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Evaluation of Growth, Yield and Quality of Potato (*Solanum tuberosum* L.) Varieties at Bule, Southern Ethiopia

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This experiment was aimed to evaluate the performance of potato varieties in respect to growth, yield and quality attributes. A field experiment was carried out in Bule, Southern Ethiopia during the summer of 2017 under rain fed condition. The experiment was a single factor and arranged with randomized complete block design with 3 replicates. Treatments included different potato varieties (Bule, Gudenie, Jalenie, Belete, Degemegni and Local variety "Key Dench"). The results showed statistically significant variations in almost all of the parameters. The highest total yield (36.533 t ha^{-1}) and marketable tuber yield (33.985 t ha^{-1}) were obtained from Belete variety, unmarketable tuber yield from Degemegni (5.0370 t ha^{-1}) and Key Dench (8.5036 t ha^{-1}), average tuber weight from Gudenie (58.67g) and Belete (63.38g), large-sized tuber yield from Bule (54.716%), Gudenie (53.81%) and Belete (59.446 %), small-sized tuber from Key Dench (59.576%), days to flowering and maturity from Gudenie (65.7 and 113.3 days, respectively) and Belete (66.3 and 115.67 days, respectively), plant height on Bule (100 cm), stem number in Bule (4.917) and Jalenie (4.583), total and marketable tuber number from Bule (841473 and 477032 ha^{-1}, respectively), unmarketable tuber number on Key Dench (571846 ha^{-1}), tuber dry matter from Bule (22.331%), Gudenie (22.495%), Jalenie (22.653%), Belete (24.088%) and Key Dench (21.961%) varieties. Yield of tuber per hectare was significantly and positively correlated with plant height, days to physiological maturity, large-sized tuber, marketable tuber number and yield. In conclusion, results of the experiment revealed that Belete variety resulted as best total (36.533 t ha^{-1}) and marketable (33.985 t ha^{-1}) tuber yields in Bule, Southern Ethiopia during 2017 rainy season.

Key words: Bule, potato, rainfed, yield, variety.

INTRODUCTION

Potato is one of the main tuber crops grown in Ethiopia. World annual production of potato is about 381, 682, 144 tonnes with area coverage of 19, 098,328 ha. In Africa, total production of potato is about 25, 354, 279 tonnes with total area coverage of 1, 735, 533 ha. In Ethiopia total production is around 921, 832 tonnes with area coverage of 67, 362 ha. Ethiopia has suitable climatic and endemic conditions for potato production. However, the national average yield is about 13.68 t ha^{-1}, which is low compared to the Africa's and world's average production of 14.61 and 20.09 t ha^{-1}, respectively (FAOSTAT, 2014). The major production problems that account for such low yield are unavailability and high cost of seed tubers, lack of well adapted cultivars, poor agronomic practices, diseases, insect pests, inadequate storage, transportation and marketing facilities (Tekalign, 2005). The potential of the potato crop has not been adequately exploited as is clearly illustrated by the low national yield.

None of the variety or cultivar, had many potential which suits in all environments and for all uses (Bradshaw et al., 2007). Different researchers also reported that different potato varieties had different potential on yield and yield components across locations (Berhanu and Tewodros, 2016; Habtamu et al., 2016).

One of the major problems resulting in lower potato productivity in the study area is still many farmers who grow not well adapted (low yielder) varieties according to Bule Worda's Agricultural Office evaluation. Evaluation of selected varieties, are therefore, one of the considerations to ease the existing problems of obtaining the desired varieties for which the output of this study was likely to assist and sensitize potato growers, and which has a great contribution for increment of national average yield. Therefore, to address this problem the study was initiated with the objective of evaluating the performance of potato varieties on growth, yield and quality components at Bule, Southern Ethiopia.

MATERIALS AND METHODS

Study site

The experiment was conducted in 2017 rainy season of the year in which potato is mostly produced at Bule, Southern Ethiopia; which is located 28 km from Dilla town (6 °24'30'' North latitude and 38 °18'30'' East longitude with altitude of 1820 to 3060 m a.s.l). The mean annual temperature of the site is ranges between 12.5-22.5°C and mean annual average rainfall 849.8 mm.

Experimental set up

The treatments consisted of six potato varieties namely Bule, Gudenie, Jalenie, Belete, Degemegni and Key Dench (local cultivar).

The design was a single factor experiment arranged in a randomized complete block, replicated three times. The plot size was 3.75 x 3.6 m. Medium-sized and well-sprouted potato tubers were planted at the spacing of 75 x 30 cm distances. Spacing between plots and replications were separated by 1 and 1.5 m, respectively. Potato tuber was planted in May 5, 2017. Agronomic practices were applied during growing period of the crop (110 Kg nitrogen ha^{-1} and 92 Kg phosphorous ha^{-1} fertilizer and 3 hilling until canopy closure for weed control). Harvesting was done at physiological maturity when the leaves of the potato plants senesced.

Description of cultivars

The selected varieties of potato named 'Bule, Gudenie, Jalenie, Belete and Degemegni collected from Hawasa Agricultural Research Center and Key Dench from local farmers were used for the experiment (Table 1).

Data collection

Time to flowering was recorded when 50% of the population reached the flowering stage. Time to physiological maturity was recorded when 70% of plants leaves turned yellowish. Plant height was determined by measuring stem height from the base of the main shoot to the apex at full blooming. Number of stems per hill was recorded as the average stem count of five hills per plot during the flowering stage. Only stems arising from the mother tuber were considered as main stems. Tuber number per hill was recorded by counting the average number of tubers during harvesting from five sample plants. Average tuber weight per hill was determined on the basis of total tuber weight produced per plant divided by total tuber number counted per plant at harvest. It was taken from 5 plants during harvest. Weight and number of marketable tubers yield were recorded as the weight and the number of marketable tubers that were free from diseases, insect pests, and greater than or equal to 25 g in weight (Lung'aho et al., 2007). These were taken from plants in the net plot area at harvest. Weight and number of unmarketable tubers yield were determined as the weight and the number of unmarketable tubers (culls) of each plot which included rotten, insect attacked and undersized tubers (less than 25 g) (Lung'aho et al., 2007). These were taken from plants in the net plot area at harvest. Total tuber number and yield were recorded as the sum of number and yield of marketable and unmarketable tuber. Size categories of tuber were recorded by taking all tubers from five randomly-selected plants and categorizing them into small (< 39 g), medium (39-75 g), and large (>75 g) according to (Lung'aho et al., 2007). Dry matter content of tuber (%) was taken from five fresh tubers randomly selected in each plot and weighed. Tubers were sliced and dried in an oven at 70°C until constant weight. Dry weight was recorded and dry matter percent was calculated according to Williams and Woodbury (1968) as:

$$\text{Dry matter}\,(\%) = \frac{\text{Weight of sample after drying}}{\text{Initial weight of sample}}\,x100$$

Data analysis

All crop data were subjected to analysis of variance, using SAS software version 9.1. Means that differed significantly were separated using the LSD procedure. Simple linear correlations between parameters were computed.

RESULTS

Time to flowering and maturity

Potato genotype differences significantly influenced both days required to attain 50% flowering and 70% of maturity (Table 2). The longest days required to attain50% flowering and 70% maturity were recorded on Belete (66.3 and 115.6 days) and Gudenie (65.7 and 113.3 days) varieties, while the earliest in local varieties Key Dench (46.7 and91.7 days) and Degemegni (93.3 days to maturity), respectively.

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Table 1. Description of potato varieties.

S/N	Potao Varieties	Released Year	Breeder/Maintainer	Recommended Altitude (m.a.s.l)
1	Bule	2005	Hawassa Agricultural Research Center	1700-2700
2	Gudenie	2006	Holeta Agricultural Research Center	1600-2800
3	Jalenie	2002	Holeta Agricultural Research Center	1600-2800
4	Belete	2010	Holeta Agricultural Research Center	1600-2800
5	Degemegn	2002	Holeta Agricultural Research Center	1600-2700
6	Key Dench	-	Local cultivar	-

Source: (Ministry of Ethiopian Agriculture and Rural Development, 2009)

Table 2. Response of potato varieties in respect to days to 50% of flowering and 70% maturity, plant height, stem and tuber number per hill.

Varieties	Days to 50% flowering	Days to 70% maturity	Plant height (cm)	Stem number	Tuber number per hill
Bule	51.3^{b}	103.3^{b}	100.00^{a}	4.917^{a}	18.933^{a}
Gudenie	65.7^{a}	113.3^{a}	95.92^{ab}	4.333^{ab}	10.333^{c}
Jalenie	53.7^{b}	101.67^{b}	91.667^{bc}	4.583^{a}	12.333^{bc}
Belete	66.3^{a}	115.67^{a}	96.667^{ab}	4.000^{ab}	12.933^{abc}
Degemegni	52.3^{b}	93.3^{c}	84.667^{c}	2.500^{c}	9.800^{c}
Key Dench	46.7^{c}	91.67^{c}	73.00^{d}	3.083^{bc}	18.533^{ab}
Level of Significance	***	***	***	*	*
CV (%)	2.82	2.71	5.22	19.6	26

Means followed by the same letter within a column are not significantly different at 5 % level of significance

Plant height, stem number and tuber number per hill

Potato genotype differences significantly influenced plant height, stem number and tuber number per hill (Table 2). The highest plant height were recorded for variety Bule (100 cm), Gudenie (95.917 cm) and Belete (96.667 cm) while the shortest in local variety Key Dench (73 cm). The highest numbers of main stem per plant were recorded on Bule (4.917), Gudenie (4.333), Jalenie (4.583) and Belete (4.000) varieties while the lowest on Degemegni (2.500) and local variety Key Dench (3.083) (Table 2). Highertubernumbers per hill were produced by Bule (18.933) and the lowest on Key Dench (9.8) and Gudenie (10.33) (Table 2).

Average tuber weight, total, marketable and unmarketable tuber number

Potato genotypes differed significantly in respect of influenced average tuber weight, total, marketable and unmarketable tuber number (Table 3). Belete (63.38 g) and Gudenie (58.67 g) produced higher average tuber weight while local variety Key Dench (25.41 g) lowest average tuber weight per hill. The higher total and marketable tuber numbers per hectare were obtained on variety Bule (841473 and 477032, respectively) while the lower on variety Gudenie (459255) and Degemegni (435551) for total tuber number and Degemegni (219257) and local variety Key Dench (251849) for marketable tuber number. In another way, the more number of unmarketable tuber numbers was recorded on local variety Key Dench (571846) while the lower on variety Gudenie (145184) and Belete (130369) (Table 3).

Total, marketable and unmarketable tuber yield

Potato genotype differences significantly influenced total, marketable and unmarketable tuber yield (Table 4). The higher total and marketable fresh tuber yield were attained on variety Belete (36.533 t ha^{-1} and 33.985t ha^{-1}) and Bule (30.696 t ha^{-1} and 26.992 t ha^{-1}) and the lower on variety Degemegni (17.422 t ha^{-1} and 12.385 t ha^{-1}) and Key Dench (20.355 t ha^{-1} and 11.852 t ha^{-1}), respectively. The total and marketable tuber yield produced by variety Bule was in statistically parity with Gudenie and Jalenie. On the other hand the higher unmarketable tuber yields were obtained on potato variety Degemegni (5.0370 t ha^{-1}) and Key Dench (8.5036 t ha^{-1}), while the lower on Gudenie (1.8666 t ha^{-1}) and Belete (2.5481 t ha^{-1}) varieties.

In the present study positive and significant correlation was observed between total tuber yield and large-sized

Table 3. The response of potato varieties in term of average tuber weight per hill, total, marketable and unmarketable tuber number per hectare.

Varieties	ATW (g hill^{-1})	TTN ha^{-1}	MTN ha^{-1}	UMTN ha^{-1}
Bule	37.76^{bc}	841473^{a}	477032^{a}	364441^{b}
Gudenie	58.67^{a}	459255^{c}	314071^{c}	145184^{c}
Jalenie	47.89^{ab}	548143^{bc}	328886^{bc}	219257^{bc}
Belete	63.38^{a}	574809^{abc}	444440^{ab}	130369^{c}
Degemegni	40.62^{bc}	435551^{c}	219257^{c}	216294^{bc}
Key Dench	25.41^{c}	823695^{ab}	251849^{c}	571846^{a}
Level of significance	**	*	**	**
CV (%)	19.87	26	20.86	38.43

Means followed by the same letter within a column are not significantly different at 5 % level of significance. ATW= Average tuber weight; TTN= Total tuber number, MTN= Marketable tuber number, UMTN= Unmarketable tuber number.CV (%) – Coefficient of variation.

Table 4. The response of total, marketable and unmarketable tuber yield per hectare to potato varieties.

Varieties	TTY (t ha^{-1})	MTY (t ha^{-1})	UMTY (t ha^{-1})
Bule	30.696^{ab}	26.992^{ab}	3.7037^{bc}
Gudenie	25.363^{bc}	23.496^{b}	1.8666^{c}
Jalenie	25.481^{bc}	21.778^{b}	3.7037^{bc}
Belete	36.533^{a}	33.985^{a}	2.5481^{c}
Degemegni	17.422^{c}	12.385^{c}	5.0370^{a}
Key Dench	20.355^{c}	11.852^{c}	8.5036^{a}
Level of significance	**	**	***
CV (%)	17.66	20.47	26.19

Means followed by the same letter within a column are not significantly different at 5 % level of significance. TTY= Total tuber yield, MTY= Marketable tuber yield and UMTY= Unmarketable tuber yield. CV (%), Coefficient of variation.

tuber percentage (r= 0.52*), positive and highly significant with plant height (r= 0.6**) and days to maturity (r=0.61**) and positive and very highly significant correlation with marketable tuber number and yield (r= 0.90*** and 0.97***, respectively) (Table 6).

Large, medium and small-sized tuber yield (%) and tuber dry matter (%)

Potato genotype differed significantly in terms of large, small-sized tuber yield (%) and tuber dry matter (%),while non-significantly in respect of medium-sized tuber (Table 5). The higher, proportion of large-sized tuber yield (%) were recorded on varieties Bule (54.716%), Gudenie (53.818%) and Belete (59.44%) and for small- sized tuber yield (%) in local variety Key denchi (59.576%), while the lowest proportion in Key Dench (8.108 %) for large-sized and Bule (11.532%), Gudenie (15.628%) and Belete (11.519%) for small-sized yield (%). The lowest tuber dry matter (%) was recorded in Degemegni variety, while the higher in others (Table 5).

DISCUSSION

The variation in total and marketable tuber yield of potato varieties might be associated with genotypes difference among varieties. In agreement with the present findings, a significant difference in total and marketable tuber yield among potato varieties was reported by Berhanu and Tewodros (2016) and Habtamu et al. (2016). Also, Elfinesh (2008) stated yield differences among genotypes were attributed both by the inherent yield potential of genotypes and growing environment as well as the interaction of genotype x environment. Yield variation among varieties also indicated that increment of plant height, large-sized tuber yield, marketable tuber number and yield and prolonged time of maturity could be

Table 5. The response of potato varieties in respect of large, medium and small-sized and dry matter tuber percentage.

Varieties	Size categories of tubers			Tuber dry matter (%)
	LSTY (%)	MSTY (%)	SSTY (%)	
Bule	54.716[a]	33.707	11.532[c]	22.331[a]
Gudenie	53.818[a]	30.554	15.628[c]	22.495[a]
Jalenie	41.349[ab]	36.538	22.113[bc]	22.653[a]
Belete	59.446[a]	29.035	11.519[c]	24.088[a]
Degemegni	29.478[b]	34.919	35.603[b]	19.258[b]
Key Dench	8.108[c]	32.319	59.576[a]	21.961[a]
Level of significance	**	Ns	***	*
CV (%)	25.54	24.99	30.06	5.72

Means followed by the same letter within a column are not significantly different at 5 % level of significance. LSTY= Large-sized tuber; MSTY= Medium-sized tuber; SSTY= Small-sized tuber;TDM= Tuber dry matter.

Table 6. Simple correlation coefficient among different parameters.

Parameter	DTF	DTM	PH	SN	ATW	TNP	TTN	MTN
DTF	1.00	0.88***	0.56*	0.23NS	0.85***	-0.44NS	-0.44NS	0.29NS
DTM	0.88***	1.00	0.73***	0.57*	0.75***	-0.25NS	-0.25NS	0.50*
PH	0.56*	0.73***	1.00	0.62**	0.53*	-0.11NS	-0.11NS	0.68**
SN	0.22NS	0.57*	0.62**	1.00	0.24NS	0.12NS	0.12NS	0.57*
ATW	0.85***	0.75***	0.53*	0.24NS	1.00	-0.66**	-0.66**	0.16NS
TNP	-0.44NS	-0.25NS	-0.11NS	0.12NS	-0.65**	1.00	1.00***	0.54*
TTN	-0.44NS	-0.25NS	-0.11NS	0.12NS	-0.65**	1.00***	1.00	0.54*
MTN	0.29NS	0.50*	0.68**	0.57*	0.16NS	0.54*	0.54*	1.00
UMTN	-0.70**	-0.62**	-0.55*	-0.21NS	-0.88***	0.85***	0.85***	0.01NS
TTY	0.52*	0.61**	0.60**	0.44NS	0.44NS	0.31NS	0.31NS	0.90***
MTY	0.64**	0.74***	0.73**	0.51*	0.59**	0.14NS	0.14NS	0.87***
UMTY	-0.76***	-0.82***	-0.83***	-0.48*	-0.80***	0.50*	0.50*	-0.37NS
LSTP	0.70**	0.79***	0.74***	0.53*	0.77***	-0.37NS	-0.37NS	0.43NS
MSTP	-0.27NS	-0.26NS	0.10NS	0.02NS	-0.34NS	0.25NS	0.25NS	0.19NS
SSTP	-0.65**	-0.75***	-0.84***	-0.58*	-0.70**	0.30NS	0.30NS	-0.54*
TDMP	0.38NS	0.60**	0.30NS	0.52*	0.22NS	0.16NS	0.16NS	0.45NS

***, ** and *= Correlation is significant at 0.001, 0.01 and 0.05, respectively. NS= non significant; DTF= Days to 50 % of flowering; DTM= Days to 50% of flowering; SN= Stem number; PH= Plant height; ATW= Average tuber weight; TNP= Tuber number per plant; TTN= Total tuber number; MTN= Marketable tuber number; UMTN= Unmarketable tuber number; TTY= Total tuber yield; MTY= Marketable tuber yield; UMTY= Unmarketable tuber yield; LSTP= Large-sized tuber percentage; MSTP= Medium-sized tuber percentage; SSTP= Small sized tuber percentage; TDMP= Tuber dry matter percentage.

considered as a factor contributing to higher total tuber yield. In line with this study Girma and Niguisse (2015) who reported that total tuber yield was positively and highly significantly correlated with marketable tuber number and large-sized tuber yield. Similarly, Zami et al. (2010) also reported that plant height was positively and significantly correlate with tuber yield.

The variation observed in non-marketable yield of the genotypes in this study may be due to crop adaptability, crop maturity and inherent ability of potato genotypes in producing unmarketable tubers yield. In line with finding, Berhanu and Tewodros (2016), Habtamu et al. (2016) and Elfinesh (2008) reported that unmarketable tuber was influenced by varietal difference on potato crop.

The result of this study showed the variations of days required in attaining 50% flowering and 70% maturity among varieties. This result may also be attributed to genetic differences. This result is in agreement with that of Berhanu and Tewodros (2016), Habtamu et al. (2016), Girma and Niguisse (2015) and Tekalign (2005) who have reported that days required in attaining maturity period in potato depends on cultivars and environmental factors. Similarly, Vreugdenhil (2007) reported that days required to attain 50% flowering is highly dependent on

Table 6. Simple correlation coefficient among different parameters (continued).

Parameter	UMTN	TTY	MTY	UMTY	LST	MST	SST
DTF	-0.70**	0.52*	0.64**	-0.76***	0.69**	-0.27NS	-0.65**
DTM	-0.61**	0.61**	0.73***	-0.82**	0.79***	-0.26NS	-0.75***
PH	-0.55*	0.6**	0.73***	-0.83***	0.74***	0.10NS	-0.84***
SN	-0.21NS	0.44NS	0.51*	-0.48*	0.53*	0.02NS	-0.58*
ATW	-0.88***	0.44NS	0.59**	-0.80***	0.77***	-0.34NS	-0.70**
TNp	0.85***	0.31NS	0.14NS	0.48*	-0.37NS	0.25NS	0.30NS
TTN	0.85***	0.31NS	0.14NS	0.48*	-0.37NS	0.25NS	0.30NS
MTN	0.01NS	0.90***	0.87***	-0.38NS	0.43NS	0.19NS	-0.54*
UMTN	1.00	-0.19NS	-0.38NS	0.80***	-0.71***	0.17NS	0.69**
TTY	-0.19NS	1.00	0.97***	-0.43NS	0.52*	0.07NS	-0.59*
MTY	-0.38NS	0.97***	1.00	-0.64**	0.67**	0.02NS	-0.73***
UMTY	0.80***	-0.43NS	-0.64**	1.00	-0.84***	0.15NS	0.84***
LST	-0.71***	0.52*	0.67**	-0.84***	1.00	0.02NS	-0.93***
MST	0.18NS	0.07NS	0.02NS	0.15NS	-0.38NS	1.00	0.01NS
SST	0.69**	-0.59*	-0.73***	0.84***	0.02***	-0.37NS	1.00
DMP	-0.09NS	0.52*	0.50*	-0.20NS	0.32NS	-0.05NS	-0.03NS

***; ** and *= Correlation is significant at 0.001; 0.01 and 0.05; respectively. NS= non significant; DTF= Days to 50 % of flowering; DTM= Days to 50% of flowering; SN= Stem number; PH= Plant height; ATW= Average tuber weight; TNP= Tuber number per plant; TTN= Total tuber number; MTN= Marketable tuber number; UMTN= Unmarketable tuber number; TTY= Total tuber yield; MTY= Marketable tuber yield; UMTY= Unmarketable tuber yield; LSTP= Large-sized tuber percentage; MSTP= Medium-sized tuber percentage; SSTP= Small sized tuber percentage; TDMP= Tuber dry matter percentage.

gene factors and governed by many environmental factors, mainly temperature and light.

The significant differences in plant height were observed among varieties in this study. This result is in agreement with those of Berhanu and Tewodros (2016), Elfinesh (2008) and Girma and Niguisse (2015) who reported that plant height varied with potato varietal differences. This suggestion is also consistent with that of Sing and Singh (1973) who reported that plant height is a quantitative trait controlled by many genes, and is highly influenced by environmental factors like nutrient status of the soil, available moisture and intercepted radiation.

The observed difference in stem number among varieties in this study might be attributed to genetic differences, which in turn influence the number of sprouts or eyes on the tubers. This result is consistent with those of Berhanu and Tewodros (2016), Habtamu et al. (2016) and Morena et al. (1994) study who reported that the number of stems per plant is influenced by variety. The number of stems in a tuber varies considerably depending on many factors such as variety, storage condition of tuber, size of tuber, inherent variations in the number of buds per tubers or number of viable sprouts at planting, sprout damage at the time of planting, physiological age of the seed tuber and growth conditions (Allen, 1978).

The variation of average tuber weight might be associated to an inherit potential of the genotypes. In line with this study, Habtamu et al. (2016) who reported that average tuber weight varies with potato varieties and the highest recorded on Belete (105.24 g) according to their result. The variation in total, marketable and non-marketable tuber number of potato varieties might be associated with inherent ability of potato genotypes in producing these tubers. In line with this findings, Habtamu et al. (2016) and Khalafalla (2001) reported the difference in number of tubers could have been attributed to the difference in genetic makeup of varieties. Allen (1978) showed that the number of tubers set by plants was determined by stem density, variety, crop management and season.

Large and small-sized tuber yield percentage variations among potato varieties was observed in this findings which might be due to the inherent characteristics of the cultivars used. In line with this study, Berhanu and Tewodros (2016), Habtamu et al. (2016) and Girma and Niguisse (2015) reported that tuber size distribution varied with varieties. In contrast to the current findings, the above authors reported the variation of medium sized tubers on varieties. Also, in confirmation with the findings of Patel et al .(2008) and Kumar et al. (2007) who reported that maximum yield of small size tubers may be due to higher number of tubers as well as varietal character, adaptability or establishment effects of the other growth attributes. Similarly, this study result is in agreement with those of Beukema and Vanderzaag (1990) who observed that the variation larger sized tuber number variation among cultivars could be genetic.

The observed differenece on tuber dry matter production might be attributed to varieties inherent differences. In line with findings, Berhanu and Tewodros (2016), Girma and Niguisse (2015) and Tekalign and

Hammes (2005) also reported that cultivars differed significantly with respect to total dry matter production. All varieties except Degemegniproduced tuber dry matter percentage of greater than 20% which is acceptable range for processing. Kabira and Berga (2003) justified that potato tubers containing high dry matter of 20 to 24% produce fried products with high yields, less oil absorption and having better texture than those with lower solids.

In general, this finding indicates the variation of growth, yield and yield components of potato and can be manipulated with proper selection of potato variety in the study area.It could, thus be concluded thatBelete variety leads to optimum production of total (36.5 t ha- 1) and marketable (33.99 t ha- 1) tuber yields in Bule district Southern Ethiopia, under rain fed condition.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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