

AMINO ACIDS OF *Calendula officinalis*

R. L. Abasova, S. M. Aslanov,
and M. É Mamedova

UDC 547.964

In the present communication we give the results of an investigation of the free amino acids in various organs of pot marigold, *Calendula officinalis* L., fam. Asteraceae, which has not been studied hitherto.

The plants were collected in the period of mass flowering in the environs of Baku. To determine its amino acid composition, the raw material (5.0 g) was ground in a mortar and extracted with boiling 70% ethanol for 2 h. The alcoholic extracts obtained were filtered and evaporated to dryness, and the residue was treated with a small amount of 1% hydrochloric acid and used for analysis [1].

To determine their qualitative amino acid compositions, the solutions obtained were chromatographed on type FN-11 paper (15 × 58 cm) in butan-1-ol—CH₃COOH—H₂O systems with various ratios of the solvents (4:1:5, 15:37:3, 8:3:1) in the presence of standard samples of amino acids, and the chromatograms were revealed by spraying with a 0.5% alcoholic solution of ninhydrin, followed by heating at 100°C for 5-6 min [2, 3].

In the leaves, stems, and flowers we detected in the free state 15 amino acids: alanine, arginine, aspartic acid, asparagine, valine, histidine, glutamic acid, leucine, lysine, proline, serine, tyrosine, threonine, methionine, and phenylalanine.

It was established that these amino acids appeared more or less intensively in extracts from different parts of this plant. Determining the amino acids from the intensities of the colorations of the spots [3], we found that the leaves contained about 5% of amino acids, the stems 3.5%, and the flowers 4.5%.

Thus, as the results obtained show, the leaves, stems and flowers were rich in free amino acids. Among them, six predominated: arginine, proline, glutamic acid, phenylalanine, lysine, and leucine.

REFERENCES

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