



University of Agronomic Sciences and Veterinary Medicine

Faculty of Horticulture – Bucharest



## New Fruit Species for Climate Change

**Prof. Florin Stănică**

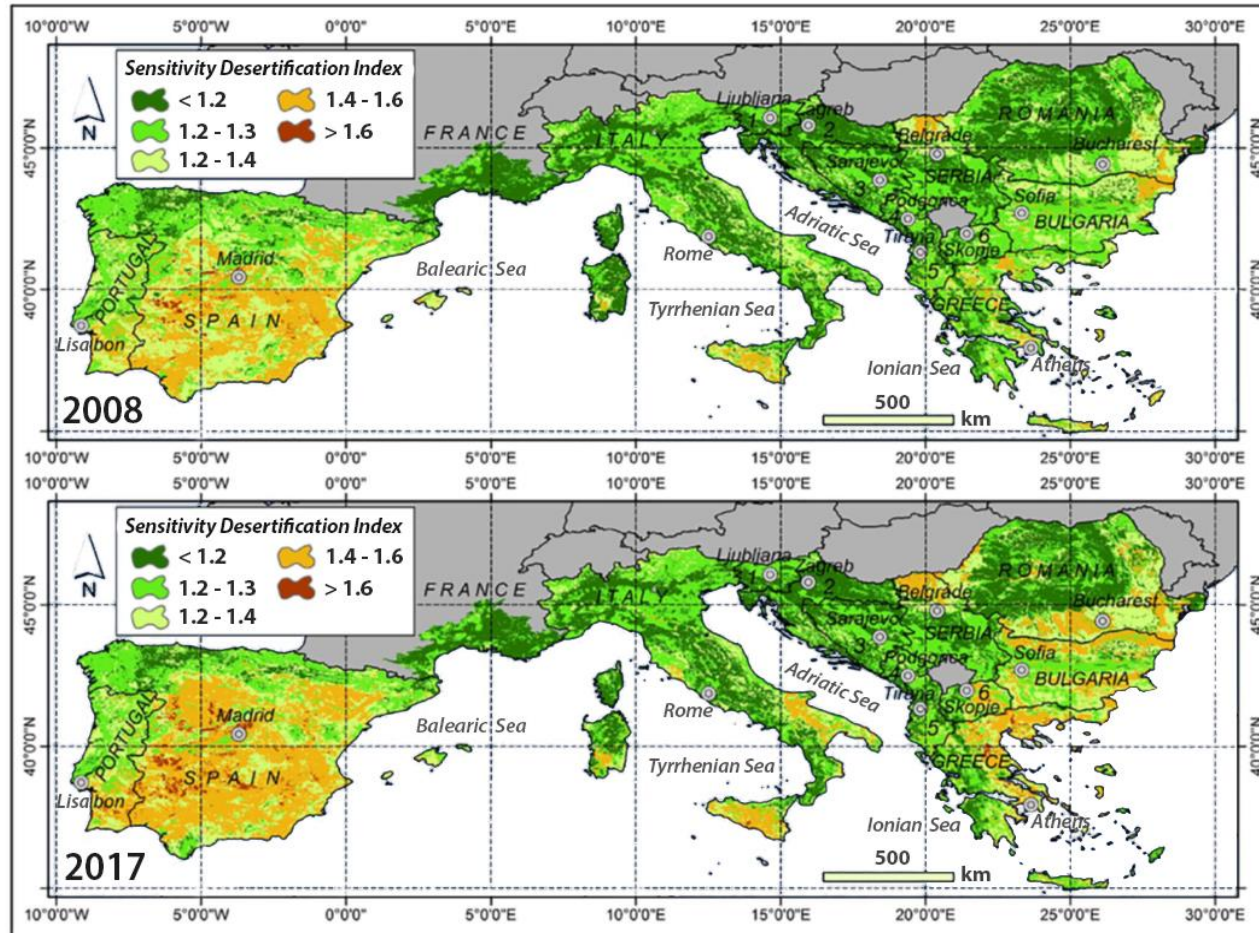
Faculty of Horticulture,

University of Agronomic Sciences and Veterinary Medicine of Bucharest

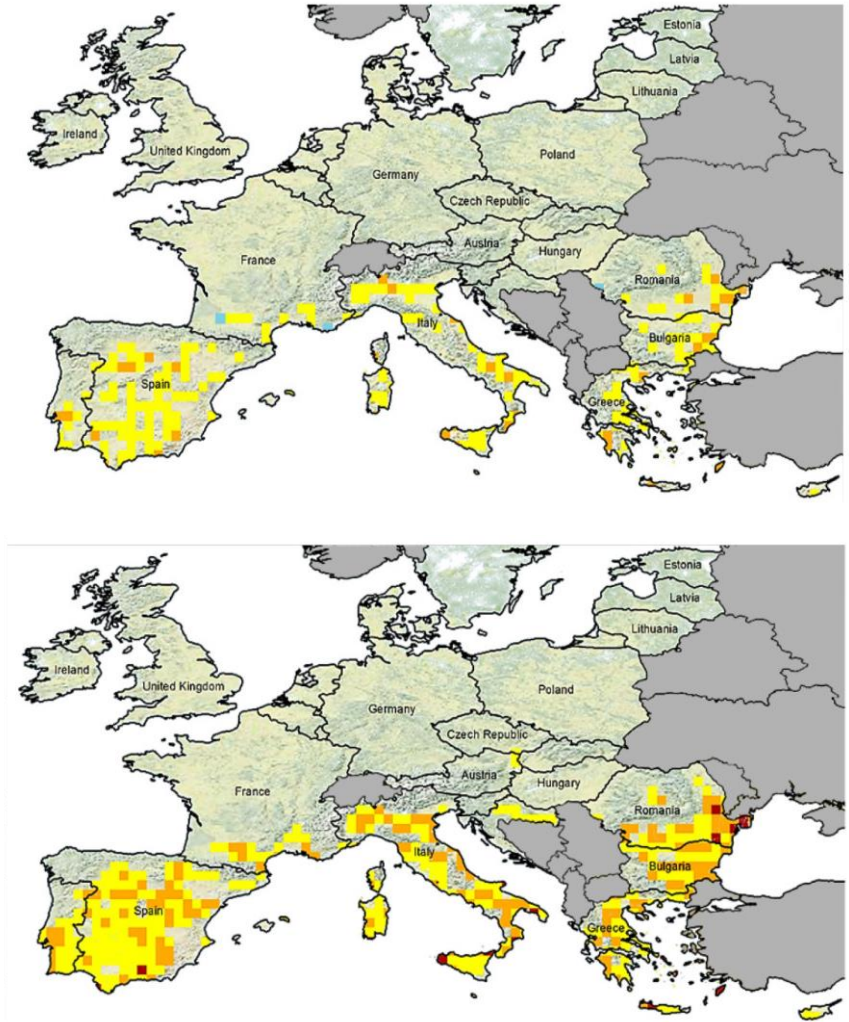
14TH ICA Rectors and Deans Forum 2024 - Faculty of Agriculture, University of Zagreb, Croatia, 24 – 25 October 2024

“The Research priorities of my university/faculty in addressing the strategic challenges related to the future of agriculture”

# Climate change - desertification



Desertification index in UE 2008 - 2017 (Special Report CCE, 2018)



Desertification risk and aridity index 2071-2100, in comparison with 1981-2010

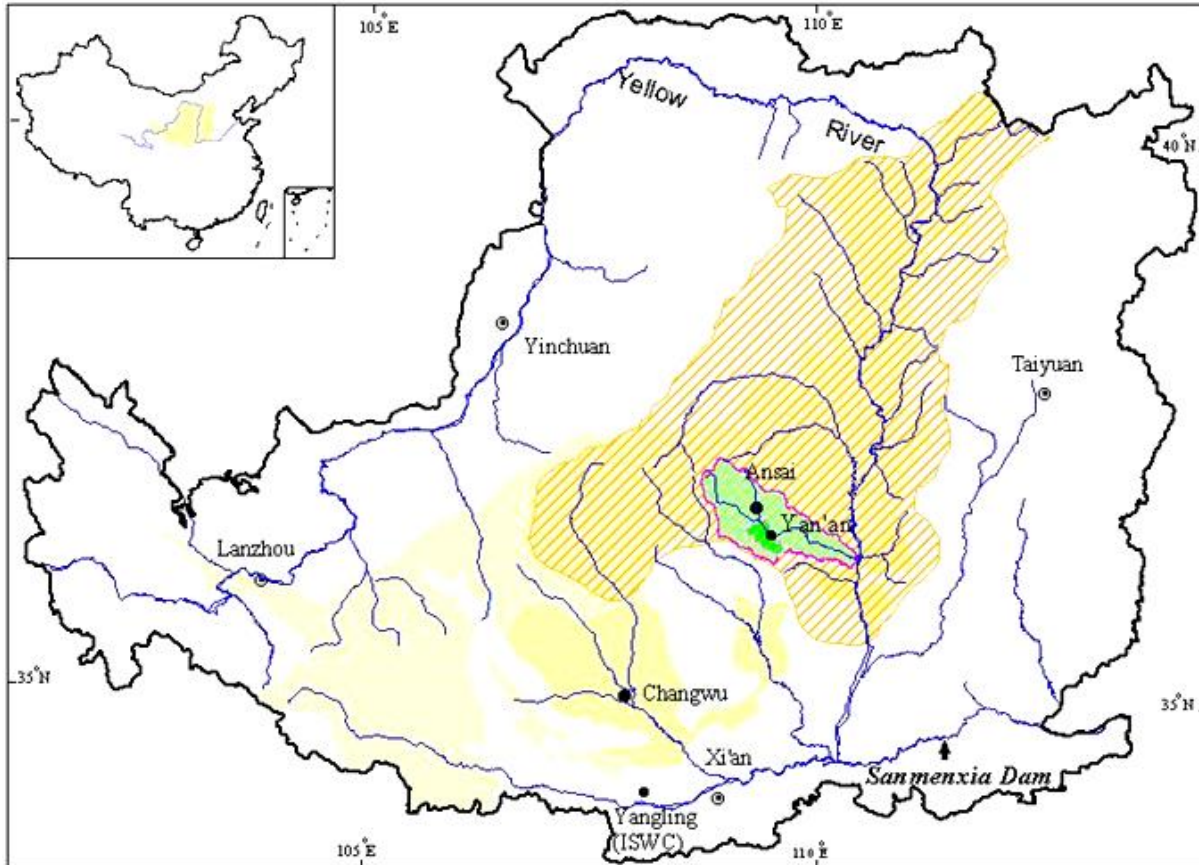
Jujube

(*Ziziphus jujuba* Mill.)

# Chinese jujube (*Ziziphus jujuba* Mill.)

Origin: the central basin of Yellow River

Aprox. 53.000 trees over 300 years old Gansu Province



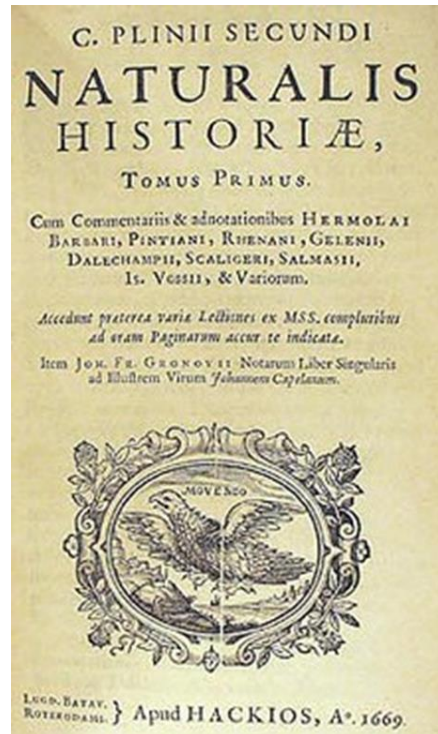
# Jujube (*Ziziphus jujuba* Mill.)

Long history

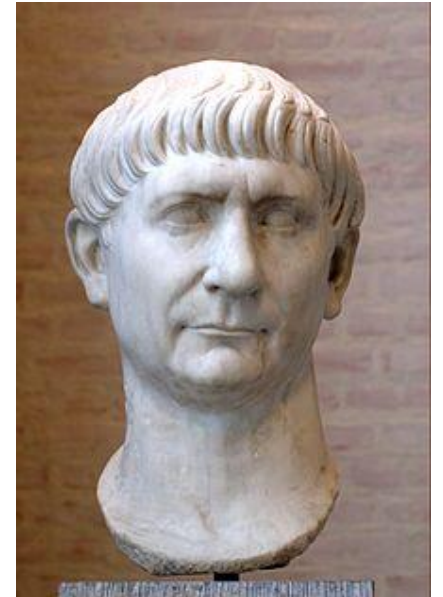
- 2,000 years ago: spread along the Silk Road – Pliny the Elder – during the time of Emperor Octavian Augustus, the first plants were introduced to the Roman Empire from Syria



Pliny the Elder  
23 B.C. - 79 A.D.

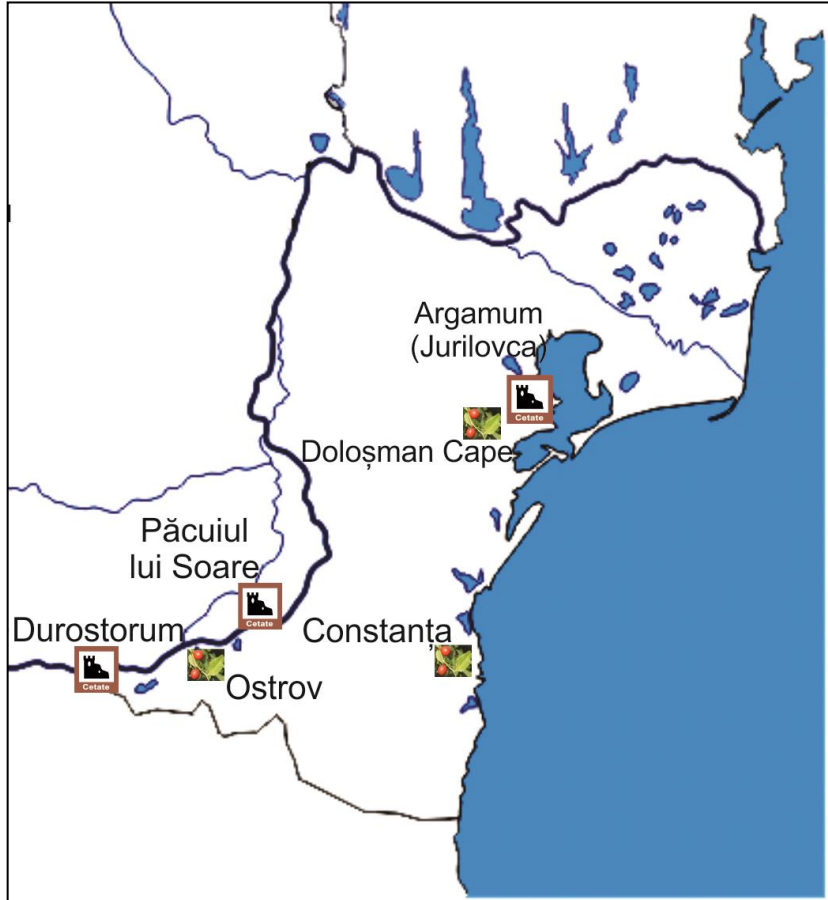


Roman Empire during the Emperor Trajanus (53-117 AD)



# Chinese jujube (*Ziziphus jujuba* Mill.)

Argamum Antique City – Doloşman Cape, Jurilovca, Tulcea



# Chinese jujube (*Ziziphus jujuba* Mill.)

## Fruit nutraceutic qualities

### Vitamins:

- Ascorbic acid 330-880 mg/100 g fw
- Vitamin P (citrine) over 1.000 mg/100 g fw
- Vitamins of B group

### Microelements:

- Fe 0.355%, Ca 0.246%, Mg 0.057%, Zn 5.044 ppm, Mn 3.85 ppm, Cu 2.364 ppm.

### Macro energy compounds:

- Adenosine 3-5 monophosphate – till la 500 nmol/g dw, (10 times more than any analyzed plant till now)

### Fatty acids:

- high quantities of oleanolic and ursolic acid

### Essential amino acids: 10 of 12



# Chinese jujube (*Ziziphus jujuba* Mill.) - Cultivars

Xuan Cheng Jian Zao – Rain Queen





# Chinese jujube (*Ziziphus jujuba* Mill.) - Cultivars

Li Zao (Pear Jujube)



# Chinese jujube (*Ziziphus jujuba* Mill.) - Cultivars

Dong Zao (Winter Jujube) – Winter Queen



# Jujube (*Ziziphus jujuba* Mill.) - Cultivation

Dăbuleni Research and Development Station for Plant Cultivation on Sandy Soils

Single rows (4.0 x 1.5 m)



# Jujube (*Ziziphus jujuba* Mill.) - Cultivation

Drobeta Turnu Severin – Single rows (4.0 x 1.5 m)

Three years old trees



# Chinese jujube (*Ziziphus jujuba* Mill.) – Products

Dried Jujube, filled with walnut, almonds, cashew, etc.



# Chinese jujube (*Ziziphus jujuba* Mill.) – Products

Jujube honey, vinegar, jam, beer, wine, alcohol, etc.



Fig

(*Ficus carica* L.)

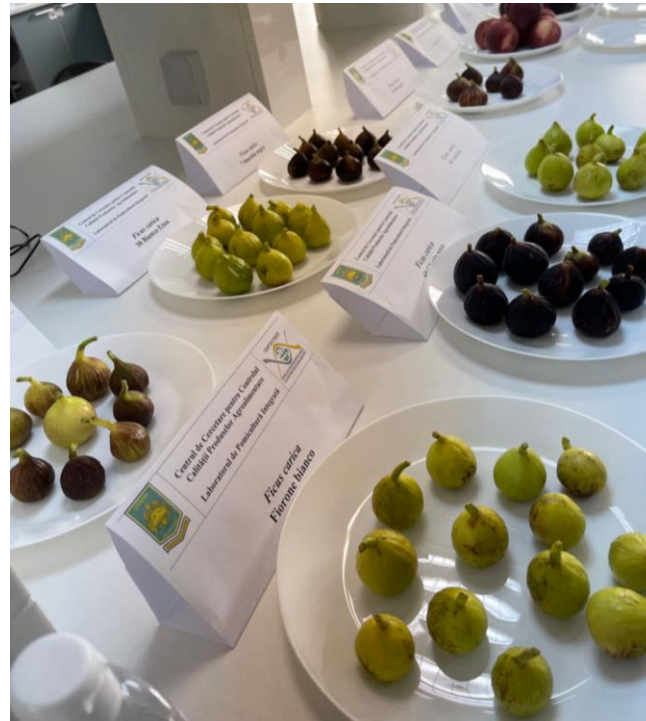
# Fig tree (*Ficus carica* L.) – collection of genotypes in Romania





# Fig tree (*Ficus carica* L.) – Selections

Collection of fig genotypes – Faculty of Horticulture – over 120 accessions



# Fig tree (*Ficus carica* L.) – Collections

## Fig fruiting hedge



# Fig tree (*Ficus carica* L.) – Fruiting Hedge System®

Protection of the fruit strip with wood chips after autumn pruning



**Go Ji**

*(Lycium chinense, L. barbarum, L. ruthenicum)*

# Go Ji (*Lycium barbarum*, *L. chinense*, *L. ruthenicum*) – Guo Qi

*Solanaceae* Family

Highly resistant to drought, grows on marginal soils, scalar flowering and fruit maturation



# Go Ji (*Lycium barbarum*, *L. chinense*, *L. ruthenicum*)

## **Vitamins:**

- Ascorbic acid - 400 times more than citrus
- Vitamin P (citrine)
- Vitamins of B group

**Microelements:** 21 microelements, Zn, Cu, P, Ca, Se, including Ge, a rare element in food

**Amino acids:** 18 amino acids that forms a bloc of proteins and 8 essential amino acids, including isoleucine and tryptophan

**Antioxidants:** anthocyanidins – stimulate the capillary blood flow, positive effect on collagen structure, anti inflammatory, offers bacterial and viral immunity



Ningxia 9 – for fresh consumption

# Go Ji (*L. barbarum*, *L. chinense*, *L. ruthenicum*) - Breeding

SARA (410) – extra early ripening - *Lycium chinense*

Registered by USAMV of Bucharest – Adrian Asănică



1<sup>st</sup> of  
June



# Go Ji (*L. barbarum*, *L. chinense*, *L. ruthenicum*) - Breeding

BUCUR (B2) – very productive - *Lycium barbarum*  
Registered by USAMV of Bucharest – Adrian Asănică





## Other new fruit species for future – to be continued....

- Sea buckthorn (*Hippophae rhamnoides*)
- Asimina (*Asimina triloba*)
- Chokeberry (*Aronia melanocarpa*)
- etc.



# Publicity

4-6<sup>th</sup> of December 2024 –  
Bucharest

## One Health International Student Conference

**One Health** is an integrated approach to health and sustainability at human-animal-environment interface. Students young researchers communicate and share their contribution at an international level to better address the pressing global health treats. The conference is organised together with the International Student One Health Allince – ISOHA.

The conference have a plenary session, a discipline-focused sessions, a poster session, and sponsors display where delegates can formally present, promote and discuss their scientific work. Conference topics: **Environment Health and Climate Changes; Animal Welfare; Landscape, Green Areas and Forest for Healthy Life; Sustainable Plant Production; Healthy Food and Nutrition.**



**One Health**  
Student Conference  
USAMV București

[onehealth.usamv.ro](http://onehealth.usamv.ro)



Environment Health  
and Climate Changes



Landscape, Green Areas,  
and Forest for Healthy Life



Sustainable Plant  
Production



Animal Welfare



Healthy Food and  
Nutrition

170  
1852 - 2022



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**One Health**  
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4-6<sup>th</sup> of December 2024 – Bucharest

Organized by:





170  
1852 - 2022



75  
1948 - 2023

**Thank you for your attention!  
Questions?**



**Contact**

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