

Feasibility of double cropping system with camelina and sunflower in Serbia

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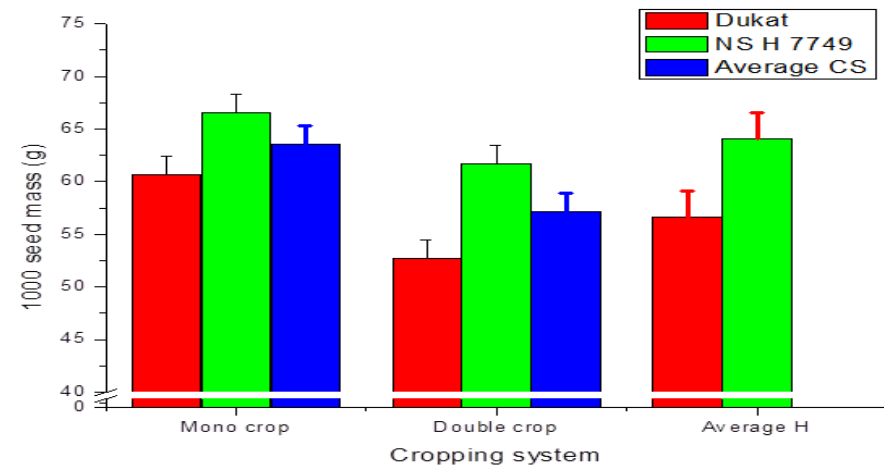
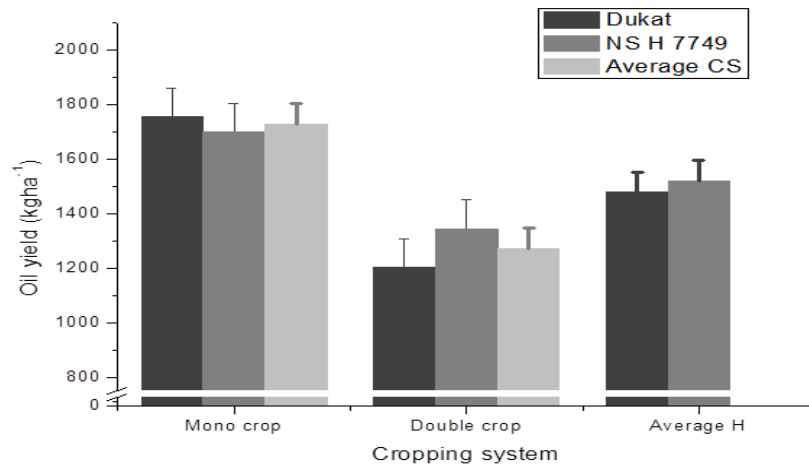
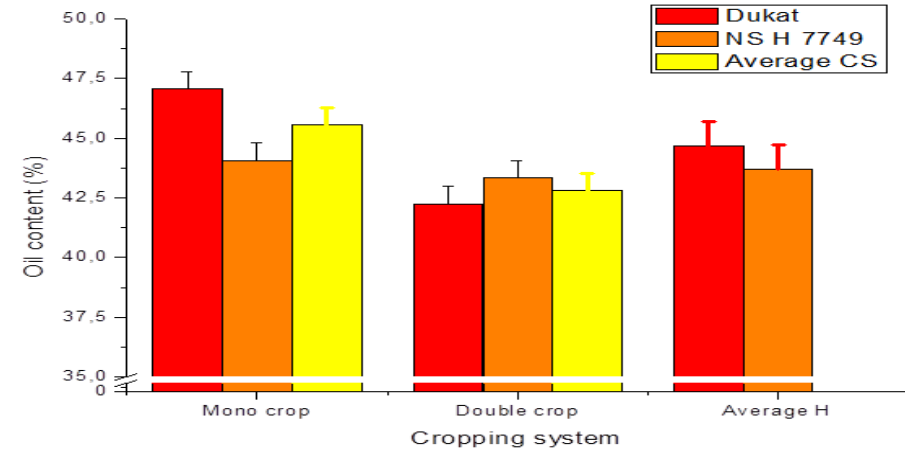
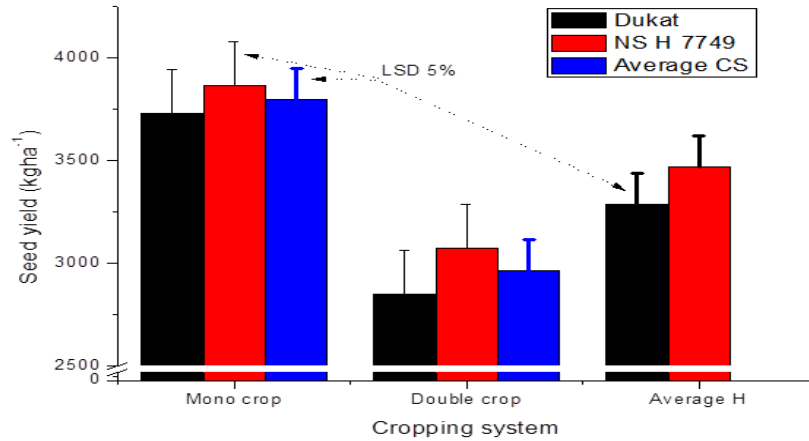
Background

The sustainable production of agricultural commodities, such as vegetable proteins and oils, is currently facing the challenge of developing new cropping strategies more efficient in terms of water, nutrients, and land, while being able to increase the supply of domestic feedstocks. Double cropping of camelina (*Camelina sativa* L.), sown in the autumn, with sunflower (*Helianthus annuus* L.) can be proposed as a sustainable way to produce in the same growing season and land, multiple feedstocks for both energy, feed and food uses.

Method

A preliminary trial was conducted in Novi Sad (Serbia) during the 2018/19 growing season to test: yield performance, oil content and 1000 seed mass of two early sunflower hybrids (NS Dukat and NS H 7749) sown just after the harvest of two camelina varieties (NS Slatka and NS Zlatka). Sunflower hybrids were also grown in the monocropping system as control.

Results



In monocropping as in double cropping system NS H 7749 showed higher seed yield than hybrid NS Dukat. The seed yield of both hybrids were significantly lower in double cropping system. Oil content was in NS Dukat higher in monocropping system, and in double cropping system NS H 7749 showed higher oil content. In monocropping system NS Dukat and NS H 7749 gave almost equal oil yield. In double cropping system higher oil yield was achieved by the hybrid NS H 7749. NS H 7749 in both cropping systems showed higher 1000 seed mass values in relation to hybrid NS Dukat.

Conclusion

These preliminary results indicate that double cropping of camelina with sunflower might represent an attractive system for producers seeking for high yield and new oil products with increased nutritional value (rich in omega-3), with low risk of complete failure due to adverse meteorological conditions having two crops grown in one season. Furthermore, winter soil cover, produced by camelina plants, promotes water infiltration and reduces nutrient leaching making the double cropping system with sunflower characterized by low environmental footprint.