



## NOTE

### Determination of Nutritional Components of Beijing Traditional Roast Duck

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Beijing roast duck is Beijing's famous specialties, but the nutritional components of Beijing roast duck is few. Eighteen kinds of essential amino acids and 8 kinds of essential mineral elements were measured in Beijing traditional roast duck. The results showed that The protein content is 23.67 g/100 g in Beijing traditional roast duck; the descending order of amino acid composition is Arg > Glu > Ala > Pro > Ser > Gly > Lys > Leu > Thr > Tyr > His > Met > Val > Phe > Ile > Asp > Hyp > Cystine while the descending order of these mineral elements is K > Mg > Ca > Fe > Zn > Cu > Mn > Se.

**Keywords:** Beijing Traditional Roast Duck, Essential amino acids, Essential mineral elements.

Beijing roast duck is the treasure of the Chinese diet culture, with the characteristics of golden color, shiny, cortex crisp, succulent tender, that is the entrance, enticing aroma, therefore Beijing roast duck become China's famous specialties<sup>1</sup>. Beijing roast duck's quality is decided by its unique fragrance and nutrition. The past research about Beijing roast duck were mostly focused on its flavor<sup>2</sup>, but few on the nutritional components of Beijing roast duck. People are limited to sensory evaluation generally on this product praise, which may produce large error, true edible value lies in its nutritional value.

In order to praise the quality of Beijing roast duck in its nutritional value, eighteen kinds of essential amino acids and 8 kinds of essential mineral elements were measured in this paper.

**Method of sampling and sample processing:** Samples purchased from Sanzheng diet culture and Guolin roasted duck hotel in Xueyuan Road. The duck meat of roasted duck was cut, weighing and freeze drying chopped, grinding, crushing, preparing for test (Fig. 1).

#### Method of determination

Protein was determined by the Kjeldahl method (GB/T 5009.5-2010)<sup>3</sup>.

**Determination of free amino acids:** Weigh accurately 0.5 g duck powder, add 10 mL high pure distilled water, extract for 2 min by ultrasonic, the supernatant was filtered by micro-



Fig. 1. Roasted duck and garnish (The duck meat, cucumber, green Chinese onion, flour paste)

pore filter with diameter 0.45  $\mu\text{m}$ , determined by phenyl isothiocyanate precolumn derivatization method<sup>4</sup>.

Determination of minerals and trace elements by ICP-MS method<sup>5</sup>.

**Protein content:** The protein content is 23.67 g/100 g in Beijing traditional roast duck, which proved that braise stove roast duck was high-protein diet.

**Amino acid content:** Protein is consisted of amino acids, mostly including essential amino acid. The results showed that Beijing braise stove roast duck contained much essential amino acid. The descending order of amino acid composition in Beijing traditional roast duck is Arg > Glu > Ala > Pro > Ser > Gly > Lys > Leu > Thr > Tyr > His > Met > Val > Phe > Ile > Asp > Hyp > Cystine (Table-1).

Amino acid	Content (g/100g)
Ala	32.77
Pro	26.33
Gly	8.90
Glu	35.27
Arg	47.88
Hyp	1.32
Ser	17.33
Thr	8.21
Asp	3.07
His	7.45
Tyr	8.13
Phe	4.90
Met	5.78
Cystine	1.21
Lys	8.37
Leu	8.22
Val	5.56
Ile	4.22

**Content of mineral elements:** In addition to amino acids, minerals, trace elements are also important nutrients in roasted duck. The essential nutrients in roasted duck include K, Ca,

Mg, Fe, Cu, Zn, Mn and Se, the descending order of these mineral elements is K > Mg > Ca > Fe > Zn > Cu > Mn > Se (Table-2).

Mineral elements	Content
K	189.26
Ca	13.76
Mg	22.47
Fe	3.53
Cu	0.26
Zn	2.79
Mn	0.14
Se ( $\mu\text{g}/100\text{g}$ )	31.83

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