

**Optimization of Nitrogen and Phosphorus Rates for Grain Yield and Quality of Durum
Wheat () in Koga and Rib irrigation schemes,
Northwestern Ethiopia**

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ABSTRACT

Durum wheat is one of the most important food and cash crops in Ethiopia. However, the productivity of the crop is low due to lack of appropriate agronomic recommendations.

INTRODUCTION

Triticum turgidum

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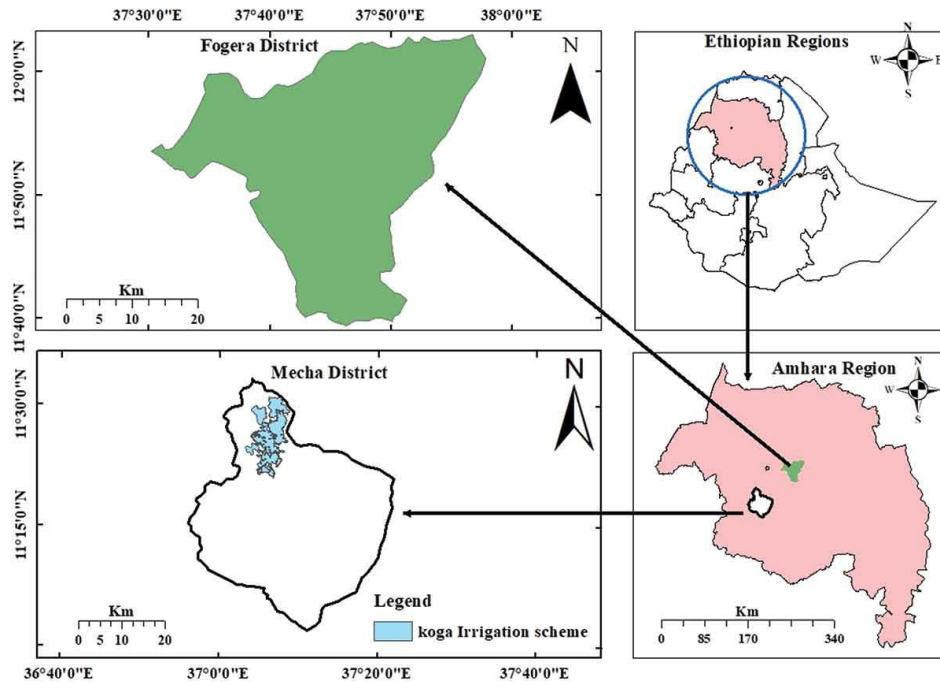
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MATERIALS AND METHODS

Description of the Study Area

et al *Zea mays* *Triticum aestivum* *Brassica oleracea*
Solanum tuberosum *Allium cepa* *Capsicum annum*
Lycopersicon esculentum



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Triticum aestivum *Brassica oleracea* *Solanum tuberosum* *Zea mays*
cepa *Capsicum annum* *Lycopersicon esculentum* *Allium*
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Experimental Setup

Data Collection, Measurement and Analysis

Soil Sample Collection and Analysis

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Partial Budget Analysis

GB (ETB) =

(3)

RESULTS AND DISCUSSION

Initial Soil Properties

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Note: DF=Degree of freedom; TSW=thousand seed weight, **highly significant at $P<0.01$; *significant at $P<0.05$; ns=not significant at $P\geq 0.05$

$P<0.05$

$P<0.05$

$P<0.05$

$P<0.05$

Note: Plant height *TSW = thousand seed weight; ** = highly significant at $P<0.01$; * = significant at $P<0.05$; DF = Degree of freedom; PC = Protein content

$P<0.05$

$P<0.01$

P<0.05

P<0.05

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*Note: *TSW= thousand seed weight; ** = highly significant at $P<0.01$, * = significant at $P<0.05$; ns=non-significant; CV=coefficient of variation; mrl=meter per row length*

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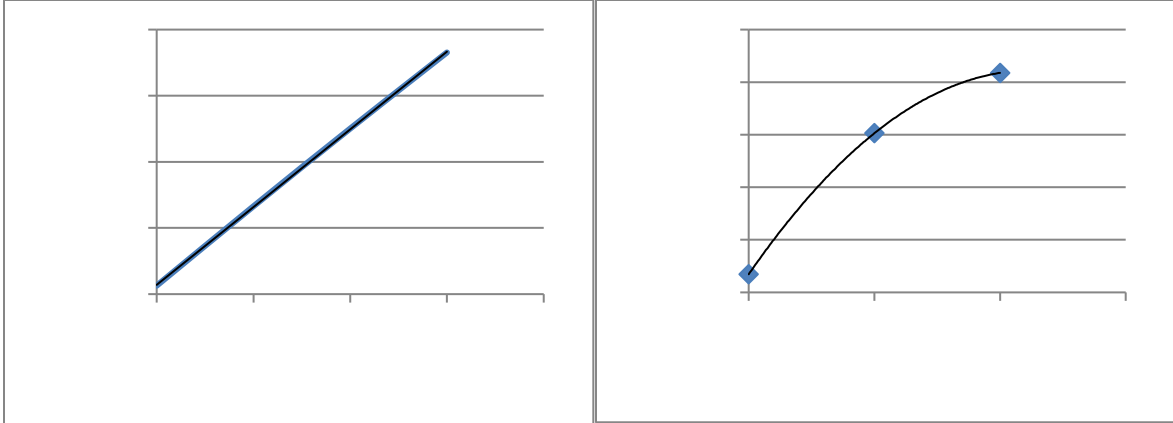
(P < 0.0001)

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Partial Budget Analysis

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Note: *TVC=total variable cost; ETB=Ethiopian birr; urea cost = 11.04 ETB kg⁻¹; DAP cost = 15.61 ETB kg⁻¹; wheat grain price =20 ETB kg⁻¹; D = dominance and MRR= marginal rate of return.

CONCLUSION AND RECOMMENDATION

ACKNOWLEDGEMENT

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