

# Assessment of Genetic Improvement in Grain Yield Potential and Related Traits of Kabuli Type Chickpea (*Cicer arietinum* L.) Varieties in Ethiopia (1974-2009)

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## Abstract

but this increment was not significantly different from zero. This revealed that chickpea breeders have made  
, reflected that a significant increase was recorded for this trait for the last 35 years  
breeding for HM ¥  
. The correlation coefficients showed that grain  
yield was significantly and positively correlated with primary branches plant  
traits. However, HSW which is the economical trait in Kabuli type chickpea showed significant negative association

**Keywords:** Chickpea, Genetic improvement, Grain yield, Kabuli type, Ethiopia

## Introduction

(*Cicer arietinum* L.) is one of the most important leguminous crops in the world. It is a major source of protein and fiber in human diet. Chickpea is grown in 21 countries, with 21 million ha of land area. The world production of chickpea is 1.5 million metric tons annually. Ethiopia is one of the major chickpea producing countries in the world. The country has a long history of chickpea production and has a large area under chickpea production. Chickpea is a major source of protein and fiber in human diet. It is a major source of protein and fiber in human diet. It is a major source of protein and fiber in human diet.

\*Corresponding author:

Received

Accepted

Published

Citation:

*Cicer arietinum*

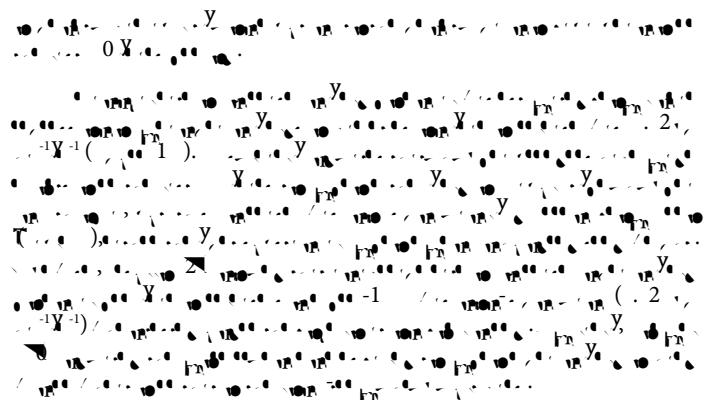
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... Y ... Y ... (0.01) ...  
... 11.20, (-10-), 2.0, ...  
... 2, ... Y ...  
... Y ... ( ... )  
... Y (-10-), Y 1.10, (.2%) ...  
1, 1, 200, 200, 200, 200, 11.20, 2, 2.0, 0,  
2.10, 2.0, Y ... 1.  
(1.0%), 21.0 (12.0%), 2.0 (2.1%), 20.0 (1.2%),  
1.10, (.2%) ... Y ...  
... Y ... Y ...

... -1.(1.0)- (0.0) (0.1) ... (0.0) (0.1) ... (0.1) -1

Variety	Year of release	Mean grain yield (kg ha <sup>-1</sup> )	Increment over DZ-10-4		Mean HSW (g)	Increment over DZ-10-4	
			kg	%		g/HSW	%

Table 4:

Varieties	Year of release	Mean grain yield (kg ha <sup>-1</sup> )	Increment over the older variety (DZ-10-4)		Mean HSW (g)	Increment over the older variety (DZ-10-4)		Mean biomass yield (kg ha <sup>-1</sup> )	Increment over the older variety (DZ-10-4)	
			kg ha <sup>-1</sup>	%		g/HSW	%		kg ha <sup>-1</sup>	%

Table 5:

Variety	Grain yield (kg ha <sup>-1</sup> )	Grain yield increment over local collection		Biomass yield (kg ha <sup>-1</sup> )	Biomass yield increment over local collection		Mean HSW (g)	HSW increment over local collection	
		kg ha <sup>-1</sup>	%		kg ha <sup>-1</sup>	%		g/HSW	%

Table 6:

Traits	Mean	R <sup>2</sup>	b	Intercept
Date of flowering				
Grain filling period				

\*, \*\*=Significant at P 0.05 and P 0.01, respectively.

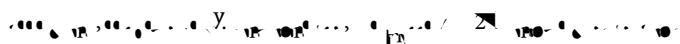
Table 7: Estimates of mean values, coefficient of determination (R<sup>2</sup>), regression coefficient (b), and intercept.





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