

# Traditional color vs Natu.Red



## COMPARISON OF TRADITIONAL SUPPLY CHAINS AND CHROMOLOGICS' PRODUCTION PLATFORM

### SYNTHETIC COLOR SUPPLY CHAIN

#### Oil Extraction

Most synthetic food colors come from **petroleum**



#### Processing

The **oil** needs to be processed



#### Chemistry

**Chemical synthesis** is used to produce colors



### PLANT-BASED COLOR & CARMINE SUPPLY CHAIN

#### Farmland

Raw materials (e.g. cochineal, beetroots) for food color production are **farmland intensive**



#### Crop Yield

The crop yield depends on both seasonality and the growth time, and is affected by **climate change**



#### Harvest

The harvest method of crops varies from **handpicking** to **industrialized processes**



#### Processing

**Extraction and drying** are some of the steps involved in producing food colors



### CHROMOLOGICS - A SUSTAINABLE PRODUCTION PLATFORM

#### Innoculation

The fungus is added to the **fermentation medium**



#### Fermentation

The red molecule is **produced by the fungus** during fermentation



#### Harvesting

The downstream process involves only **filtration and drying**



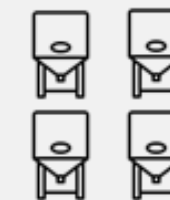
#### Farmland

- Reduced need for farmland
- Independent of seasonality, climate, etc.



#### Transparency

- Simple and transparent supply chain - easy to monitor labor conditions and safety
- Entire production can be done under one roof
- Reliable supply chain and price stability



#### Flexibility

- Bioreactors allow for flexibility
- Production can be set up where renewable energy is abundant or in proximity to customers to reduce GHG footprint