INTRODUCTION

Horticultural crops especially vegetables and fruits can contribute to food and nutritional security demands in Ethiopia by providing healthy and sustainable foods for consumers due to their rich source of vitamins, minerals and antioxidants (Emana et al., 2015; Wubet et al., 2022).

However, farmers growing vegetable crops are facing challenges of production inputs, skills and technologies, high economic and quality losses, because there have been no methods of such improved production potentials and practices sustainable in increasing the shelf life and quality of these crops and market access to generate income from vegetable crops.

Objective

The study was aimed to determine production potentials and practices of technologies used for potato and tomato vegetables productivity improvement in Tiyo and Ziway-Dugda Districts of the country.

METHODOLOGIES

➢ This study was conducted in 10 kebeles from two districts (Tiyo & Ziway-Dugda) of Arsi Zone, Oromia Region, Ethiopia in two potential vegetable producing districts.

➢ A multistage sampling technique was used to select representative producers.

➢ Primary data were collected from producers using semi-structured interview guided questionnaires developed in KOBÖ Software using tablet computer.

➢ Statistical package for social science (SPSS) version 22 was used for computing data. Percentages, means, Standard deviation, and tabulated in the process of examining and describing production potentials, resources, inputs, services and technologies practices in the study areas.

RESULTS

Land resources and production experiences:

➢ There was a significant difference between farmers in Zway-Dagda (Tomato) and in Tiyo (Potato) in the two crops cultivation, land use and cost incurred in the study areas which has impact on productivity of crops.

Table 1: Years of experience and land allocated to potato (Tyio) and tomato (Ziway-Dugda) production in the last cropping season of 2020/21 (Descriptive Statistics)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Potato</th>
<th>Tomato</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience in production (Years)</td>
<td>Tomato</td>
<td>191</td>
<td>1.00</td>
<td>40.00</td>
<td>7.0</td>
<td>6.52</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total respondent</td>
<td>400</td>
<td>1.00</td>
<td>60.00</td>
<td>14.0</td>
<td>9.88</td>
<td></td>
</tr>
<tr>
<td>Land amount rented to cultivate (ha)</td>
<td>Tomato</td>
<td>52(193)</td>
<td>0.125</td>
<td>35.50</td>
<td>3.37</td>
<td>3.22</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total respondent</td>
<td>69(209)</td>
<td>0.063</td>
<td>4.00</td>
<td>0.53</td>
<td>0.73</td>
<td></td>
</tr>
<tr>
<td>Total area used during 2020/21 cropping season (ha)</td>
<td>Tomato</td>
<td>191</td>
<td>0.125</td>
<td>30.00</td>
<td>2.07</td>
<td>2.04</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total respondent</td>
<td>209</td>
<td>0.250</td>
<td>6.00</td>
<td>1.78</td>
<td>2.05</td>
<td></td>
</tr>
</tbody>
</table>

Production practices:

➢ Majority farmers have used various production practices; but still other farmers are not using the various production practices for potato and tomato.

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*Contact Address: Diriba-Asfaw Geleta (PHD): Email: dagex2701@gmail.com or diriba.geletageta@yahoo.com or diriba.asfaw@arsiu.un.et

**Authors:**

1. DIRIBA-SHIFERAW GELETA*, SISAY YIFRUK, ZEGEYE TIRFE, SAMUEL MEZEMBER, BEZAWIT SEIFU, DEKEBA MOGES, SAMUEL W/OYANES, ANIS OZANIKOVIC, BERNO MÜLLER
2. Department of Horticulture and Plant Sciences, College of Agriculture and Environmental Science, Arsi University, P.O. Box 193 Asella, Ethiopia.
3. Department of Agricultural Economics, College of Agriculture and Environmental Science, Arsi University, P.O. Box 193 Asella, Ethiopia.
4. Department of Food Science and Postharvest Technology, College of Agriculture and Environmental Science, Arsi University, P.O. Box 193 Asella, Ethiopia.
5. Department of Agribusiness and Value Chain Management, College of Agriculture and Environmental Science, Arsi University, P.O. Box 193 Asella, Ethiopia.
6. Weihenstephan-Triesdorf University of Applied Sciences (HSWT); International School. Markgrafenstrasse 16 | 91746 Weidenbach | Germany

BIBLIOGRAPHY