

# BIological Research

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This brief review of the 72 Hour Fresh Juice Stability Study encompasses:

- A. Three of the five juicers used in the study
- B. The time period of just post-juicing through the end of the second hour with data collected at the end of each 15 minute period
- C. Apples and carrots juiced through each of the three reviewed juicers
- D. The parameters - 1. Temperature; 2.pH; and, 3. Carbohydrate index

JUICER SELECTION: The representative juicer types selected for this review include :

- A. GP-E1503 "Green Power Gold" - a one-step, twin-gear triturating type juicer with magnetic and Far infrared technologies
- B. 2-Step Process Juicer - step one is grinding of the produce, and step two includes pressing the juice from the pulp with an hydraulic press
- C. Masticating - a one-step, auger-feed type juicer

TIME PERIOD: Most juicer advertisements encourage consumption of fresh squeezed juices just after juicing. It is commonly recognized that many consumers desire to consume their juice leisurely, perhaps taking over an hour. Based upon both manufacturer recommendation and consumer use, this review covers the period of time most generally accepted as common for consumption of fresh squeezed juice. Fifteen minute test periods were established based upon observation of fifty different individuals and their consumption pattern.

PRODUCE SELECTION: Apples and carrots were the produce of choice for this study. Each represents an opposite end of the produce spectrum.

Apples - a soft, pulpy fruit which is difficult to obtain a pulp-free juice from  
Carrots -a fibrous vegetable that can be difficult to grind without building up heat in the juicer and juice

Both are recognized as the most often juiced members of the produce family.

Commercial grades of apples and carrots were selected from a grocery-chain store. It was determined that more people would choose a commercial grade of produce to juice due to:

- A. Cost
- B. Availability
- C. Organic status determines no pesticide or herbicidal residues; however, the nutritional profile may or may not be superior to commercial grade

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## PARAMETERS:

### Temperature

Juices are heated by the heat build-up created by the speed of the grinding / cutting / masticating mechanism of the juicer. Heat accumulation in the juice exacerbates:

- A. DNA, enzymatic and mineral degeneration
- B. Bacteria proliferation
- C. Fermentation process
- D. More acidic pH

### pH

A higher pH in juice indicates a greater concentration of oxygen present. Minerals such as calcium are more readily absorbed and utilized by the body if they are bound to oxygen. Bio-available minerals are a great part of the reason for consuming fresh squeezed juice. Therefore, fresh squeezed juices need to be as alkaline as possible, and remain that way as long as possible.

### Carbohydrate index

Measures both sugar level and mineral solids. The higher the carbohydrate index:

- A. The greater concentration of minerals present
- B. More complex sugars are present to be used by the body
- C. Sweet taste of the juice increases
- D. Overall stability of the juice increases

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## Apple

-Juiced through 3 different juicers  
-Initial temperature of fruit prior to juicing - 15.75 °C

### Temperature of juice

	just after juicing:		at end of two hours:
GP-E1503 "Gold":	... 15.8 °C	... ..	16.1 °C
2-step:	... 22.9 °C	... ..	20.2 °C
Mastication:	... 17.4 °C	... ..	18.0 °C

### pH of juice

	just after juicing		at end of two hours:
GP-E1503 "Gold":	... 4.59	... ..	4.25
2-step :	... 4.10	... ..	3.89
Mastication:	... 4.28	... ..	4.20

### Carbohydrate index of juice :

	just after juicing:		at end of two hours:
GP-E1503 "Gold":	... 13.6	... ..	13.3
2-step:	... 13.4	... ..	12.6
Mastication:	... 13.6	... ..	13.0

## Carrot

-Juiced through 3 different juicers  
-Initial temperature of vegetable prior to juicing - 18.7 °C

### Temperature of juice

	just after juicing:		at end of two hours:
GP-E1503 "Gold":	... 19.5 °C	... ..	20.8 °C
2-Step :	... 23.8 °C	... ..	22.0 °C
Mastication:	... 21.4 °C	... ..	21.2 °C

### pH of juice

	just after juicing:		at end of two hours:
GP-E1503 "Gold":	... 6.14 ... ..		6.15
2-step:	... 5.82 ... ..		5.99
Masticating:	... 5.90 ... ..		6.17

### Carbohydrate index of juice:

	just after juicing:		at end of two hours:
GP-E1503 "Gold":	... 9.0	... ..	8.7
2-step:	... 8.6	... ..	7.8
Masticating:	... 9.1	... ..	8.4