GROWING AND PROCESSING CANNABIS

Josh Genderson
President & CEO, Holistic Industries
PROPAGATION: WHERE IT ALL BEGINS
HYDROPONIC MEDIUM

• Coco Coir
  • Made from coconut husk
  • Optimal water retention

• Rockwool
  • Made from molten rock spun into a bundles
  • Lower labor costs

• Clay pellets
  • Made from clay
  • Very little retention enables more complete control
STAGE 2 : VEGATATIVE GROWTH
VEGATATIVE LIGHTING

• Ceramic Metal Halide
  • Efficient
  • Low heat output

• T5 Fluorescent
  • Low power output
  • Low heat output

• LED
  • Optimal spectrum
  • Low heat output
FLOWERING
DOUBLE ENDED HPS

- Excellent production
- Red spectrum great for THC production
- Creates heat
- Excess heat must be counteracted with HVAC
FLOWER LIGHTING
LED LIGHTING

- Optimal spectrum
- Efficiency
- No heat
  - Air cooled
  - Water cooled
- Not proven for cannabis
FLOOD AND DRAIN
• Longer flowering time
• More energetic

• Shorter flowering time
• Larger, denser flower
OUTDOOR CULTIVATION
GREENHOUSE CULTIVATION
INDOOR CULTIVATION
CARBON FOOTPRINT

• Cogen
  • Producing power locally using natural gas/propane
  • Reusing heat produced
  • Utilizing CO2 produced
• Renewable Energy
  • Solar power
  • Wind power
• Recirculating irrigation systems
• Water catchment
• Cutting power use
  • LED lighting
  • Water chilled HVAC
The processes of extraction and enrichment removes impurities and creates a more concentrated and versatile product.
CONCENTRATES

• Fastest growing segment of the market
  • Outpacing flowers and edibles in 2016
  • 125% growth in Colorado
  • 60% growth in Washington state

• New York, Minnesota and Pennsylvania strictly concentrates

• Discreet

• Potent

• Versatile
CHEMISTRY

Cannabinoids- Over 70 found in Cannabis, biologically active

THC
Psychoactive, analgesic, sedative, anti-inflammatory, appetite stimulant

CBD
Non-psychoactive, anti-inflammatory, analgesic, anticonvulsant

Terpenes- Aromatic flavor compounds, desirable organoleptic properties

Myrcene
Earth, Herbal, Citrus

Pinene
Pine, Medicinal

Limonene
Citrus, Floral

Caryophyllene
Peppery, spicy
EXTRACTION TECHNIQUES

• Supercritical Fluid Solvent-less, nonhazardous

• Butane Terpene rich, high purity

• Water Solvent-less, terpene rich

• Alcohol Efficient, low cost

• Distillation Efficient, high purity, possible to preserve terpenes

• Isolation very high purity (97-99%)

• Pressing Rosin high purity, maintains terpenes

Products

Bubble Hash
Butane Hash Oil
CO2 Oil
Rick Simpson Oil
Rosin
Sha7er
Sugar
Wax
Tinctures
Sublinguals