

Let's make  
something new.



# FREEZE DRY VS. REV™

Tired of waiting hours for your freeze-dried product to complete it's drying cycle?  
Go from fresh to dry faster with REV vacuum microwave dehydration from EnWave.

## Dry Faster with REV

The REV process can take products from fresh to dry in as little as 30 minutes. Time varies depending on the initial moisture content, however, the process is generally completed in 90 minutes or less. This process does not require to lacerate the skins of non-porous fruits and vegetables.

## Flexible Moisture

REV technology is a uniform, volumetric drying process that provides precise moisture control during the entire drying process.

Drying occurs from the inside out which means that whether you stop at 20% moisture or 1% moisture, your product will be consistently dry all the way through. This also allows for a range of product textures from chewy to crunchy that is currently unavailable with Freeze Drying.

The REV drying process is best paired with air drying pre-treatment for many fruit and vegetable products as noted in the following tables.

DRYING TIMES	
DRYING METHOD	DRYING TIME
Air Drying	13 hours
Air Drying + REV Drying	2 - 3 hours + 30 minutes
Freeze Drying	72 hours



*\*The chart above is a data set for pineapple*

	FREEZE DRYING	REV DRYING
Technology	Vacuum, Heated Trays	Vacuum Microwave
Processing Time:	20 - 72 hours	30 - 90 minutes
Processing Type:	Batch	Batch or Continuous
Colour Retention:	Bleached Look	Near Natural
Delivery Method:	Rack for Trays	Conveyor for Trays or Rotating Drums
Moisture Control:	Variable and uniform from 4%-1%	Variable and uniform at any percentage (40% - 2%)



## Colour & Flavour

Keep your fruits and vegetables looking natural. The REV process is incredibly gentle and retains the natural colours and flavours of products due to moderate temperatures and oxygen free drying.

## Low Temperature

REV drying occurs under vacuum and at a pressure where water boils at 25° C.

Unless specifically desired, temperatures stay at a moderate level to prevent cooking and allow the cell structures of the product to remain intact which keeps colours, flavours, and nutrients.

### ASCORBIC ACID

DRYING METHOD	ASCORBIC ACID RETENTION
Air Drying	188 mg/100gr
REV Drying	325 mg/100gr
Freeze Drying	367 mg/100gr

*\*The chart above is a data set for pineapple*

### ANTIOXIDANT ACTIVITY

DRYING METHOD	ANTIOXIDANT ACTIVITY	
	ORAC	ABTS
	μmol Trolox Equivalent /g solid	
Air Drying	63 μmol	12 μmol
REV Drying	62 μmol	18 μmol
Freeze Drying	62 μmol	17 μmol

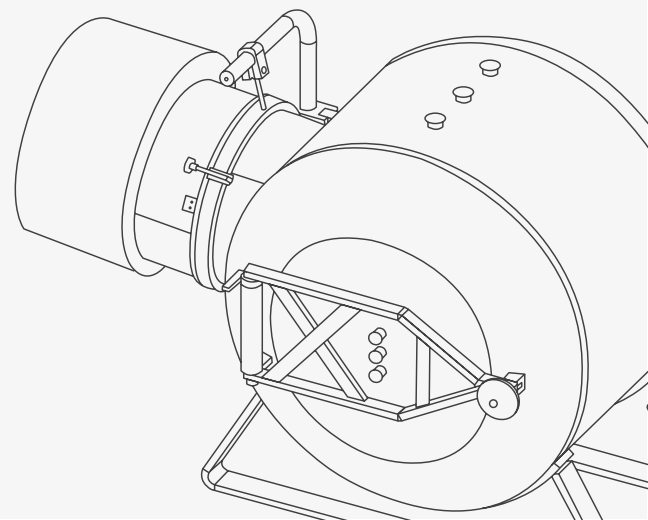


*\*The chart above is a data set for pineapple*

## Want to see this comparison for your product?

Work with our team of experts to run a series of product trials at our Canadian pilot plant facility. Gain access to our extensive library of REV dried protocols and processing parameters and leave with a batch of samples to taste and review.

Email [info@enwave.net](mailto:info@enwave.net) for details on all of our product development packages.





# FREEZE DRY VS. REV™

Tired of waiting hours for your freeze-dried product to complete it's drying cycle?  
Dry faster with REV vacuum microwave dehydration from EnWave.

## PINEAPPLES

	AIR DRYING	FREEZE DRYING	AIR DRY + REV DRY
Drying Time (hours):	13 hours	72 hours	2 - 3 hours + 30 min
Moisture (%)	6.7 %	5 %	7.1 %
Density (G/ml)	1.12	0.15	0.36
Rehydration Time (min):	160 min	45 min	70 min
Antioxidant Activity: <small>(μmol Trolox Equivalent / g solid) / ABTS</small>	12	17	18
Vitamin C Retention: <small>(% Retention)</small>	77 %	100 %	91 %

## STRAWBERRIES

	AIR DRYING	FREEZE DRYING	AIR DRY + REV DRY
Drying Time (hours):	22 hours	72 hours	2 - 5 hours + 30 - 60 minutes
Moisture (%)	10 %	10 %	9.5 %
Density (G/ml)	0.96	0.11	0.4
Rehydration Time (min):	185 min	50 min	90 min
Antioxidant Activity: <small>(μmol Trolox Equivalent / g solid) / ABTS</small>	77	135	101
Vitamin C Retention: <small>(% Retention)</small>	25 %	90 %	80 %



# FREEZE DRY VS. REV™

Tired of waiting hours for your freeze-dried product to complete it’s drying cycle?  
Dry faster with REV vacuum microwave dehydration from EnWave.

BLUEBERRIES			
	AIR DRYING	FREEZE DRYING	AIR DRY + REV DRY
Drying Time (hours):	18 hours	72 hours	2 - 5 hours + 30 - 60 minutes
Moisture (%)	15 %	15 %	13 %
Density (G/ml)	1.1	0.3	0.4
Rehydration Time (min):	480 min	480 min	355 min
Antioxidant Activity: ( $\mu$ mol Trolox Equivalent / g solid) / ABTS	102	133	102
Vitamin C Retention: (% Retention)	60 %	72 %	67 %

