

Study on performance of sunflower hybrids (*Helianthus annuus*) under the conditions of the Southern steppe of Ukraine

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ABSTRACT

The research sought to identify the optimal sunflower hybrids for cultivation in the Southern Steppe of Ukraine. The study focused on climate stress adaptation, yield, oil content and disease resistance to select the best sunflower hybrids for agriculture in the Southern Steppe of Ukraine. The study found that hybrids with a shorter vegetation cycle, such as Lorys SLP (105-107 days), Averno SU (109-115 days), and Insan 222 KLP (109-115 days), were highly adaptable to autumn droughts, allowing them to finish the vegetation period before critical drought conditions, ensuring stable yields even with limited water supply. The hybrid Aluris KLP (105-107 days) had the best yield (4.6-5 t/ha) and oil content (52-54%), although its productivity depended on appropriate moisture during seed filling and ripening. The Aluris KLP hybrid had the highest oil content (52-54%) and oil output (2.29-2.59 t/ha), which increased the crop's economic efficiency. All hybrids are highly resistant to broomrape (races A-G), which helps manage critical diseases under regional settings. The Insan 222 KLP hybrid is promising for growing under strong disease pressure because to its great phomopsis resistance.

Keywords: Agrobiological characteristics, disease resistance, hybrids, oil content, oil output, stress adaptability, vegetation period, yield,