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The Nutritional Evaluation of Processed Whole Corn Flours

The authors of this article, Ricardo Bressani, Sonia V. Castillo, and Miguel A. Guzman [(J. AGR. FOOD CHEM. **10,** 308 (1962)], have submitted the accompanying table as a clarification of the data which appeared in the original Table VI. ▶

Table VI. Mean Squares from the Analyses of Variance of the Results in Two Biological Trials

	Growth Trial				Protein Depletion-Repletion Trial	
Source of Variation	*Degrees of freedom*	*Weight gain, grams*	*Feed efficiency ratio*	*Protein efficiency ratio*	*Degrees of freedom*	*Weight gain, grams*
Replications	5	...	1.5676	0.03357	5	...
Groups	11	430.0441[a]	8.9909[a]	0.19881[a]	12	248.9572[b]
Controls[c]	2	169.3889[d]	5.8998[a]	0.14867[a]	3	325.6111[b]
Treatments	8	548.9166[a]	10.6065[a]	0.21612[a]	8	235.6250[b]
Control *vs.* treatments	1	0.3749[d]	2.2489[d]	0.16060[a]	1	125.6538[d]
Pressure	2	750.1667[a]	14.8346[a]	0.57579[a]	2	499.5000[b]
Times	2	634.7222[a]	13.3461[a]	0.13645[a]	2	187.0555[d]
Pressure × times	4	405.3888[a]	7.1226[a]	0.07613[b]	4	127.9722[d]
Experimental error	55	100.5805	0.8771	0.02118	59	107.1655
Total	71				76	

[a] Significant at the 1% level.
[b] Significant at the 5% level.
[c] M2, M3, and raw corn for growth trial; M1, M2, M3, and raw corn flour for protein depletion-repletion trial.
[d] No statistical significance.

NUTRITIVE VALUE OF PUMPKIN SEED

Essential Amino Acid Content and Protein Value of Pumpkin Seed

(Cucurbita farinosa)

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IN CENTRAL AMERICA, as in most tropical and subtropical areas, many agricultural products of potential use for human and animal food are utilized only to a limited extent or not at all. A major reason for the shortage of protein-rich products of vegetable origin is the lack of basic chemical and biological knowledge of their values. This article reports the results of chemical and biological studies of the *Cucurbita farinosa* seed, taxonomically described by Rojas (*21*) and commonly known as pepitoria or pumpkin seed. Calderón and Standley (*5*) described it under the name of *Cucurbita pepo* L. It is reported to contain 48.4% crude fat and 31.0% protein (*8*).

Liebscher (*13*) demonstrated in sheep that the organic matter of this seed was highly digestible. Recent trials by Zucker *et al.* (*27*) with rats and swine indicated that the nutritive value of pumpkin seed meal protein was inferior to that of soybean for both experimental animals, and concluded that the protein was of low biological value. In contrast, King (*10*), who also studied the biological value and digestibility coefficient of the protein of the pumpkin seed and of watermelon seed, reported the digestibility of both proteins as 92% and the biological value as 63% and 73%, respectively. Studies carried out by Masurowsky (*17*) have indicated that, contrary to common belief, pumpkin kernel meal is not toxic.

Materials and Methods

Pepitoria Kernel Samples. Because the seed is not clearly classified botanically, nine different 3-pound samples from several localities in Guatemala were studied. All seeds were of different sizes, although their general appearance was the same. The samples were stored at 4° C. until ready to be analyzed.

Pepitoria Kernel Flour. Besides the nine samples, 100 pounds of seed were