

# Some Common Phytochemicals found in Irish Vegetables

Tuesday 2 March 2010  
Teagasc Ashtown Food Research Centre



# Summary

1. Introduction to the IPFN project.
2. Glucosinolates profile of different cultivated varieties of Broccoli .
3. Perspectives.



# I. Introduction to IPFN

# I. Irish Phytochemical Food Network

I.1. Phytochemicals

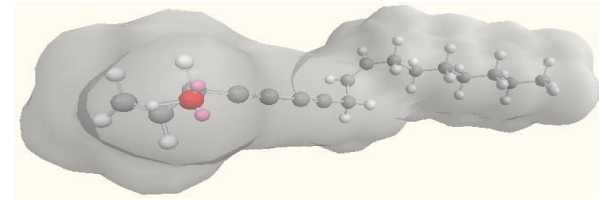
I.2. Irish Vegetables

I.3. The Network

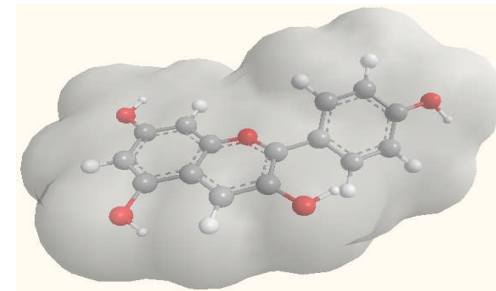
I.4. The Partners

# I.I. Phytochemicals

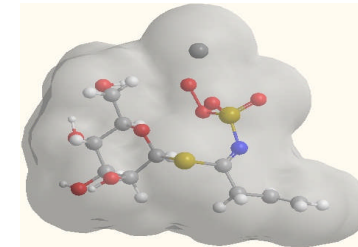
## Apiaceae



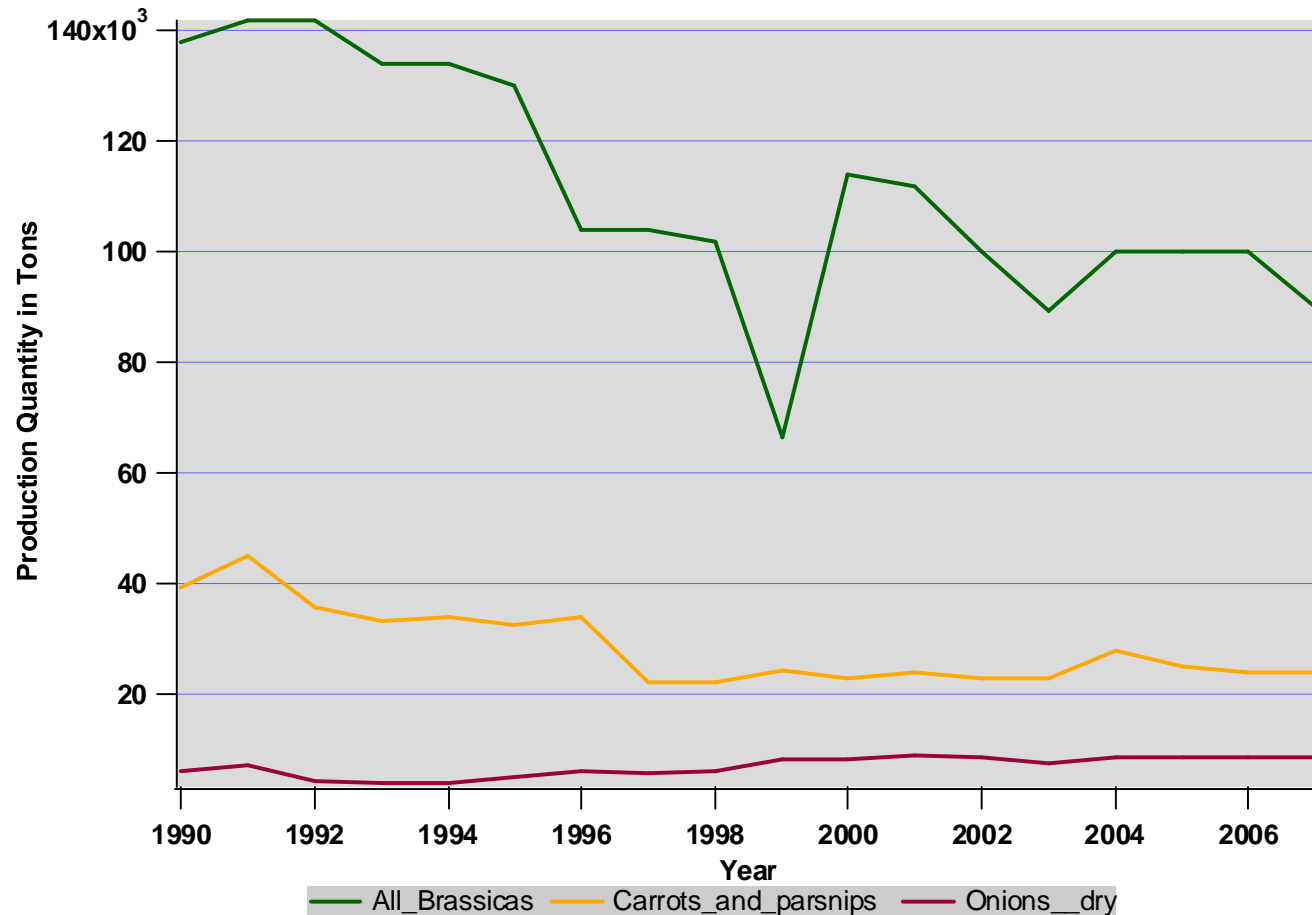
## Alliaceae



## Brassicaceae

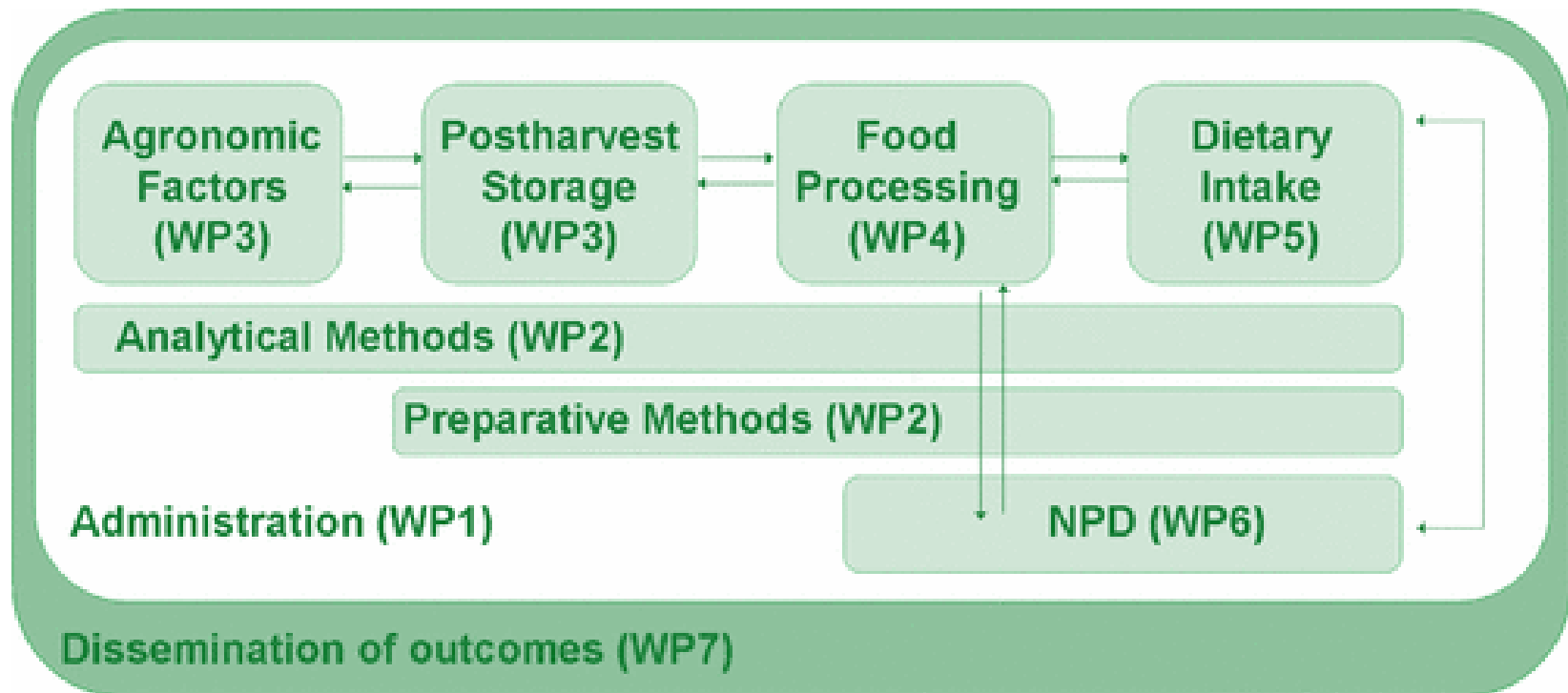


# 1.2. Irish Vegetables



Data source: FAOSTAT, online database of the statistics division of the Food and Agriculture Organization of the United Nations: <http://faostat.fao.org>

# 1.3. The Workprogramme



# 1.4. The Network

## Teagasc

- Ashtown Food Research Centre
- Kinsealy Horticulture Unit



## University College Dublin



## University College Cork



## University of Limerick



## Dublin Institute of Technology



## NUI Galway





## 2. Glucosinolates in Broccoli

# 2. Glucosinolates in broccoli

## 2.1. Chemical Structure

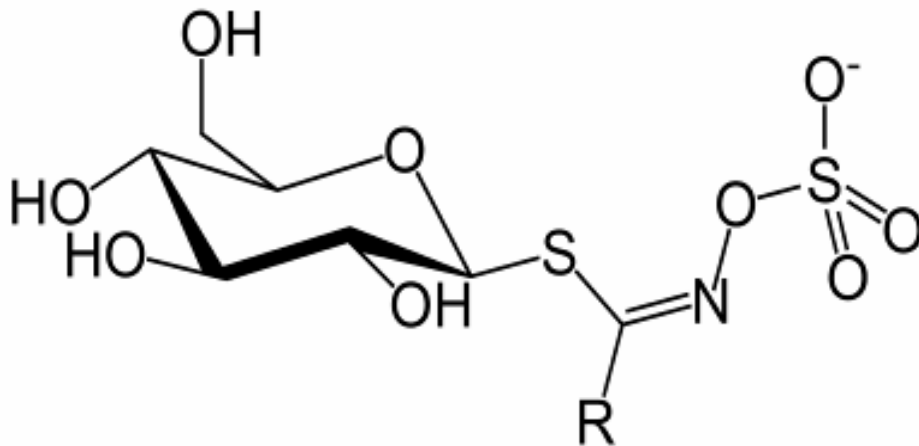
## 2.2. Occurrence

## 2.3. Bioactivity

## 2.4. Analysis

# 2.1. Chemical Structure

$\beta$ -thioglucoside-*N*-hydroxysulfate :



**More than  
120 found in  
Nature**

## 2.2. Occurrence



# 2.3. Bioactivity

2.1. Chemical Structure

2.2. Occurrence

2.3. Bioactivity

2.4. Analysis

# 2.4. Analysis



## 1. Freeze Dry Samples

Previously frozen  $-80^{\circ}\text{C}$

$T = -30^{\circ}\text{C}$

$P = 10^{-3}\text{ atm}$



## 2. Mill dried product



## 3. Extract GS

70 % MeOH

$T = 80^{\circ}\text{C}$

Centrifuge

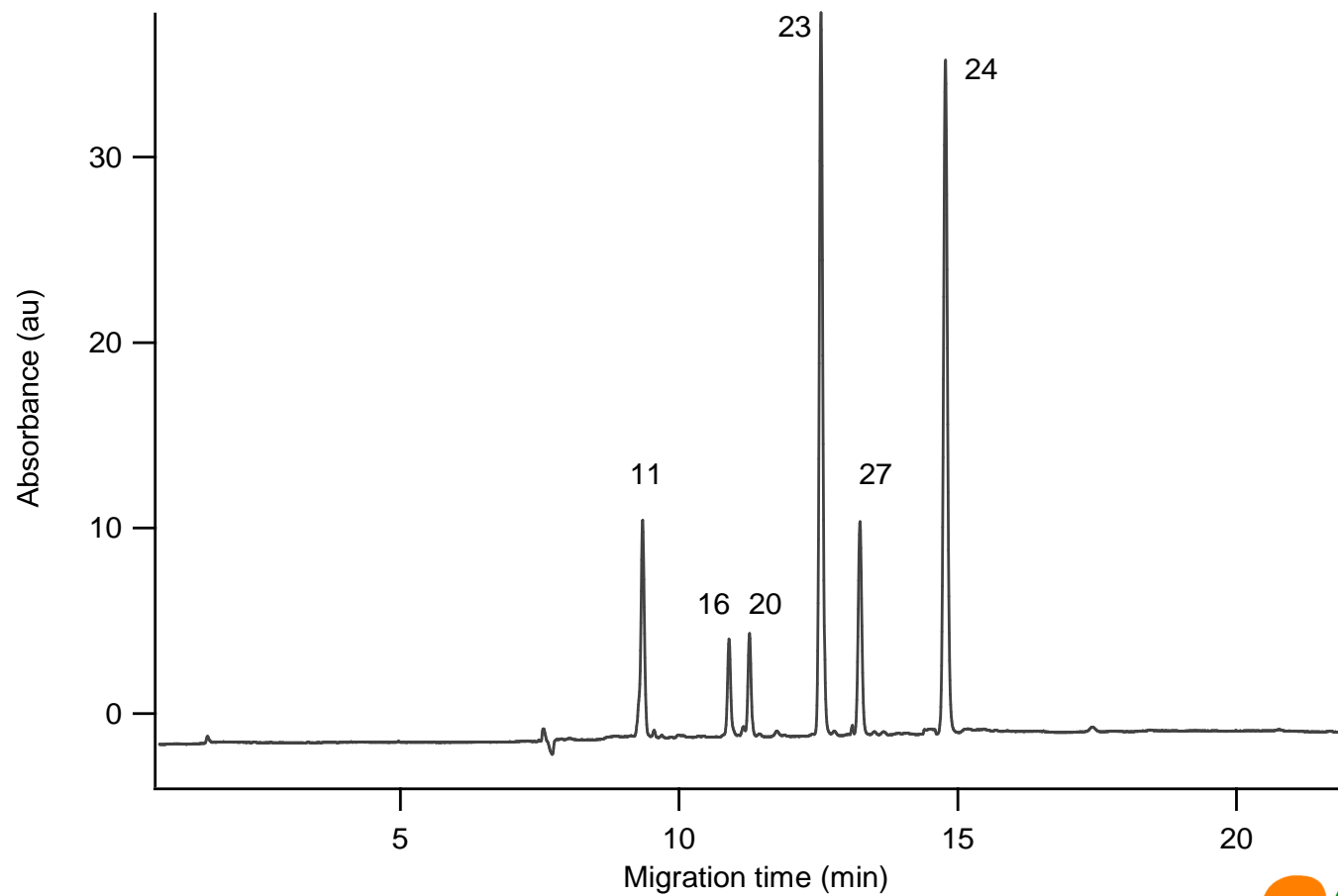
# 2.4. Analysis



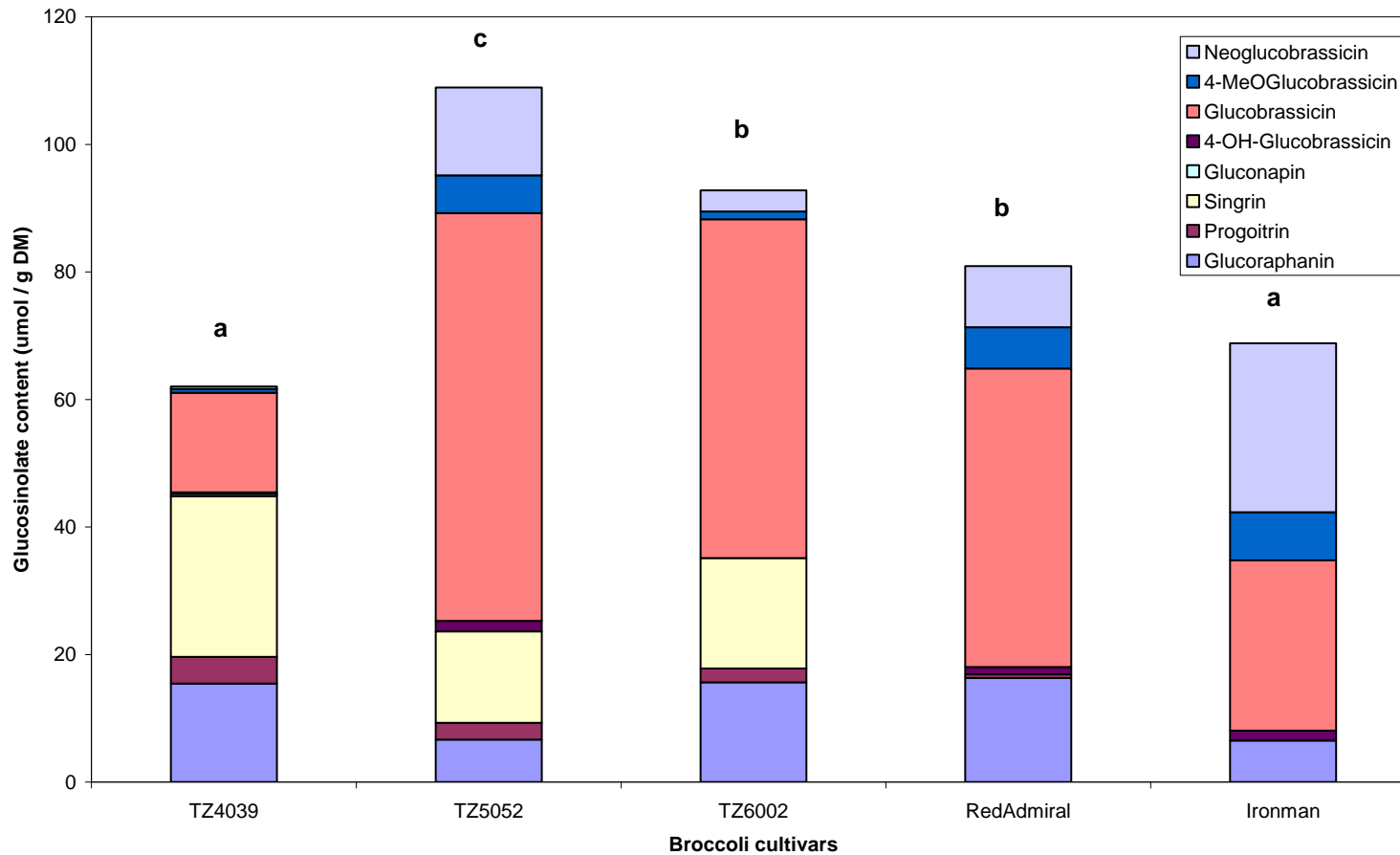
# 2.4. Analysis

Capillary Electrophoresis :

# 2.4. Analysis



# 2.4. Analysis



# 2.4. Analysis

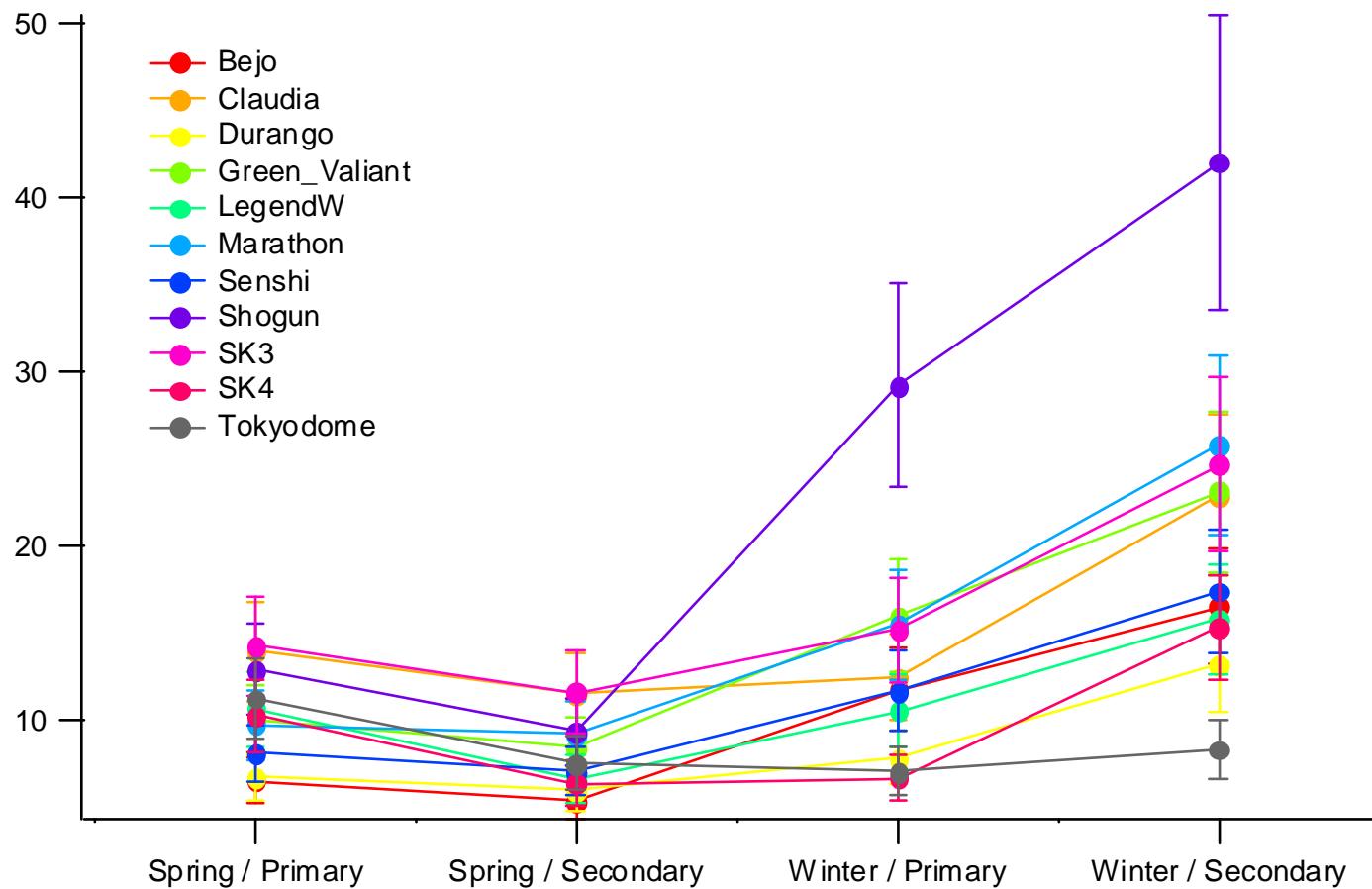


# 3. Perspectives

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1. Characterization of Cultivars
2. Spacing Trials
3. Maturity Trials
4. Organic vs Conventional Trials

# Interesting questions



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