


Genetic Reserves of Cowpea – Hungarian Sandy Hills – Climate Change: The Study of an Alternative Legume

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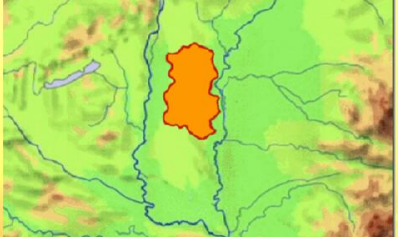

Challenges of climate change



New or previously ignored staple food sources might be needed

Hungarian Sandy Hills :

- constant and severe water shortages
- distressing signs of desertification



Cowpea

Globally distributed, annual, short-day, self-pollinating, **drought tolerant, warm-weather** legume, originating from Africa.

National research:
1902 – Dr. Legány Ödön
1930's – Dr. Somorjai Ferenc
1950's – Dr. Antal József

Two variants were cultivated in the areas known as the Hungarian Plain and Nyírség.

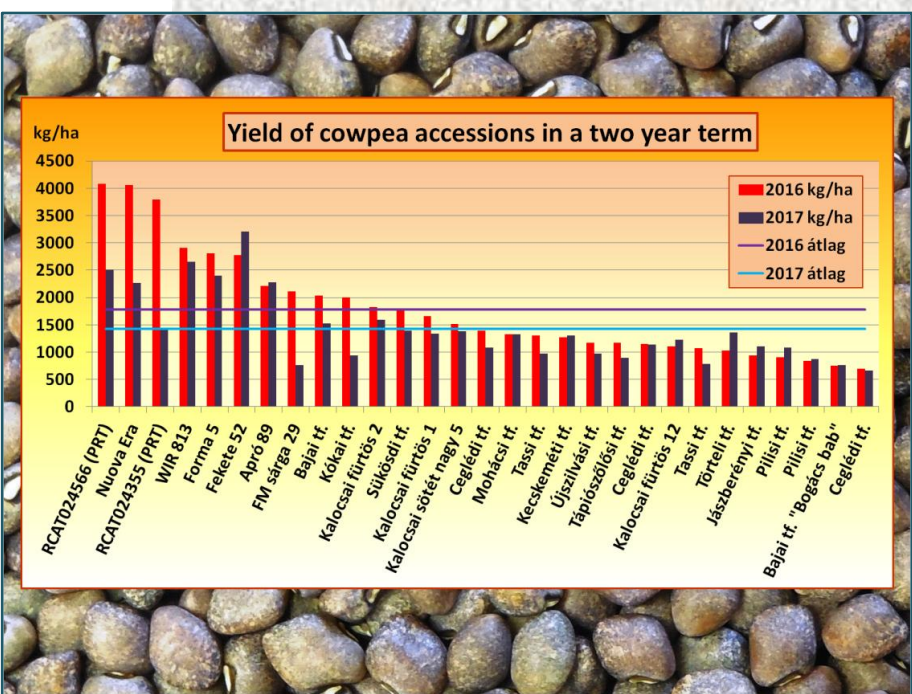
The establishment of a gene bank collection began in the 1950's. Today it consists of nearly 350 unique accessions, including landraces, domestic breeding strains and foreign varieties.

Presentation of the experiment

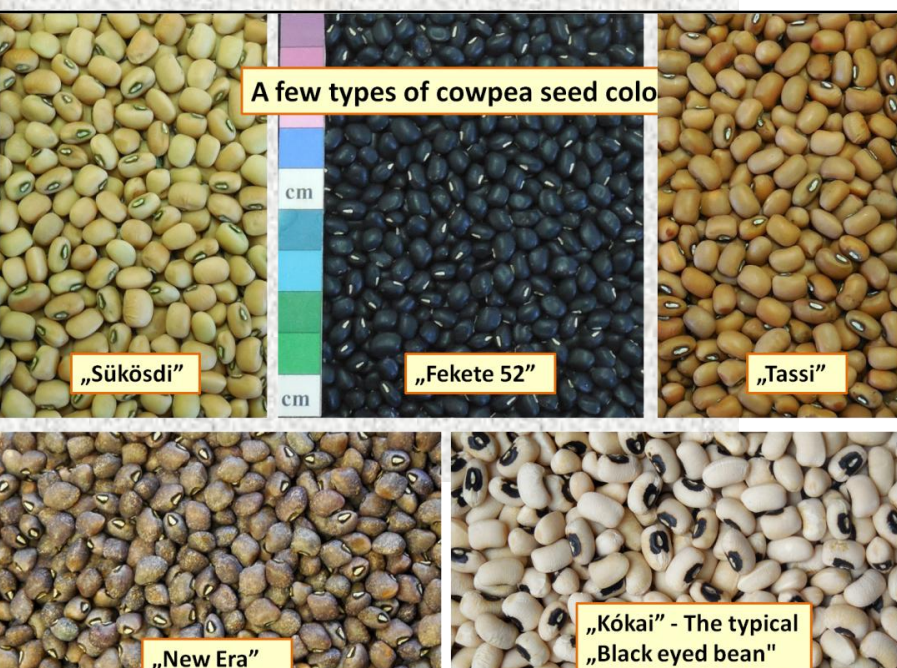
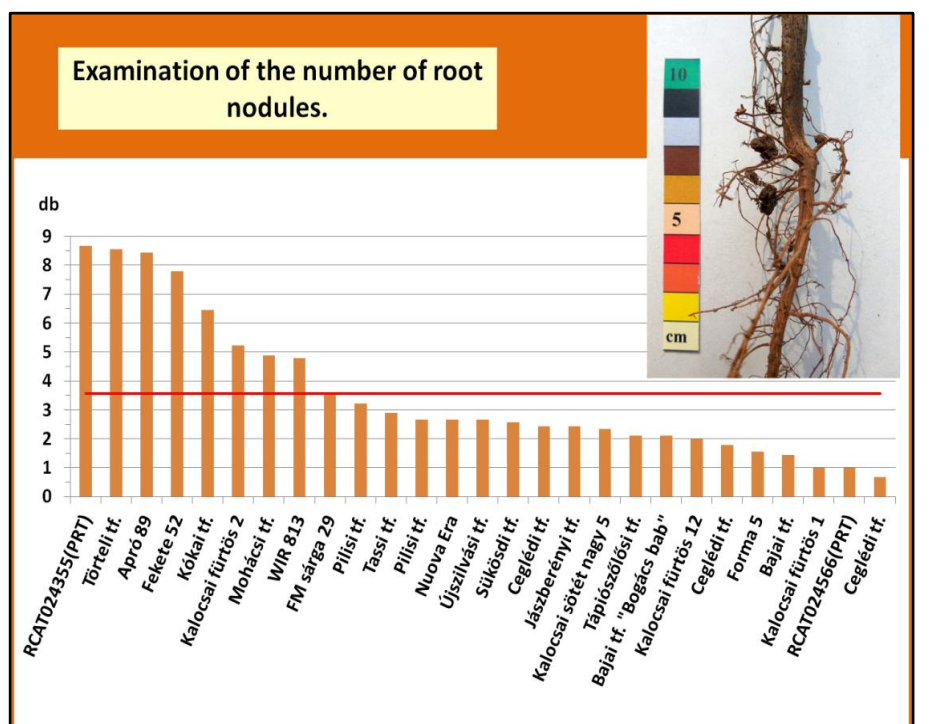
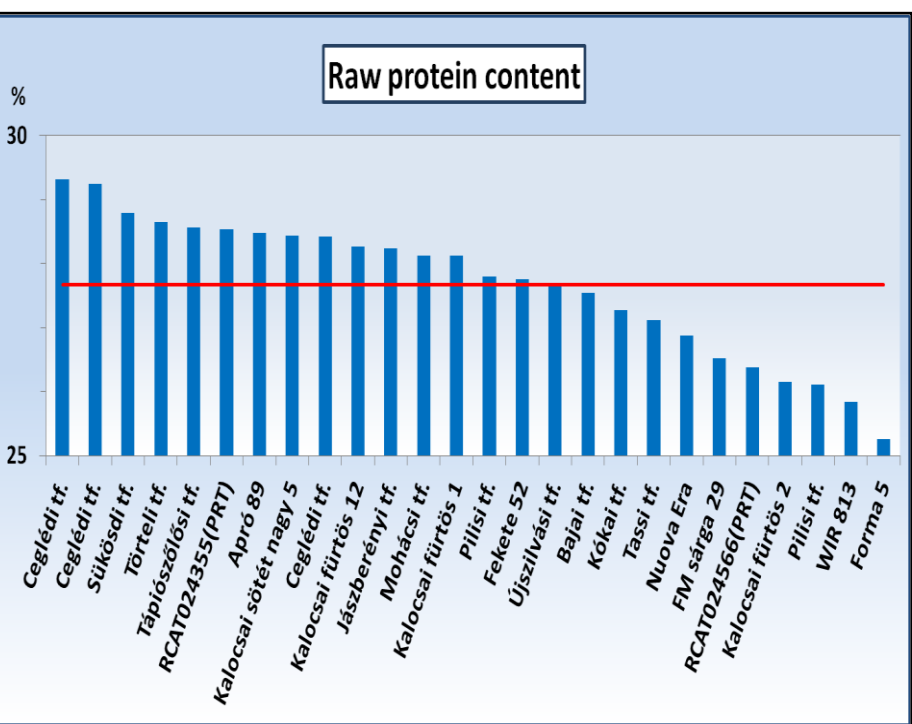
Tápiószéle, CPD, on soil typical to the Hungarian Sandy Hills, without any nutrition supplement, irrigation or interference with pesticides.

2016 – 2017: 29 cowpea (*Vigna unguiculata* L.) accessions selected from the gene bank collection. National landraces, domestic and foreign breeding materials, and old varieties.

Primary goal of the study: yield comparison of cowpea accessions.



A few types of cowpea seed color

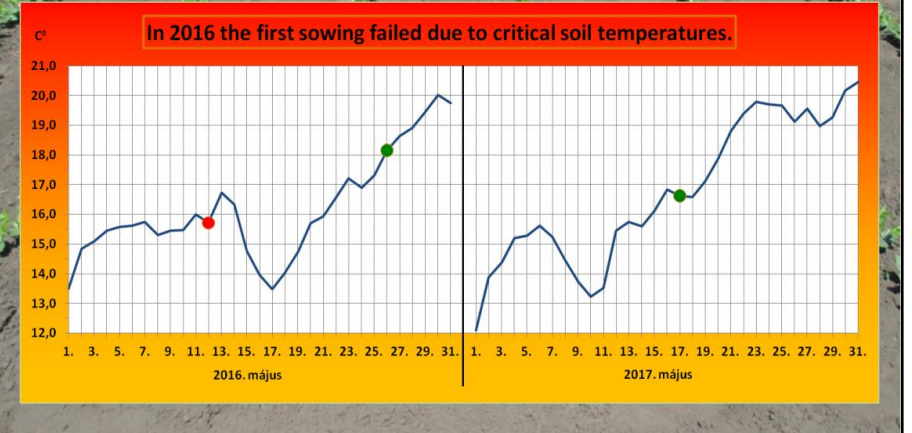



Experiences with the cultivation technology I.

Time of sowing

- Increased need for high temperature
- Susceptibility to seed bed rotting

In 2016 the first sowing failed due to critical soil temperatures.



Experiences with the cultivation technology II.

Irregular flowering and ripening times

- extremely strong correlation with weather conditions
- periodic appearance of dry pods
- several rounds of manual harvest

