

EFFECTS OF GLYPHOSATE BANNING AND ADAPTIONS OF MAIZE FARMERS IN DRY ZONE, SRI LANKA

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Maize is an important course grain grown in the dry zone of Sri Lanka. Glyphosate was the most popular and effective weed killer used in maize cultivation until it was banned in 2015. People argue that banning of glyphosate negatively affect the maize cultivation because no substitute was introduced for maize as a weed killer. Hence, the objectives of this study were to identify the effects of glyphosate banning and adaptions methods used by maize farmers. A field survey was conducted using purposively selected 60 farmers from *Kahatagasdigiliya, Horowpathana* and *Galenbindunuwewa* Agricultural Instructor (AI) divisions in *Anuradhapura* district. Time series data from 2000 to 2017 on maize production, cultivation extent, cost of production (COP) and monthly rainfall were collected from Hector Kobbekaduwa Agrarian Research and Training Institute, Provincial Agricultural Department of North Central Province and Department of Meteorology. The effect of glyphosate banning on cultivation extent, maize production and cost of production were analyzed by fitting general linear models. The categorical variable, adequacy of rainfall was used to remove the effect of rainfall. The results revealed that banning of glyphosate has not significantly affected the cultivation extent and yield ($p > 0.05$), while it significantly affected the COP ($p < 0.05$). The average COP per acre has increased from Rs. 47,701 to Rs. 57,254 with banning of glyphosate. About 39% of respondents use herbicides and 28% of respondents use Monosodium glutamate, while 23% of respondents use kerosene oil with other chemicals as alternatives for glyphosate. The study concludes that banning of glyphosate has significantly increased the COP, hence the cost-effective alternative weed control methods should be introduced for the sustainability of maize cultivation.

Keywords: Adaption measures, Cost of Production, Glyphosate, Maize