

SEED SIZE AND SUBSTRATE EFFECT ON SEED GERMINATION OF INBRED SUNFLOWER LINES



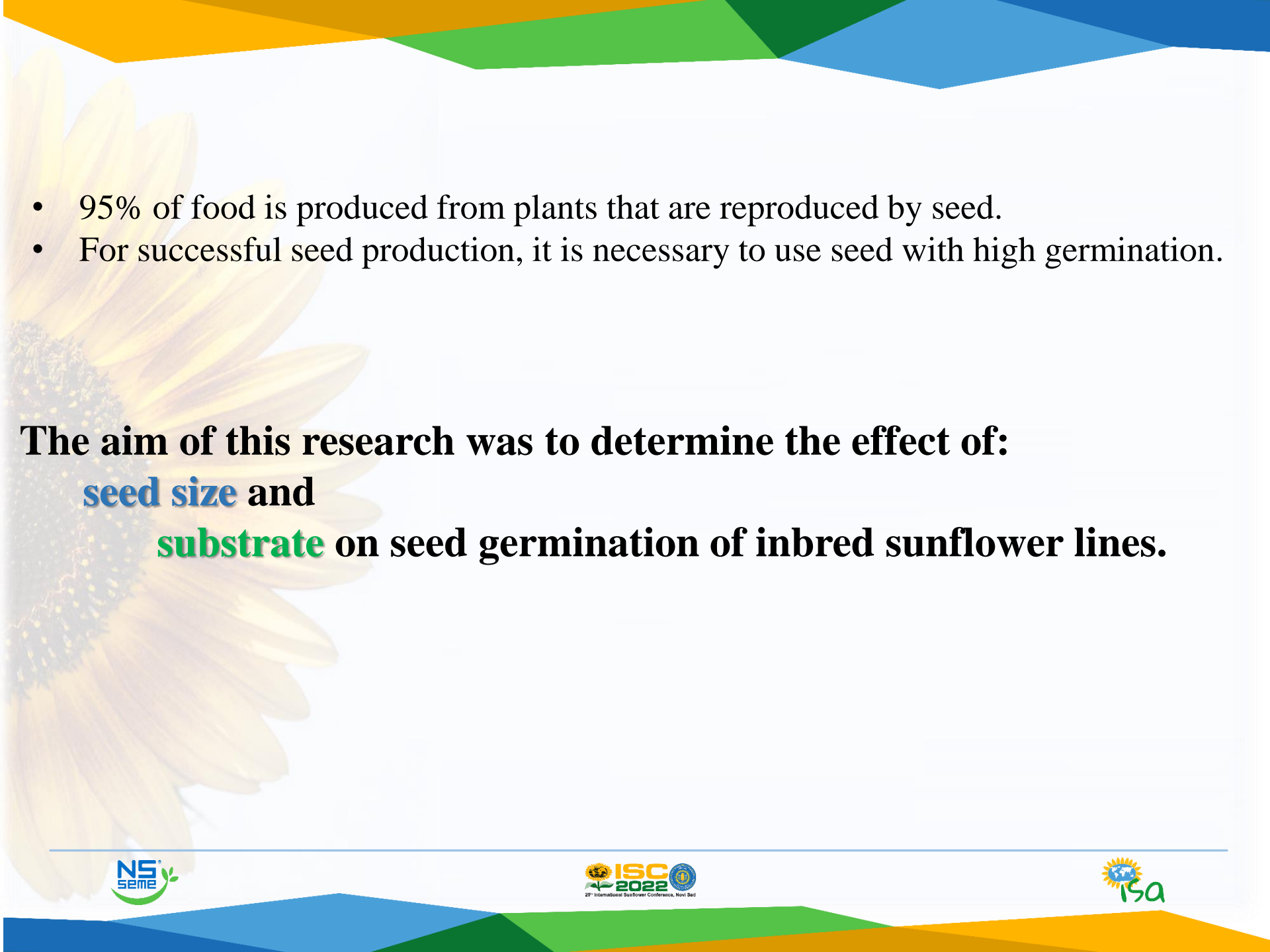
Miloš Krstić^{1*}, Jelena Ovuka¹, Velimir Radić¹, Sonja Gvozdenac¹, Vladimir Miklič¹, Velimir Mladenov²,
Borislav Banjac², Teodora Kukrić²

¹Institute of Field and Vegetable Crops, Maksima Gorkog 30, 21 000 Novi Sad, Serbia,

²Faculty of Agriculture, University of Novi Sad, Trg Dositeja Obradovića 8, 21 000 Novi Sad, Serbia

milos.krstic@ifvcns.ns.ac.rs



- 
- 95% of food is produced from plants that are reproduced by seed.
 - For successful seed production, it is necessary to use seed with high germination.

The aim of this research was to determine the effect of:
seed size and
substrate on seed germination of inbred sunflower lines.

Materials and Methods

Inbred sunflower lines used in this research

Cms-lines	Seed size	Rf-lines	Seed size
♀ BG N 1 BG N 2 BG N 4 DF-AB-2 HA-267 IMI-AB-1	I-larger size seeds (3.75 mm) II-smaller size seeds (3.00 mm)	♂ RH-SP SU-RF-49 RHA-N-49	I-larger size seeds (2.50 mm) II-smaller size seeds (2.25 mm)

- Test included four replicates of 100 seeds per replicate
- Test was performed according to ISTA Rules



Filter paper



Soil substrate



Sand



Seed grader



slotted sieves

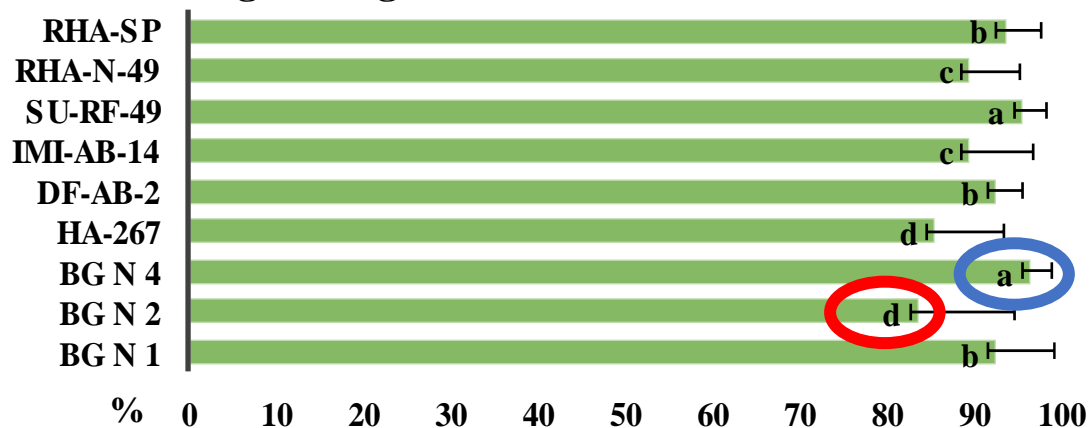
Results

The influence of factors on seed germination of tested inbred sunflower lines

Source	df	F	p
Seed size	1	6.34*	0,013
Substrate	2	20,75**	0,000
Seed size x Substrate	2	5,36**	0,006

p<0,05*: statistic significant difference; p<0,01: statistic high significant difference**

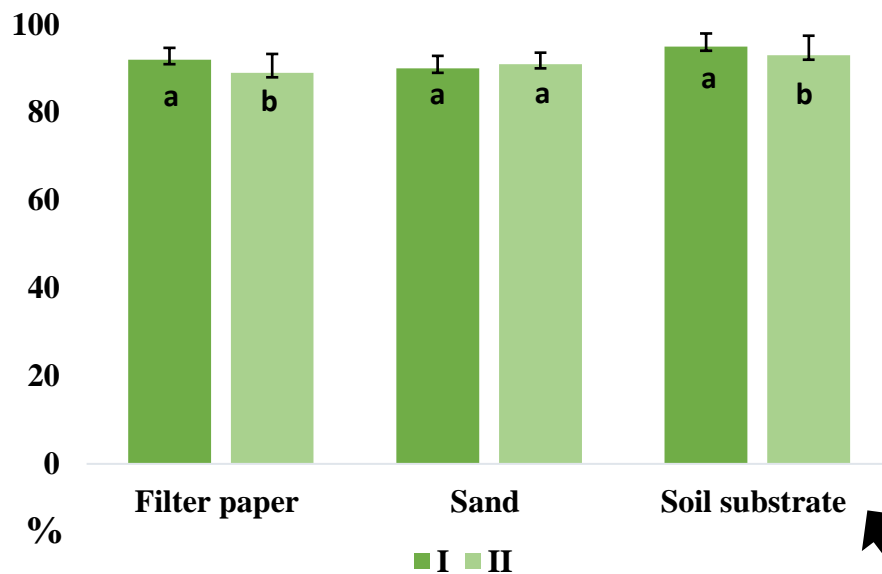
The average seed germination of tested inbred lines



Seed germination of larger and smaller size seeds for inbred sunflower lines tested on different substrates



I-larger size seeds
II-smaller size seeds



Conclusions

Based on the results obtained in this study, it can be concluded :

- Separation of seeds by sizes affects seed germination
- Substrate affects seed germination
- On average on all seed germination substrate, in all tested inbred sunflower lines, larger seeds achieved higher germination than smaller ones, which is statistically significant.
- All inbred lines was recorded average the highest seed germination in soil substrate
- Therefore, it is recommended sowing larger seeds, in order to achieve better seed germination that directly affects the number of plants per unit area.

It all starts and ends with a seed.

Thank you for your attention!

Acknowledgements

This research was supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia, grant number: 451-03-68/2022-14/ 200032, and it was conducted as a part of activities of the Centre of Excellence for Innovations in Breeding of Climate Resilient Crops - Climate Crops, Institute of Field and Vegetable Crops, Novi Sad, Serbia.

