

ENRICHMENT OF LIME-TREATED CORN FLOUR WITH ANIMAL AND VEGETABLE PROTEINS  
AND WITH AMINO ACIDS. Ricardo Bressani, Emelina Marengo and Ana Teresa  
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In Mexico and Central America, corn baked into tortillas after lime treatment constitutes the most important staple food of low-income populations. Since corn protein is of poor nutritive value, its enrichment in both quantity and quality of protein is of great practical importance for this area. The optimum amount of added protein concentrate is being studied by growth trials with weanling rats and nitrogen balance in dogs. Minimum levels for maximum protein efficiency ratios (PER) are: fish flour 5%, skim milk 4%, whole egg protein 3% and Torula yeast 5%. Vegetable protein concentrates are also being studied. For human feeding 38% of cottonseed flour added to corn masa gives a food with 27.5% of a protein whose quality is similar to that of milk. The PER of a mixture of lime-treated corn and cooked black beans is highest when each contributes 40 to 60% of the protein, although lysine is limiting. Improvement in the nutritive value of lime-treated corn enriched in the above ways is due to a higher quantity of protein and improvement in its quality, the supplements contributing lysine and tryptophan limiting in corn masa. The best level of these to add in crystalline form is 0.41% L-lysine HCl and 0.10% DL-tryptophan.

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