing regions.







# CHINA TARIFFS

- In the wake of the Trump presidency, tariffs of up to 25% were placed on Chinese goods. These continue to play a major role within the domestic F&F trade.



# THE UTILITY OF ALTERNATIVE SOURCING





# BENZALDEHYDE

## Benzaldehyde Natural

Benzaldehyde is mainly derived from Bitter Almond Oil, though it has numerous sources in the natural world.

## Benzaldehyde

Derived from toluene; the structure of synthetic Benzaldehyde is extremely simple and easy to replicate.





# METHYL SALICYLATE

## Wintergreen

The wintergreen herb is mainly produced in China, though it was popularized in Canada and the northern United States.

## Methyl Salicylate

Derived from Salicylic Acid, and nearly identical to wintergreen oil contains around 95% pure natural methyl salicylate.





# MENTHOL

## **Menthol - Peppermint/Cornmint**

China, India, and the US are all major producers of peppermint and cornmint, which are crucial for natural Menthol production.

## **Menthol Synthetic**

Menthol is a component of the citral value chain. Its production is highly efficient, sustainable, and independent from crop yields or weather conditions.





## FINAL WORDS

- What's happening in the F&F industry is just a microcosm of modern global economic trends.
- The supply chain is always changing and has always been a challenge to navigate. Despite this, there are solutions:
  - Multiple sourcing locations
  - Alternative products
  - Well-maintained inventory
  - Direct investment into supply chain

**THE F&F BUSINESS:**  
**WHERE THE WORLD TRULY COMES TO ITS SENSES.**

