



# 4

## (The 4th International Conference on Agro and Food Physics)

2000 5 16 5 20  
4  
Renaissance polat  
The Intetnational Society of Food Phycis  
1992 가 (Hungary)  
(budapest)  
1994  
1996 (Romania)  
(Bucharest) , 1998 (Poland)  
(Lublin)

가  
6 30  
가 , 65  
7 1)  
(rheology of foodstuff), 2)  
(foodstuff radioactivity and  
radiation method), 3) NIR-NIT  
(non-destructive physical methods such as  
NIR-NIT, NMR, and INAA), 4) 가  
(physical methods such as heating,  
microwaving, and irradiation), 5)  
(thoretical background connection to other sciencie  
on food physics), 6)  
(physical properties of plant materials and  
agroproducts), 7)가 (technical  
develop- ment, instrumentation, measurement  
techniques, automation, process control)

1. (History of Food Irradiation in Turkey)

(Ankara) Hacettepe Dr. Y. Sanalan가  
2 50  
(The peaceful uses of atomic energy) 가

trans cis  
A  
cis/trans 가  
trans cis  
가 . Trans cis  
, ,  
가 , max  
가  
cis  
cis/trans  
National Institute of Standard Technology HPLC  
polymeric C<sub>30</sub>(5 μm)  
cis/trans  
C<sub>18</sub>  
polymeric C<sub>30</sub>(5 μm)  
cis/trans  
electrochemical detector  
Carotene(hydrocarbon carotenoids)  
xanthophylls(oxygenated carotenoids) 220-520mV  
UV-Visible 1,000

2. (carotene, hydrocarbon carotinoids) (xanthophylls, oxygenated carotenoids) 600

3. 가 , pH Hydrogel (A biodegradable and pH-sensitive Hydrogel)  
(hydrophillic polymeric network)  
(hydrogel)  
가 smart hydrogel intelligent hydrogel

가 . 가

(solid-like gel) , Tg 가 (+) 가

, pH (diffusion-limited)

, sugar bloom,

(polyvinyl alcohol, PVA)

pH 1,300% , 5.

, pH (PVA) flavanone,

B<sub>12</sub> (gastric fluid) flavone, flavonol 3가

pH 1.2 pH 7.2 7- O- glycosylflavanone 가 가 .

B<sub>12</sub> B<sub>12</sub> Flavone flavonol

pH , pH 1.2 ,

B<sub>12</sub> 100% pH 7.2 30% 가 (flavanone,

(drug delivery) flavone, flavonol) 1

hesperidin , naringin

가 가

4. (Molecular , quercetin 가

mobility an Food Stability) 가

Dr. O. Fennema가

(Galssy

state technology) . (molecular **Naringin (C<sub>27</sub>H<sub>32</sub>O<sub>14</sub>)** :

mobility, Mm) , 가

가 . Naringin naringinase

가 , naringin rhamnose

(the glass transition 가 가 prunin

temperature, Tg) 가 , prunin

( , ) 가 naringenin .

naringenin(flavanone)

Hesperidin (C<sub>28</sub>H<sub>34</sub>O<sub>15</sub>):

252

Hesperidin 가 hesperetin  
rutinose . Hesperidin

- 2) C ring 2 3 :  
bond 가
- 3) C ring C-4 carbonyl group:  
C ring C-4 carbonyl group  
가  
C-4 carbonyl 가 catechin  
C-4 carbonyl quercetin

- 1) C ring 3 OH :  
Fisetin, (+)-catechin, quercetin, myricetin,  
morin 3-OH  
3-OH  
diosmetin, apigenin(flavone), hesperetin,
- 4) OH group :  
A B ring -OH

1.

Naringin	<i>C. paradisi</i> <i>C. aurantium</i>	flavanone	5,4'-OH, 7-O-Neo*
Neohesperidin	<i>C. aurantium</i>	flavanone	5,3',4'-OH, 7-O-Neo*
Hesperidin	<i>C. sinensis</i>	flavanone	5,3'-OH, 4'-OMe, 7-O-Rut**
Diosmin	<i>C. sinensis</i> <i>C. limonia</i>	flavone	5,3'-OH, 4'-OMe, 7-O-Rut**
Rutin	<i>C. limonia</i>	flavonol	5,7,3',4'-OH, 3-O-Rut**
Naringenin	<i>C. paradisi</i>	flavanone	5,7,4'-OH
Eriodictyol	<i>C. aurantium</i>	flavanone	5,7,3',4'-OH
Hesperetin	<i>C. sinensis</i>	flavanone	5,7,3'-OH, 4'-OMe
Apigenin	<i>C. paradisi</i>	flavone	5,7,4'-OH
Luteolin	<i>C. limonia</i> <i>C. aurantium</i>	flavone	5,7,3',4'-OH
Diosmetin	<i>C. sinensis</i>	flavone	5,7,3'-OH, 4'-OMe
Kaempferol	<i>C. paradisi</i>	flavonol	5,7,3,4'-OH
Quercetin	<i>C. limonia</i>	flavonol	5,7,3,3',4'-OH
Tangeretin	<i>C. paradisi</i> <i>C. limonia</i> <i>C. aurantium</i>	flavone	5,6,7,8,4'-OMe

\*Neo : neohesperidoside, \*\*Rut : rutinoside

Apigenin, hesperetin, hesperidin, naringenin,  
 naringin, chrysin, 3-hydroxy flavon 1 3  
 -OH group , quercetin,  
 myricetin, myricetrin, phloretin, (+)-catechin,  
 morin 4 6 -OH group .  
 -OH radical B  
 ring -OH 가  
 C-3' OH  
 가 , OH 가 -OH radical  
 myricetin  
 (hydroxylation pattern : 3, 5, 7, 3', 4', 5')  
 kaempferol (hydroxy- lation pattern : 3, 5,  
 7, 4') -OH radical .

Rutin quercetin C-4 carbonyl  
 C-3 C-5 OH 2가  
 flavonoid .  
 flavonoid Fenton  
 flavonoid

5) hydroxylation pattern:

A ring C-5 C-7 -OH group B 6.  
 ring C-3' C-4' -OH group  
 1)

6) : 8 97%가 , 3%  
 Apigenin, naringenin, hesperetin, diosmetin,  
 quercetin

(steric hindrance)  
 가 -OH group  
 flavonoid  
 glycosides aglycone flavonoid  
 가 . rutin  
 aglycone 가

7) methoxyl : (Ayrar) . 5 6  
 Methoxyl (steric hindrance) 1 2  
 flavonoid “ ”

8) C-4 carbonyl C-3 C-5 OH : 2)

“ ”

가

(pastrima)가

(pastrima)

가

(ekmek)

(pide) 2

가

(kebab)

(kypite)가

가

가

“ ”

가

가

),

