

**SELECTION AND EVALUATION OF SOME BALADY AND CHINESE (SIDS-40)  
 GARLIC "*Allium sativum* L." CLONES**

BY

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**ABSTRACT**

*This* investigation was carried out at Kaha Vegetables Research Farm, Hort. Res. Inst. during five seasons i.e. 2003/2004, 2004/2005, 2005/2006, 2006/2007 and 2007/2008 seasons to select and evaluate new clones from two local cultivars which are planted in Egypt i.e. purple Chinese cv. (Sids-40) and white garlic Balady cv. which were collected from different locations in Egypt in order to improve yield and quality of Egyptian garlic for both local consumption and exportation, also studying the chemical composition of the bulbs of selected clones. Significant differences were found among different selected clones concerning vegetative growth, yield, bulb characteristics, i.e., bulb weight, diameter, cloves number, clove weight in addition to chemical contents of the cloves i.e., nitrogen, phosphorus, potassium, calcium, sodium, protein and carbohydrate percentages. Some clones showed high degree of superiority in certain characteristics compared to other selected clones as follow:

**A. Purple clones selected from Chinese garlic cv. Sids-40:**

- 1- Clones St.<sub>44</sub>, St.<sub>35</sub>, St.<sub>36</sub> and St.<sub>38</sub> produced the highest total yield/fed and highest bulb weight.
- 2- Clones St.<sub>44</sub>, St.<sub>14</sub> and St.<sub>38</sub> were characterized by lowest number of cloves per bulb besides the highest clove weight.

**B. White clones selected from Balady cv.:**

- 1- Clones Sil.<sub>16</sub>, Sil.<sub>15</sub>, Sil.<sub>17</sub> and Sil.<sub>19</sub> produced the highest total yield per feddan and the highest bulb weight.
- 2- Clones Sil.<sub>11</sub>, Sil.<sub>12</sub>, Sil.<sub>18</sub> and Sil.<sub>17</sub> produced the lowest cloves number per bulb while the highest clove weight was produced by clones Sil.<sub>11</sub>, Sil.<sub>12</sub> and Sil.<sub>17</sub>.

**C. Chemical composition of cloves:**

Concerning purple selected clones it was found that clone St.<sub>36</sub> was superior in nitrogen, calcium and protein percentage compared with clone St.<sub>44</sub>, while clone St.<sub>44</sub> contained more potassium, sodium and carbohydrate than that of clone St.<sub>36</sub>.

As for white selected garlic clones it was found that clones Sil.<sub>10</sub>, Sil.<sub>4</sub> and Sil.<sub>18</sub> contained the highest percentage of nitrogen and protein but clone Sil.<sub>10</sub> was characterized by highest percentage of phosphorus and carbohydrate. The highest percentage of potassium was found in clones Sil.<sub>18</sub>, Sil.<sub>4</sub> and Sil.<sub>5</sub> whereas clones Sil.<sub>11</sub>, Sil.<sub>19</sub> and Sil.<sub>18</sub> were bioneer in calcium content, while clones Sil.<sub>17</sub> and Sil.<sub>4</sub> produced the highest percentage of sodium content.

Such variations that were observed among the different selected clones will be of great value in garlic breeding programs to develop new clones of garlic characterized by high yield and good quality for local consumption and exportation.

**INTRODUCTION**

Garlic "*Allium sativum* L." is known one of the important vegetable crops for local consumption as well as for export. in Egypt since pre- history, and is considered