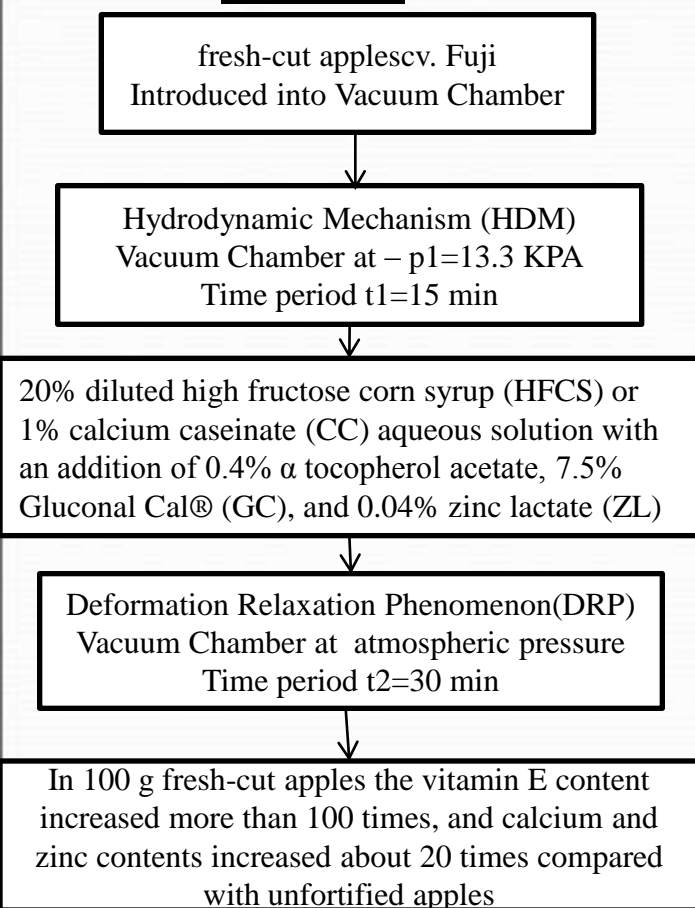


**vacuum impregnation to modify health-promoting properties of fresh-cut apples  
cv. Fuji**

Raw Material	Composition of Vacuum Impregnation Solutions	Process Parameters	Effect
fresh-cut apples cv. Fuji	20% diluted high fructose corn syrup (HFCS) or 1% calcium caseinate (CC) aqueous solution with an addition of 0.4% $\alpha$ tocopherol acetate, 7.5% Gluconal Cal® (GC), and 0.04% zinc lactate (ZL)	$p_1$ 13.3 kPa $t_1$ 15 min $t_2$ 30 min	In 100 g fresh-cut apples the vitamin E content increased more than 100 times, and calcium and zinc contents increased about 20 times compared with unfortified apples

**Flow Chart**



**Vacuum Impregnation Setup**



**DOWNLOAD  
CATALOG**

**Result:**

In 100 g fresh-cut apples the vitamin E content increased more than 100 times, and calcium and zinc contents increased about 20 times compared with unfortified apples. In this respect, the introduction of vitamin E to fruit and vegetables, particularly as they typically contain its slight amounts, seems to be an interesting alternative to supplements. During the enrichment of fresh-cut apples with vitamin E as well as calcium and zinc Park et al. (2005) obtained a 100-fold greater content of vitamin E per 100 g of apples and approximately 20-fold higher contents of calcium and zinc in apples in comparison to apples before impregnation.

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