



ISSN 2278 – 0211 (Online)

## Work Skills Required by Secondary School Leavers for Entry into Tomato Production Enterprise in Benue State

**Shishi, C. M.**

Student, Department of Agricultural Education, Federal University of Agriculture, Makurdi, Nigeria

**Wombo, A. B.**

Lecturer, Department of Agricultural Education, Federal University of Agriculture, Makurdi, Nigeria

### **Abstract:**

*This paper identified work skills required by secondary leavers for entry into tomato production in Benue State, Nigeria. Three research questions were formulated to guide the study. Survey research design was employed for the study. The study was carried out in Benue State, Nigeria. The population of the study 300, made up of 200 registered tomato farmers and 100 Agricultural Extension Officers in Benue State were used for the study. Hence, the sample size of the study was 164, which consist of 100 registered tomato farmers and 64 agricultural extension agents. A-32 work skills on tomato production questionnaire was the instrument used for data collection. The instrument was face validated by three experts and with a Cronbach alpha reliability coefficient was used to determine internal consistency of the instrument which yielded reliability coefficient of 0.89. One hundred and sixty-four copies of the questionnaire were administered to the respondent's while one hundred and sixty copies were retrieved and analyzed using independent t-test to test the hypotheses. Findings from the study revealed that prospective farmers in Benue state required work skills in planning, nursery and pre-planting operations for entry into tomato production. It was recommended amongst others that tomato farmers in Benue State should be trained for skill acquisition centres in tomato production using the identified entrepreneurial skills in okra production and marketing. And it should be developed into training modules by Agricultural Extension Officers and administrators of skill acquisition centres for training interested individual especially the secondary school leavers.*

**Keywords:** Work skills, secondary school leavers, production, Farmers enterprise, Extension agents'

### **1. Introduction**

Tomato (*Lycopersicon esculentum mill*) from the family of *Solanaceae*, is an edible fruit vegetable originated from South America Aden. It evolved probably from *Lycopersicon esculentum Var.* It was domesticated and first cultivated in Central America by the early Indians of Mexico. Tomato was spread round the world, following the Spanish colonization of the Americans (KwaZulu-Natal, 2001). Tomato plant typically grows from 1-3metres (3-10feet) in height and has weak stems or vines that grow on the surface of the soil and it is a crop that grown out-doors in temperate climates as an annual (Nwabuisi, 2005).

Tomato is grown as an annual crop, it's a branching herbaceous plant with hairy weak trailing stems, the leaves are hairy vary in size and color ranging from red, pink to yellow when trapped flat, slightly curved, hairy, light brown seeds are produced. The essential part of tomato is the fruit. Botanically the fruit is berry and it has two or more curvatures contained in the matrix that softens as the fruit matures and seeds are fully developed (Nell and Wessel, 2006).

According to KwaZulu-Natal (2001), many new cultivars of tomato are widely grown often in green houses and in cooler climates such as RomaVF that could be grown from winter spring to summer. It takes between 120 to 150 days to mature. The choice of cultivar is based on the fruits quality, adaptability, diseases, pests, plant growth habits, the specific market and planting period. The author further stated that fresh market cultivars include Fortress, Hytec, and Star 9001; 9003, Sundance. Thus, the fresh market cultivars that have long shelf life are, Baldo, Zeal, black buster, Disco P747 and Shirley. The preservatives include HTX14, UC82B, Money maker, California wonder, and Ronita respectively.

Tomato fruits as explained by Nell and Wessel (2006) are used in various ways: Ripped tomatoes are consumed fresh or processed into puree, pastes, powder, ketch-up (tomato sauce), and soup or canned as whole fruits. Authors further explained that tomato extracts, has been used to treat various ailments in traditional medicine. In Japan, Greece, Peru, and Guatemala, hot water extract of dried fruits has been used for treatment of ulcers, hemorrhoids and burn while, tomato poultice has been used in the treatment of edema in pregnant women. Fresh tomatoes fruits apparently aid in digestion and treat kidney diseases and liver problem. The fruit is also rich in lycopene (organic compound: a red carotenoid pigment found in tomato fruit) and vitamin C.

Tomato as stated by Nwabuisi (2005) has high nutritional value, rich in vitamins A and B in the human diet. The economic values of the crop are enormous in many respects: the disease resistance tomato cultivars or varieties for example, increase productivity and ultimately the income of the tropical vegetable farmers. Large-scale cultivation of this variety implies more income and raw material. Tomato provides raw materials for Agro-based industries producing tomato puree, paste, powder, ketchup (tomato sauce) and soup or canned the whole traits are produced from the tomato fruit (Nell and Wessel, 2006).

Tomato economy according to Ogunniyi and Oladejo (2011), has not only contributed to the share of agriculture in national economy, but also as one of Nigeria's great potential with a comparative advantage to compete in the liberalized economy. Ogunniyi *et al.* (2011) further explained that tomato as fruit vegetable is not only important as a protective food but highly beneficially for the maintenance of health and prevention of disease. It is a source of livelihood for small-scale farmers and a potential export crop. Fateh (2009) posited that the tomato fruit is the single most common stable fruit in most kitchens across the globe and it guarantees food security all year round.

The presidential initiative on vegetable should therefore, paved a way for successful tomato production as an enterprise for self-reliance Atini (2013). The author further posited that the government has shown committed interest in improving living standard of her citizenry through vegetable crop production. In this regard, the government of the federation established a skill acquisition center i.e. 'North Central Zone Entrepreneurship Center,' in Makurdi the Benue capital; commissioned on 13<sup>th</sup> March, 2013 to train the youths in various skills acquisition programmes. These include agriculture, especially in the areas of crop and animal production. Similarly, the Federal University of Agriculture Makurdi, extension unit is set out to train farmers in vegetable crop production including tomato production enterprise.

Benue state has comparative economic and climatic advantage over other states in Nigeria in tomato production. This potential is unfortunately underutilized, because cultivation done by subsistence farmers who are mostly aged people. The population of youths in tomato production is low in Benue state. Unfortunately, these youths who would take over are not encourage in practical agriculture and have inadequate basic requisite skills in various stages of tomato production. A number of factors have undermined the production of the crop in Benue State such as post-harvest management is a principal factor.

According to Food and Agriculture Organization (2007) tomato crop is grown universally and requires a high level of management, large labour, capital inputs and close attention to details. It further explained that tomato production is subject to the variations that occur in weather, which may result in severe crop damage and losses. Labour requirements for production, harvesting, packaging and transporting are very intensive. Tomato production requires basic farming skills and experiences. Production Guidelines for Tomato (2001) postulated that vegetable production is mental and labour intensive enterprise. Basic training in agronomic principles, experience in the same field are critical inputs. The guideline further explained that some managerial skills are important once production goes commercial and the business becomes competitive. Production of tomato involves certain activities and stages. FAO (2005) categorized activities in crop production to include nursery, pre-planting, planting, post planting, and post harvesting and marketing operations.

Nursery is the practice of planting or broadcasting tomato seeds on nursery beds to raise seedlings for transplanting in the field. Jared (2010) posited that in nursery, seedlings are raised on beds of size 3x0.6 meters and 10-15cm in height that are prepared. About 70cm distance is kept between two beds to carry out operations of watering, weeding among others. The surface of the beds should be smooth and well leveled. Sieved Farmyard Manure (FYM) and fine sand are used in covering the seedbed. Raised beds are necessary to avoid problem of water logging in heavy soils. However, beds. To avoid seedlings mortality from the soil borne diseases the soil should be treated with chemicals (e.g. Bavistin 15.20g/10litres).

Pre-planting operations are the cultural activities carried out before the actual planting of the crop. According to Emedo and Emedo (2005), pre-planting is an all-important aspects of farming activities carried out on the farm before sowing the crops. The authors further stated that pre-planting operation involves choosing of site, clearing, stumping, plotting, tillage, plowing, harrowing and ridging, before bringing the crop either to the nursery or in the field.

This has implication for income returns to tomato farmers. The gaps in the requisite capital; skill and post-harvest management have hampered largely the production level, expansion and the enterprise environment.

Tomato production is rational combination of various input and resources for obtaining tomato fruits from tomato seeds for human consumption and economic enterprise.

In the view of Osuala (2004), an enterprise is any business organization that engaged in an economy activity irrespective of its legal forms. An enterprise in opinion of Ogunbade, Alkali and Bikeway (2010) is a business operation undertaking by a body which may be one person, a family, a company or a cooperative for a particular production, processing and marketing activities that involved potentials or skills.

Skills are capacities needed by individuals to be efficient to execute a task. In the view of Eze and Ebele (2009), skills are well-established habits of doing things by people. A person that works productively is skilled because he has acquired the habit of performing a task in his job. Okorie (2000) stated that to possess skills is to demonstrate the habits of acting, thinking and behaving in the specific activity in such a way that the process becomes natural to the individual through continuous practice.

According to Olaitan, Nwanchukwu, Igbo, Onyemachi and Ekong, (1999) work skills are practical activities that an individual express for a task to perform efficiently. Osinem (2008) posited that work skills are the expertness, practiced ability or proficiency displayed in the performance of task. It is the ability to perform a task acquired through repetition of the operation. In the opinion of Okorie (2000), to possess work skills is to demonstrate, act, think, or behave in specific fashion such that the process becomes natural

through repetition or practices. Work skills in this context, is the ability of secondary school leavers to perform activities in tomato production such as nursery operation, planting operation, processing operation and marketing operation.

Secondary school leavers, in the view of Okafor and Onuaha (2010) are those individuals that have completed six years of secondary school education but could not secure admission into higher institution of learning or employed in any job. Olaitan, Asogwa and Onipede (2009), stressed that unemployed secondary school leavers have no means of survival except depending on their parents. This implies that, they needed to be self-reliant or employed to reduce dependence and contribute to the Gross Domestic Product of Benue state and the nation at large. Tomato production has the potential to adequately engage the young population at different levels of the production. Stakeholders would need only to show political commitment while schools are equipped to give requisite training to attain the goals of youth empowerment. The work skills in tomato production could be impacted to farmers by agricultural extension agents. A farmer in the opinion of Olaitan (2005) is a person who grows crops or rears animals for the benefit of mankind. Similarly, Omeje (2012) defined a farmer as an individual who owns and managed, plough soil, cultivates plants and rear livestock to earn livelihood. In this context, farmers are individuals who own or manage tomato enterprise on their farms. Some of the farmers operate at subsistence or small scale-level to care for family members from the income generated from tomato sales. To increase tomato production in Benue state, the Benue would be or prospective farmers must be put through by agricultural extension agents to adopt new techniques and best practices in tomato production.

Extension agents in the opinion of Christopolis (2003), are trained personnel, professionals who assist farmers through educational procedures in improving farming methods and techniques to ultimately increase production efficiency and income so as to improve the standard of living; lifting social and educational.

In the context of this study, extension agents are persons who identify tomato production problems, take them to research institutes for solution and then brings back the findings to prospective farmers for adoption of new farming practices and improve their output levels in tomato production. These work skills required in the field of planning, nursery and pre-planting operations.

## 2. Statement of the Problem

Vegetables contribute greatly to the economy of Benue state and the nation. Recently, the federal government of Nigeria launched the Presidential Initiative on Agriculture for vegetable crop production as foreign exchange earnings and to meet national demand. The task initiative, (International Institute of Tropical Agriculture 2007) is to make Nigeria earn billions of US dollars from direct investment. The initiative aimed to mainstream farmers particularly youths into the national economy. The researcher discovered that tomato production has not been effectively explored. It has been left in the hands of subsistence and aged farmers who practiced at a small-scale level to feed their families and little to earn income. This condition results in the wide gap between the quantity demanded by consumers and quantity supplied by subsistence tomato farmers in the state. This gap seems to be a very lucrative employment opportunity for the secondary school leavers. It is obvious that not all youths in Benue state will get admission into tertiary institutions and to encourage youths in tomato production (especially secondary school leavers) a great deal of attention must be given to requisite work-skills. Thus, reducing the rate at which youths roam the streets and indulge in various anti-social activities when they are jobless. The primary concern of the researcher is to identify work skills required for secondary school leavers for entry into tomato production in Benue state.

## 3. Purpose of Study

The major purpose of the study was to determine work skills required by secondary school leavers for entry into tomato production enterprise in Benue State, Specifically, the study sought to determine work skills required by secondary school leavers in : -

- i. Planning Operation.
- ii. Nursery Operation.
- iii. Pre-planting Operation.

## 4. Research Questions

1. What are the work skills required by secondary school leavers in planning operations for tomato production?
2. What are work skills required by secondary school leavers in nursery operations for tomato production?
3. What are the work skills required by secondary school leavers in pre-planting operations in tomato production?

## 5. Research Hypotheses

1. There is no significant difference in the mean ratings of the responses of tomato farmers and extension agents on work skills required by secondary school leavers in planning for tomato production in Benue State
2. There is no significant difference in the mean ratings of the responses of tomato farmers and extension agents on work skills required by secondary school leavers in nursery for tomato production in Benue State
3. There is no significant difference in the mean ratings of the responses of tomato farmers and extension agents on work skills required by secondary school leavers in pre-planting for tomato production in Benue State

## 6. Methodology

Survey design was used for the study. Emaikwu (2007) said survey research design involves the use of questionnaire and to gather large-scale data from a representative sample of the population. The target population for the study was 300, made up of 200

registered tomato farmers and 100 Agricultural Extension Officers from (Benue State Agricultural and Rural Development Authority-BNARDA-, 2015). A random and purposive sampling technique was used to select 100 registered tomato farmers and 60 agricultural extension officers. The instrument used for data collection was a 32 structured item questionnaire titled: Work Skill Required in Tomato Production Questionnaire (WSTPQ) developed from the literature reviewed and was the instrument used for data collection. The questionnaire had a four-point response options of highly required (HR), averagely required (AR), slightly required (SR) and not required (NR) with a corresponding value 4, 3, 2 and 1 respectively. Three experts validated the questionnaire items, two from crop production department and one from Agricultural Department all of the Federal University of Agriculture Makurdi. Their corrections and suggestions were effected on the initial drafts to produce the final copy of the questionnaire. The WSTPQ was administered to 30 similar characterized respondents in Nassarawa State to test the initial consistency of the items. This gave Cronbach Alpha coefficient of 0.89, meaning that the questionnaire items are highly reliable. As a result, the WSTPQ was used to collect data from the respondents by the researchers with the help of 3 research assistants who were given information on how to administer the instrument and retrieved it back as they were conversant with the study area.

One hundred and sixty-four copies of questionnaire were administered to the respondents but one hundred and sixty copies were retrieved and analyzed. The mean of 2.50 was used for decision making. Any item with a mean rating of 2.50 or above was regarded as required while less than 2.50 not required.

Testing of null hypotheses, a hypothesis of no significant difference was not rejected for any item P-value was equal to or greater than alpha value of .05 level of significance while null hypothesis of no significant difference was rejected for any item whose P-value was less than alpha value of 0.05 level of significance and 160 degree of freedom .The results of the study were obtained from the research questions answered and hypotheses tested through data collection and analyzed as follows.

### 6.1. Research Question 1

What are the work skills required by secondary school leavers in planning operations for tomato production in Benue State?

S/N	Item statement	X	SD	Remarks
1	Conduct a need assessment for the tomato enterprise	3.27	0.98	AR
2	Identify strength and weakness of the enterprise base on location	3.75	0.68	HR
3	Decide where to locate the farm	3.84	0.49	HR
4	Decide cropping system to adopt (Mono or mixed cropping)	3.75	0.58	HR
5	Draw a schedule of activities to cover stages of production	3.20	0.92	AR
6	Identify important personnel to assist in tomato production	3.09	0.92	AR
7	Sort out viable materials required for tomato production	3.32	0.91	AR
8	Draw out a comprehensive budget for the tomato production	3.50	0.88	HR
9	Identify market channels and forecast profit for the tomato production to make substantial decision	3.43	0.86	AR
10	Identify crucial records to keep during the tomato production	3.57	0.78	HR
11	Develop a plan to indicate the size of the farm and the processes involved in tomato production.	3.15	0.89	AR

Table 1: Mean Ratings and Standard Deviation of the Responses of Tomato Famers and Extension Agents on Work Skills Required by Secondary School Leavers in Planning Operations for Tomato Production in Benue State (N=160).

Key: Mean=X, SD=Standard Deviation, HR=Highly Required, AV=Averagely Required.

Data in table1 revealed that 6 out 11 items had their mean values ranged from 3.50 to 4.00 and 5 out of 11 items had their mean values 3.10 to 3.43. This showed that responses of the respondents on 6 items of work skills in planning operations were highly required while 5 items of work skills in planning operations out of 11 items showed averagely required in Benue State. This indicates that all the 11 work skill items in planning operations are required by secondary school leavers for entry into tomato production in Benue State. The standard deviation ranged from 0.50 to 0.98, which indicates that the respondents were not too far from the mean and opinion of one another in their responses on planning for tomato production in Benue State.

### 6.2. Research Question 2

What are the work skills required by secondary school leavers in nursery operations for tomato production in Benue State



S/N	Item Statement	X	SD	Remarks
1	Select site for tomato nursery/seedling production	3.35	0.91	HR
2	Clear and stump vegetation to prepare the land	3.75	0.67	HR
3	Demarcate the land with pegs for proper nursery operation	3.52	0.90	HR
4	Loosen the soil to facilitate germination and rooting	3.41	0.99	AR
5	Select viable or healthy seeds of the desired cultivar to enhance germination	3.87	0.44	HR
6	Treat seeds with appropriate fungicide before planting (e.g. Fansan D).	3.88	0.41	HR
7	Broadcast treated seeds evenly on the nursery bed.	3.77	0.52	HR
8	Cover the broadcast seeds with soil lightly and also with mulching such as dry grasses, rice straw etc.	3.87	0.51	HR
9	Water the beds to enhance better germination.	3.94	0.73	HR
10	Observe seeds at 4-6days after broadcast for germination	3.95	0.65	HR
11	Seedlings are transplanting to the main field when they have 3-6 leaves.	3.81	0.55	HR

Table 2: Mean Ratings and Standard Deviation of the Responses of Tomato Famers and Extension Agents on Work Skills Required by Secondary School Leavers in Nursery Operations for Tomato Production in Benue State (N=160).

Key: Mean=X, SD=Standard Deviation, HR=Highly Required, AV=Averagely Required

Data in Table 2 revealed that 10 out of 11 items had their mean values ranged from 3.50 to 4.00 and 4 out of 11 items had their mean values 3.10 to 3.40. This showed that responses of the respondents on 10 items of work skills in nursery operations were highly required while 1 item of work skills in nursery operations out of 11 items showed averagely required in Benue State. This indicates that all the 11 work skill items in nursery operation are required by secondary school leavers for entry into tomato production. The standard deviation ranged from 0.40-0.91, indicating that the respondents were not too far from the mean and opinion of one another on their responses in nursery operations for tomato production in Benue State.

### 6.3. Research Question 3

What are the work skills required by secondary school leavers in pre-planting operations for tomato production in Benue State?

S/N	Item Statement	X	SD	Remarks
1	Select a suitable site for transplanting tomato seedlings considering the following factors: soil fertility, topography, labour availability, water source, and nearness to market.	3.85	0.50	HR
2	Survey the land of existing vegetation, either manually or mechanically.	3.74	0.60	HR
3	Clear grasses, cut down trees and remove stumps of felled trees	3.62	0.66	HR
4	Gather the cleared vegetation into heaps and burn them	3.53	0.77	HR
5	Level the surface and divide the land into plots of desired dimensions.	2.99	0.64	AR
6	Plough the soil to improve the soil structure.	3.13	0.64	AR
7	Harrow the soil to pulverize it and incorporate weeds and manure into soil for effective rooting	3.57	0.82	HR
8	Broadcast organic manure on farmland to increase soil fertility	3.51	0.85	HR
9	Map out the land to create roads and paths of about 1m apart.	3.33	0.98	AR
10	Make ridge of appropriate dimensions	3.29	0.85	AR

Table 3: Mean Ratings and Standard Deviation of the Responses of Tomato Famers and Extension Agents on Work Skills Required by Secondary School Leavers Pre-Planting Operations for Tomato Production in Benue State (N=160).

Key: Mean=X, SD=Standard Deviation, HR=Highly Require, AV=Averagely Required

Data in table 3 has shown that 6 out of 10 items had their mean values ranged from 3.50 to 4.00 and 4 out of 10 items had their mean values 3.10 to 3.40. This showed that responses of the respondents on 6 items of work skills in pre-planting operations were highly required while 4 items of work skills in pre-planting operations out of 10 items showed averagely required in Benue State. This indicates that all the 10 work skill items in nursery operation are required by secondary school leavers for entry into tomato production. The standard deviation ranged from 0.40-0.91, indicating that the respondents were not too far from the opinion of one another on their responses in pre-planting operations. This shows that all the ten items were required in pre-planting operations for tomato production. The standard deviation ranged from 0.50-0.98 which indicates that the responses of the respondents were not too far of the mean and opinion in their responses on pre-planting operations for tomato production in Benue state.

## 7. Hypotheses Testing

Hypothesis 1. There is no significant difference in the mean ratings of the responses of tomato farmers and extension agents on work skills required by secondary school leavers in planning for tomato production in Benue State.

Status	No.	X	SD	Std.Error	Mean	df	t-cal	Sig.	Remarks
Farmers	327	3.20	0.99	0.055	160	1.78	0.08	NS,	NR
Extension agents	142	3.30	0.94	0.082	160				

Table 4: *t*-test Analysis of the Mean Ratings of the Responses of Tomato Farmers and Extension Agents on Work Skills Required by Secondary School Leavers in Planning for Tomato Production in Benue State (160)

*N*=Number of Respondents, *SD*=Standard Deviation, *df*=Degree of Freedom, *t*=cal, *t*-calculated, *Sig*=Significant Value/Probability Value at  $P \geq 0.05$ . *NS*=Not Significant, *NR*=Not Rejected

Table 4. The hypothesis tested in table 8, revealed the *p*-value of .080 which is greater than the alpha value of 0.05 level of significance and 160 degree of freedom. This indicate that there was no statistical significant difference in the mean ratings of tomato famers and extension agents on work skills in planning operations for tomato production in Benue state. Therefore, the hypothesis of no significant difference for the two groups of respondents on work skills in planning operations for tomato production in Benue state was not rejected

2. There is no significant difference in the mean ratings of the responses of tomato farmers and extension agents on work skills required by secondary school leavers in nursery for tomato production in Benue State

Hypothesis 2. There is no significant difference in the mean ratings of tomato farmers and extension agents on work skills required by secondary school leavers in nursery operations for tomato production

Status	No.	X	SD	Std.Error	Mean	df	t-cal	Sig.	Remarks
Farmers	327	3.78	0.60	0.033	160	0.67	0.503	NS, NR	
Extension agents	142	3.66	0.81	0.071	160				

Table 5: *t*-test Analysis of the Mean Ratings of the Responses of Tomato Farmers and Extension Agents on Work Skills Required by Secondary School Leavers in Nursery for Tomato Production in Benue State (160)

*N*=Number of Respondents, *SD*=Standard Deviation, *df*=Degree of Freedom, *t*=cal, *t*-calculated, *Sig*=Significant Value/Probability Value at  $P \geq 0.05$ . *NS*=Not Significant,

Data in Table 5. The analysis in table 9 showed that the calculated *t*-value 0.67, revealed the *p*-value of .50 which is greater than the alpha value of 0.05 level of significant and 160 degree of freedom. This indicates that there was no statistical significant difference in the mean ratings of tomato famers and extension agents on work skills in nursery operations for tomato production in Benue state. Therefore, the hypothesis of no significant difference for the two groups of respondents on work skills in nursery operations for tomato production in Benue state was not rejected.

Hypothesis 3: There is no significant difference in the mean ratings of the responses of tomato farmers and extension agents on work skills required by secondary school leavers in pre-planting for tomato production in Benue State

Status	No	X	SD	Std. Error	Mean	df	t-cal	Sig.	Remarks
Farmers	327	3.61	0.71	0.039	160	0.87	0.39	NS, NR	
Extension agents	142	3.60	0.54	0.047	160				

Table 6: *t*-test Analysis of the Mean Ratings of the Responses of Tomato Farmers and Extension Agents on Work Skills Required by Secondary School Leavers in Pre-Planting for Tomato Production in Benue State.

*N*=Number of Respondents, *SD*=Standard Deviation, *DF*=Degree of Freedom, *t*=Cal, *t* calculated, *Sig*=Significant Value/Probability Value at  $P \geq 0.05$ . *NS*=Not Significant, *NR*=Not Rejected

Data in table 3. The analysis in above table showed that the calculated *t*-value 0.87, revealed the *p*-value of 0.39 which is less than the alpha value of 0.05 level of significance and 160 degree of freedom. This indicate that there was no statistical significant difference in the mean ratings of tomato famers and extension agents on work skills in pre-planting operations for tomato production in Benue state. Therefore, the hypothesis of no significant difference for the two groups of respondents on work skills in pre-planting operations for tomato production in Benue state was not rejected

## 9. Discussions of Results

The result of this study in Table 1 revealed that all the identified work skills in planning operations were required by secondary school leavers for entry into tomato production in Benue state. This is because the mean ranged between 3.10 (item 6) and 3.80 (item 2) were all higher than 2.50 bench mark, which indicates that all the 11 work skill items in planning are required by secondary school graduate for entry into tomato production in Benue State and the calculated *t*- value was higher than the *p*-value at 0.05 level of significance with 452 degrees of freedom. This finding in agreement with Olaitan and Mama (2001), who explained planning as a deliberate attempt by farmers to arrange and document enterprise activities in order. The authors further stated activities involved in planning to include formulating the specific objective for the enterprise, reviewing the objectives periodically, drawing up programme, and plan for different enterprises. This is also in consonance with the opinion of Darameola, et al. (2010) who opined that effective planner must master many skills, design activities and useful production factor in order to ensure maximum profit in the enterprise. This

finding also goes to confirm the discovery made by Seth (2004) who outlines steps in planning process as follows, choosing objective, review of objective, identification and availability of raw materials, establishing of policies, provides direction for all business activities and identification of source of credits among others.

The findings from the hypothesis 2 revealed that all the identified work skills in nursery operations were required by secondary school leavers for entry into tomato production in Benue state. This is because the mean ranged between 3.10 (item 11) and 3.90 (item 5) were all higher than 2.50 bench mark, which indicates that all the 11 work skill items in nursery operations are required by secondary school leavers for entry into tomato production in Benue State and the calculated t- value was higher than the p-value at 0.05 level of significance with 452 degrees of freedom. Nursery operations, Jared (2010) posited is the practice of planting or broadcasting tomato seeds on nursery beds to raise seedlings for transplanting in the field. The author further maintained that in nursery, seedlings are raised on beds of size 3x0.6 meters and 10-15cm in height that are prepared. About 70cm distance is kept between two beds to carry out operations of watering, weeding among others. In consonance with above statement, Nwabuisi (2005) prescribed best farm practice for tomato nursery preparation stating that tomato seeds should be raise on beds of a size 30 by 0.6m and 10-15cm in height, 70cm distance to be kept between two beds to carry out operations of water irrigation, weeding among others. The surface of the beds should be smooth and well leveled and add sieved farmyard manure mixed with fine sand on the seedbeds. According to KwaZulu-Natal (2001), the location of the nursery site is critical to effective tomato production at the nursery stage. The nursery should be located on the flat land secured and accessible to those monitoring the farm, it should be establishing near clean useable water and on the well-drain soil. The area should be exposed to sunrays, well aerated, protected from strong winds and strategically located to avoid exposure to pests and diseases. Sowing lines should be at 1cm depth marked with a finger, within 5-10cm spacing in between the sowing lines, keep nursery well irrigated and free of weeds, loosen soil to allow water percolation. The work-skills and the appropriate practice identified as critical in nursery operations for a successful tomato production enterprise are significant would be farmers and most importantly the training of prospective tomato farmers.

The result of the study in Table 3 revealed that all the identified work skills in pre-planting operations were required by secondary school leavers for entry into tomato production in Benue state. This is because the mean ranged between 13.10 (item 6) and 3.90 (item 1) were all higher than 2.50 bench mark, which indicates that all the 10 work-skill items in pre-operations are required by secondary school leavers for entry into tomato production in Benue State and the calculated t- value was higher than the p-value at 0.05 level of significance with 452 degrees of freedom. This finding was in agreement with Emado and Emado (2005) that pre-planting is essential aspects of farming activities carried out on the farmland before the actual sowing of the crop. The authors further stated that the pre-planting phase involved, choosing of site, clearing, stumping, plotting, tillage, ploughing, ridging and harrowing. Olaitan, Alaribe and Amusa (2010) presented the work-skills required in pre-planting vegetable production to include the clear the land of existing vegetation, till the land, into beds or ridges depending on the famer's make, mulching the tilled farmland, lay/plot out the farmland. The view and the submission of the above authors guided in the identification of work-skills required by would be farmers in pre-planting operations for entry into tomato production in Benue State.

## 10. Conclusion

Based on the findings of this study, it was concluded that all work skills are required by prospective farmers (secondary school leavers) in planning (11), nursery, pre-planting, and post-planting, post-harvesting and marketing operations for entry into tomato production enterprise in Benue State.

Findings further deduce that the work skills identified in this study were required by secondary school leavers for tomato production. Hence, there is need for this teaming population (secondary school leavers) to be properly educated and trained in this area of tomato production so that they could find themselves employed or employed by the bigger tomato production enterprises for them to be able to earn a living. This could assist in reducing the social menace posed by these secondary school leavers as a result of idleness and also could contributes to the socio-economic well-being of their individual families as well as their communities, Benue state and in the lager extents their nation.

## 11. Recommendation

It was therefore recommended that:

1. The agricultural extension officers in Ministry of Agriculture should use the identified work skills in the area of the study to guide the secondary school leavers and members of the young club for entry into tomato production enterprise.
2. If teachers of agriculture integrate the work skills during the process of instruction in schools and the student are made to pass through it during their period of study; this could cause them to develop interest in cocoa production enterprise.
3. The government of Benue state in conjunction with the curriculum planners should integrate the work skills identified by this study into the state skills acquisition training programme for youths and adults in vegetable production enterprises in Benue State.

## 12. References

- i. Asogwa, V.C. (2009) development of entrepreneurial competency support programme in goat production for enhancing income of teachers of agriculture in secondary schools in Enugu State unpublished M.Ed. thesis of vocational teachers education University of Nigeria. Nsukka.
- ii. Atini, J. (2013, March 13) Inauguration of entrepreneurship skill acquisition Centre North Central Zone, Makurdi Nigeria. This Day Newspaper p.5 & 10.

- iii. Emedo, A.B.C. and Emedo, G.A. (2005) Agricultural science for senior secondary schools. Onitsha: diamond (JMB) publisher.
- iv. Eze, R. and Ebele, J.N (2009) development of science process skills as a basis for enduring entrepreneurship education in upper basic classes. A paper presented @ 22<sup>nd</sup> annual conference of curriculum organization of Nigeria (CON) held @ college of education Agbor Delta State September, 16-19.
- v. Emaikwu, S. O. (2007) Fundamentals of education research method and statistics. First published 2006; ISBN; 978-3759-13-0: Deray Prints Limited. VV1 Keffi road/Lagos street, Kaduna.
- vi. FAO (2007) Production year book, food and agricultural organization. Rome, Italy.
- vii. Fateh, M.M. (2009) structure and efficiency analysis of vegetable production and marketing in Sindh. Pakistan. Unpublished Ph.D. Thesis in agricultural economics, Sindh agricultural university Tando Jam.
- viii. Food and Agricultural Organization (2005) food and agricultural organization production yearbook. Rome, Italy.
- ix. International Institution of Tropical Research (2007) tropical root crops for African. A reference manual. Ibadan Nigeria.
- x. Jared, O. (2010) tomato production challenges and solutions publishers Monsanto Kenya Ltd. Vol.33, October- December 2010.
- xi. KwaZulu Natal (2001) vegetable production guidelines KwaZulu Natal. Pietermantzburg department of agriculture and environment affairs.
- xii. Lan, M. T. (2014) perceived impact of global warming on sustainable food security by farmers in Benue State. Agricultural science Education, Federal University of Agriculture, Makurdi, Nigeria.
- xiii. Nell, W. and Wessel, B. (2006) growing vegetables. Comprehensive guides on how to establish maintain and manage a vegetable garden University of the Free State. NU Farmers and African Entrepreneurs, April, 2006.
- xiv. Nwabuisi, G.M. (2005) handbook of horticulture: IBN 978-8096-23-9. Published in 2005 by. Roytel communication limited, 21/23. Bamagbose Street, Tinubu, Lagos, Surulere Lagos State.
- xv. Okafor, O. E. and Onuaha, E.R. (2010) work skills required by secondary school graduates for success in cassava root processing and marketing enterprise, in Imo State. A paper presented at school of Agriculture and production students in colleges of education in southeast, Nigeria. A paper presented at the conference of Nigeria vocational association.
- xvi. Olaitan, S.O. (2005) soil erosion management in the tropics. Onitsha: cape publishers international limited.
- xvii. Olaitan, S.O., Alaribe, M.O and Amusa, T.A. (2010) competency building needs of secondary school teachers of agriculture in pig production for reduction in southeast, Nigeria journal of Home Economics research Vol. 12.
- xviii. Osinem, E.C. (2008) managing agricultural education and methods. Enugu. Belony International publishers.
- xix. Osinem, E.C.(2008) management agricultural education and training: resources, principles and methods. Enugu Belony international publishers.
- xx. Production guidelines for tomato (2001) Department of Agricultural. Forestry and Fisheries. Directorate Agricultural point production published by Directorate Agricultural information series [www.daff.gov.za/publications](http://www.daff.gov.za/publications).
- xxi. Seth, J.A. (2004) the entrepreneurship paradigm: Port Harcourt Nigeria: Pearl publishers.
- xxii. Wolf, K. and Fonash, E.G. (2002) wholesalers and distributor's outlook for fruits and vegetables produced in Georgia, GFV-GA News vol.7.No.4. Fall.