



# SUNFLOWER SEED OIL CONTENT DEPENDING ON THE SEEDLING TYPE

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- The seed viability or vigour is a complex indicator of seed quality.
- Represents a set of all those properties of seeds that affect seed germination.
- High quality seeds and vigour enable the formation of an optimal plants number.
- The problem of the appearance of abnormal seedlings is often manifested in sunflower seed germination testing.
- Abnormality is usually caused by a lack of primary root and these seedlings are excluded from total germination.
- *However, when sown in a field, abnormal seedlings develop into normal yielding plants.*

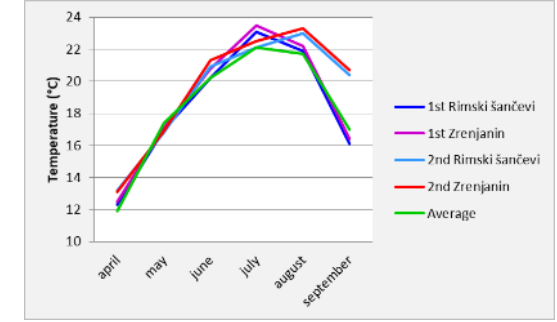
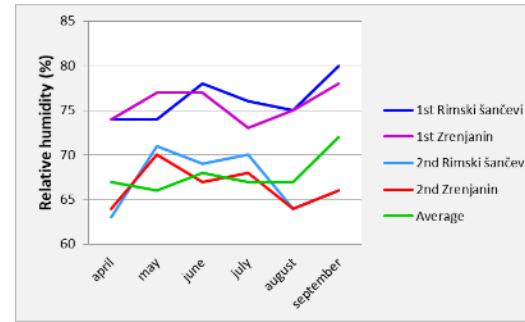
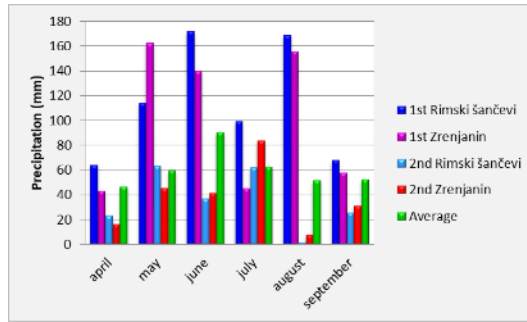
## AIM

**The aim of study was to determine whether the seedling type causes a significant decrease in sunflower seeds oil content.**



## Matherial and methods

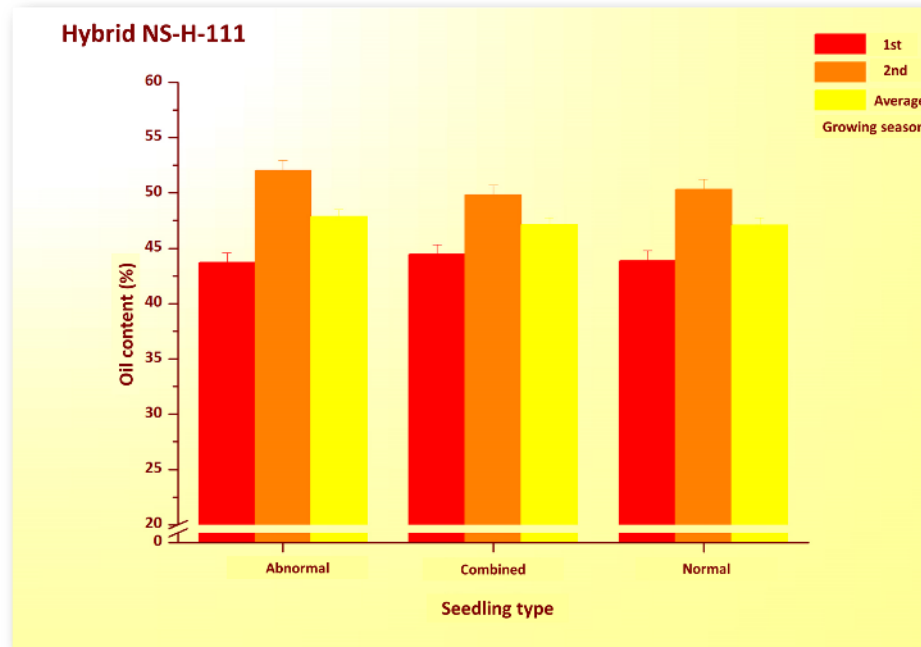
- The trial was carried out during the two growing seasons, on two localities, according to split-plot model design in three repetitions
- A seed lot of hybrid NS-H-111, which had a higher percentage of abnormal seedlings in the preliminary germination test, was selected for the research.



- Seeds were germinated at a temperature of 25°C, and Klasmann TS 1 standard was used as a substrate.
- After 4 days, seedlings were analyzed and typical and atypical were isolated (atypicality referred only to the lack, ie underdevelopment of the primary root, while other structural parts were normally developed).
- After that, the seedlings were planted into seedling production containers and placed in a greenhouse.
- When the plants reached the stage of a well-developed first pair of leaves and the beginning of the second (V2) they were planted on the field.
- Planting was done at the end of April. The basic plot consisted of 6 rows, 5 m long, with a distance of 70 x 25 cm.
- **Plots were formed in the field, as follows: one is planted with plants that developed from normal seedlings, the next is planted with plants developed from abnormal seedlings, while the third plots represented a combination of normal and abnormal, depending on the percentage share of abnormal seedlings in initial lot (11.0%).**
- The oil content was determined by the method of nuclear magnetic resonance (NMR).

## Results

- Oil content highly significantly depended on the year and locality of the test, while the influence of the seedling type was significant.
- The results of the ANOVA show that the greatest influence on the formation of this trait was precisely the year, whose share in the total variation was 70.0%.



- Significantly the highest average oil content was found in plants originating from abnormal seedlings (47.86%), while the lowest was found in normal ones (47.09%).
- On average, for both years of testing, the highest oil content at Rimski šančevi locality was achieved in plants originating from abnormal seedlings (49.53%) and in the Zrenjanin locality in the combined ones (46.46%).