

عنوان مقاله:

Responses of inulin content and inulin yield of Jerusalem artichoke to seasonal environments

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نویسندگان:

D. Puangbut - *Department of Plant Science and Agricultural Resources, Faculty of Agriculture, Khon Kaen University, Khon Kaen, Thailand*

S. Jogloy - *Department of Plant Science and Agricultural Resources, Faculty of Agriculture, Khon Kaen University, Khon Kaen, Thailand*

N. Vorasoot - *Department of Plant Science and Agricultural Resources, Faculty of Agriculture, Khon Kaen University, Khon Kaen, Thailand*

C.C. Holbrook - *United States Department of Agriculture-Agricultural Research Service, Coastal Plain Experiment Station, Tifton, Georgia, USA*

خلاصه مقاله:

Seasonal variation (e.g. temperature and photoperiod) between growing seasons might affect inulin content and inulin yield of Jerusalem artichoke. However, there is limited information on genotypic response to seasons for inulin content and inulin yield. The objective of this study was to investigate the variability in genotypic response to seasons for inulin content and inulin yield of Jerusalem artichoke. Field experiments were conducted during the early-rainy season from June to September 2011 and the post-rainy season from September to December in 2011 and these 2 seasons were repeated in 2012 at the Field Crop Research Station of Khon Kaen University. A randomized complete block design (RCBD) with 5 replications was used. Four Jerusalem artichoke genotypes were studied during both seasons in each year. Data were recorded for brix value, inulin content, tuber yield, inulin yield, biomass and harvest index at harvest. The results revealed that seasonal variations had significant effects on inulin content, inulin yield, tuber yield, biomass and harvest index but not on brix value. The results indicated that growing Jerusalem artichoke in the early-rainy season with high temperature and long photoperiod resulted in greater inulin content and biomass. In contrast, growing Jerusalem artichoke in the post-rainy season with low temperature and short photoperiod resulted in greater tuber yield and inulin yield. The present study revealed that temperature and photoperiod were important for producing tuber yield and inulin yield. This information can be used to select the appropriate growing seasons for sustainable production of inulin content, inulin yield and tuber yield of Jerusalem artichoke in Thailand.

کلمات کلیدی:

Sunchoke, Growing season, Temperature, Photoperiod, Tuber yield, Fructan

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