



## Ethnobotany. Lecture 19



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# Outline

- 1 Other temperate and subtropical fruits
  - Important tropical fruits



# Martenitsa tree (Balkan tradition)



## Results of Exam 2: statistic summary

Summary:

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
40.00	56.00	70.00	67.69	75.00	88.00

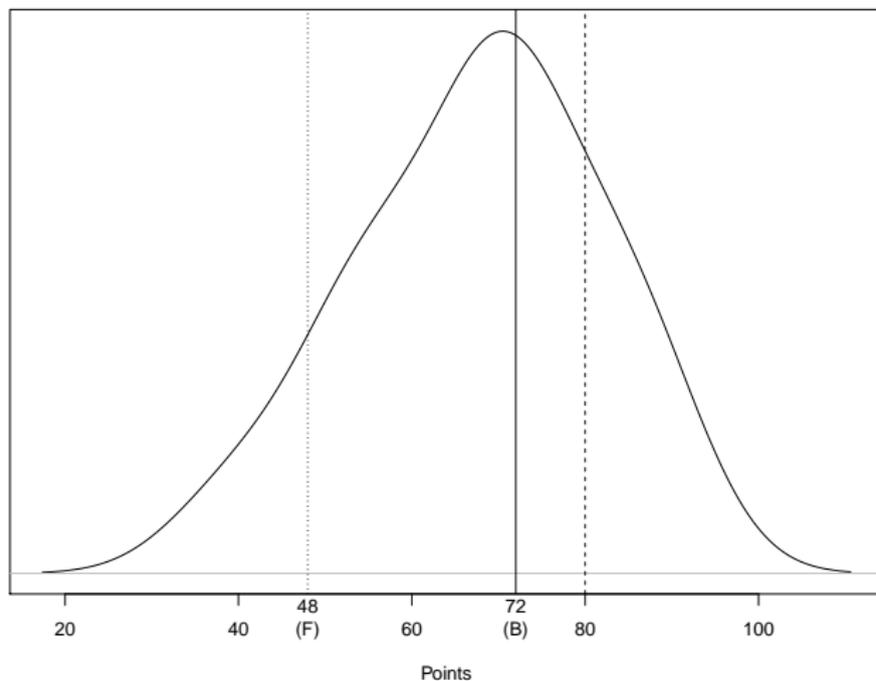
Grades:

F	D	C	B	max
48	56	64	72	80



# Results of Exam 2: the curve

Density estimation for Exam 2 (Biol 154)



# Other temperate and subtropical fruits

## Important tropical fruits



# Mango, *Mangifera indica*

- Evergreen massive tree from sumac (Anacardiaceae) family. Cultivated in most tropical countries, especially in Africa and South Asia.
- Low fertilization rate, from hundreds of flowers only few produce fruits
- Plant of monsoon climate: requires both dry and humid season
- Manual planting, pruning, harvesting but may give fruits for 300 years
- Rich of vitamin C, A and antioxidants; known to prevent colon cancer



# Mango flowers



# Papaya, *Carica papaya*

- Belongs to small family Caricaceae (close to Cruciferae)
- One of the most widely cultivated tropical plants



# Papaya biology

- Fast growing, palm-like tree with short lifespan ( $< 20$  years)
- Flowers of three kinds: male, female and hermaphroditic, there are  $\approx 50$  sexual forms
- Fruits contain seeds rich of mustard oils (like in cabbage family); fruits themselves are rich of starch, sugars, vitamin A and lycopene, and also of papain, peptidase enzyme



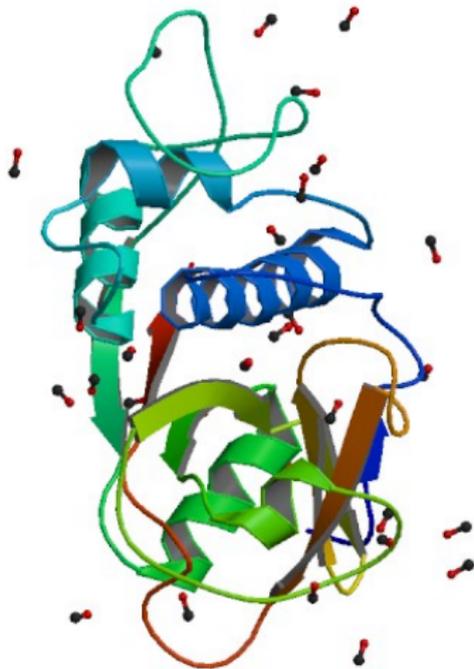
# Papaya plantation



# Papaya flower



# Papain enzyme



# Papaya history

- Domesticated in southern Mexico in Aztec time
- It is still unclear if papaya occurred in south-west Asia before the age of exploration
- Culture of wet tropical climate, Brazil is the biggest producer



# Avocado, *Persea americana*

- Representative of Lauraceae family
- Fruits are rich of fats (14%, mostly monounsaturated) and poor of sugars (< 1%)
- Also contain vitamins B (including folate, B<sub>9</sub>), A, K and potassium



# Avocado biology

- Medium-sized evergreen tree
- Flowers are cross-pollinated, there are morning-female (A) and day-female (B) races
- Cultivars are mostly propagated by grafting
- Seeds are easy to germinate



# Avocado tree



# Avocado flowers



# Avocado seedling



# Avocado history

- Domesticated in Central America (Mayan civilization)
- Spread in many other places, including California
- Was first fruit of aircraft delivery
- Mexico and China are now biggest producers



# Passion fruit, *Passiflora edulis*

- Other names: maracuja, granadilla
- Belongs to Passifloraceae family and passionflower genus, *Passiflora*
- Amazingly complex flower structure



# Passionflower



# Passionfruit



# Passion fruit features

- Perennial vine, flowering twice a year
- Pollinated with birds and big insects
- Extremely rich of vitamin C



# Litchi, lychee, *Litchi sinensis*

- Evergreen tree from Sapindaceae family
- Old traditional Chinese culture, cultivation started 2,000 BC



# Litchi



# Litchi seeds



# Litchi features

- Edible part of fruit is seed aril (seed attachment)
- Contain significant amounts of minerals like phosphorous and copper
- Mycorrhizal tree
- Fruits are canned for transportation



# Summary

- Multiple tropical fruits are mostly sources of vitamin C
- Many traditional Asian fruit cultures have also a medicinal value



# For Further Reading



A. Shipunov.

*Ethnobotany* [Electronic resource].

2011—onwards.

Mode of access:

[http://ashipunov.info/shipunov/school/biol\\_310](http://ashipunov.info/shipunov/school/biol_310)

