

BIBLIOGRAFIA LATINOAMERICANA

Marine food production: Problems and prospects for Latin America.— Robert C. May. (Hawaii Institute of Marine Biology, Kaneohe). *Interciencia* 3: 28-37, 1978.

Increased production from marine fisheries in Latin America can occur through exploitation of presently un- or under-utilized stocks, and also through reduction of waste in present fisheries, both via utilization of presently discarded bycatches and via reduction of postharvest spoilage and processing losses. The greatest need in capture fisheries, however, is for institutional arrangements which will allow rational management of stocks and prevent overfishing. This need is made all the more pressing by the establishment of 200 mile economic control zones.

Mariculture is a second means by which the production of food from the sea can be enhanced. Its potential in Latin America appears to be great, although largely unexplored at present. The early stage of development of mariculture (as well as of freshwater aquaculture) in Latin America offers an opportunity to plan and coordinate the future course of aquacultural development to a greater extent than in other regions of the developing world. Establishment of a Latin American aquacultural research network is recommended with one or two lead centers and various outreach stations; such a network would provide needed impetus to aquacultural development by improving through multidisciplinary research the technological base for culture and by performing essential training and extension functions. Re-

search should initially examine the suitability of local species for culture, going on to investigate systems of true marine polyculture and the utilization of locally available feeds and fertilizers (including agricultural and other wastes). Whatever species or species complexes are chosen for mariculture, techniques for controlling reproduction are in need of concerted research attention. Lying at the interface between mariculture and marine fisheries, sea ranching of anadromous and perhaps also non-anadromous species may offer significant potential for increasing yields in certain areas, especially if combined with overall management strategies for the species in question.

Increasing the availability of seafood to the populace, especially those sectors of society which now experience a dietary protein deficiency, is perhaps the most challenging problem connected with marine food resources in Latin America. The problem has a technological dimension in the need for processing and marketing highly perishable products in situations where refrigeration is not available, and in the need, in some instances, to create new products acceptable to the people. From this point of view, the development of local fish farming and poultry industries based on fishmeal as a feed ingredient may be the most efficient and practicable means of making the large industrial fish resources of Latin America available for local consumption. The problem also has social, economic, and political dimensions, as the economic incentive to export fishery products may work against the humanitarian incentive to channel them so as to fill local needs. 77 Ref.

ARGENTINA

Un método simple para controlar la utilización proteica en lactantes bajo terapia de recuperación nutricional. - María E. Río, Sara J. Closa y Carol Meredith, (Facultad de Farmacia y Bioquímica - Univ. de Bs. As. Argentina). *Revista del Hospital de Niños (Buenos Aires)* 19: 162-165, 1977.

Durante la rehabilitación del niño desnutrido es muy importante saber si la proteína ingerida se está aprovechando correctamente. En este trabajo se estudió la posibilidad de evaluar en forma rápida la utilización de la proteína ingerida, en base a la cantidad de nitrógeno ingerido en 24 horas y al nitrógeno urinario total o al nitrógeno ureico eliminado en el mismo lapso. Se analizó en forma retrospectiva la información obtenida por balance nitrogenado en niños desnutridos y en su mayoría diarreicos, para correlacionar el dato de utilización proteica real

$$\frac{\text{N absorbido}}{\text{N retenido}} \%$$

con el de utilización aparente calculado a partir del análisis de orina como:

$$(a) \left(1 - \frac{\text{N urinario total}/24 \text{ h}}{\text{N ingerido}/24 \text{ h}} \right) 100, \text{ ó}$$

$$(b) \left(1 - \frac{\text{N ureico}/24 \text{ h}}{\text{N ingerido}/24 \text{ h}} \right) 100.$$

Hubo una buena correlación lineal, que permite calcular la utilización proteica real aplicando la ecuación de la recta de regresión.

A rapid method for the evaluation of protein quality. - R. Farina, M. E. Rio and J. C. Sanahuja. (Department of Nutrition and Food Science, School of Pharmacy and Biochemistry, University of Buenos Aires. Junin

936. Buenos Aires, Argentina). *Nutrition Reports International* 16: 293-303, 1977.

The possibility of developing a method for evaluating protein quality through the use of food intake curves and weight changes in rats, over a 24-hour feeding period and under standard conditions, was studied. Limiting amino acids were identified by the corrections observed in food intake curves after supplementing with pairs of the most common limiting amino acids in food proteins. Weight loss measured after a 1-hour fast subsequent to the 20-hour feeding period was expressed as percent of the previously gained weight, and showed a close correlation— with Biological Value, Net Protein Utilization and, to a lesser extent, Chemical Score. The correlation coefficient between Biological Value and the logarithm of percent weight loss was 0.99 for animal proteins and 0.95 for plant proteins. The correlation coefficient for NPU was also very high: 0.96 and 0.95 respectively. This method, used under standard conditions, allows a rapid identification of the limiting amino acids through the food consumption time-pattern, and an evaluation of protein quality by a simple determination of relative weight changes.

BRASIL

Leaf protein concentrate of the cactacea *Pereskia Aculeata* Mill. I. Extraction and composition.—Milton de Souza Dayrell and Enio Cardillo Vieira. (Departamento de Bioquímica Instituto de Ciências Biológicas. Universidade Federal de Minas Gerais, Caixa Postal 2486. Belo Horizonte, MG Brazil). *Nutrition Reports International* 15: 529-537, 1977.

Leaf protein concentrate (LPC) of the cactacea *Pereskia aculeata* was obtained through precipitation of the water extract at pH 3 and heating at 60°C. LPC contained 51,07% of protein.

The best yield of protein in LPC was obtained when the ratio g of leaves: volume of water was 1:2. A second extraction of the fibrous residue improved the yield. The best pH of extraction was from 7 to 10. Amino acid analysis revealed that *Pereskia* LPC was comparable to FAO reference protein concerning essential amino acids except for methionine. 32 Ref.

Leaf protein concentrate of the cactacea *Pereskia* *Aculeata*. Mill. II. Nutritive value. —Milton de Souza Dayrell and Enio Cardillo Vieira. (Departamento de Bioquímica Instituto de Ciências Biológicas Universidade Federal de Minas Gerais. Caixa Postal 2486. Belo Horizonte, MG Brazil). *Nutrition Reports International* 15: 539-545, 1977.

The nutritive value of *Pereskia aculeata* leaf protein concentrate (LPC) was determined. The values of protein efficiency ratio for diets whose protein source were casein, LPC, LPC + 0.5% DL-methionine, and LPC + 0.5% DL-methionine + 0.7% L-lysine were 2.56, -0.35, 2.40, and 2.08, respectively. Food efficiency, apparent net protein utilization, and apparent digestibility were also determined. The fibrous residue showed a high digestibility (78.56%) when bovine ruminal juice was used. No trypsin inhibitor was detected in *Pereskia* extract. 22 Ref.

Aplicação de uma curva de ganho de peso para gestantes. - Arnaldo Augusto Franco de Siqueira, Cyro Ciari Junior, Iara Lucia Brayner Mattos, Keiko Ogura Buralli, Malaquias Baptista Filho, Nélia Schor, Pedro Augusto Marcondes de Almeida y Ana Cristina d'Andretta Tanaka. (Departamento de Saúde Materno-Infantil da Faculdade de Saúde Pública da USP - Av. Dr. Arnaldo. 715 - São Paulo, SP Brasil). *Rev. Saúde Publ., S. Paulo.* 11: 288-293, 1977.

Com a finalidade de estudar a influência do estado nutricional materno sobre o peso do recém-nascido, foi aplicado em 460 gestantes inscritas no Centro de Saúde Geraldo de Paula Souza o método antropométrico para o diagnóstico do estado nutricional de uma população de gestantes, pois este método é de fácil aplicação e não exige pessoal especializado. Parece existir uma relação positiva entre o peso prégestacional, o ganho de peso da gestante durante a gravidez, e o peso ao nascer do concepto, bem como a idade gestacional. Observou-se ainda que houve uma diferença de 296,7 gramas a mais no peso dos recém-nascidos de gestante com peso pré-gestacional adequado, que no grupo de gestante com peso pré-gestacional insuficiente. Em trabalhos anteriores descreveu-se a necessidade de se utilizar curvas ponderais para o diagnóstico do estado nutricional materno: a curva que ora se apresenta é mais simples que outras já descritas anteriormente. No momento está sendo testada para se avaliar a sua eficácia. 5 Ref.

COLOMBIA

Malnutrition, social environment and cognitive development of Colombian infants and preschoolers. - Niels Christiansen, Lea Vouri, John Clement, M. Guillermo Herrera. (Department of Nutrition, Harvard School of Public Health, Boston, Massachusetts, U.S.A. 02115). José O. Mora and Nelson Ortiz. (Colombian Institute of Family Welfare Bogota, Colombia). *Nutrition Reports International* 16: 93-102, 1977.

The purpose of the study was to examine the association of mild-to-moderate deficits in body length with cognitive performance among young children. A sample of infants ages 6 to 20 months (N=87) and a sample of preschoolers ages 3 to 5 years (N=143) were selected in which half the children in each sample showed mild-

to moderate deficits in length and weight. A number of family social characteristics were measured and statistically controlled. Among infants the Escalona-Corman Spatial Relations Scale and the Griffiths Test of Mental Abilities were significantly associated with standard length, after controlling for the social variables. The Griffiths test and a test of vocabulary were significantly associated with standard length in the preschool sample after controlling for social effects. The findings provide further evidence of a possible association of malnutrition with mental development and indicate that areas of cognitive functioning vary in their association with physical growth deficits. 14 Ref.

GUATEMALA

Effect of frequency of feeding on blood serum urea changes in dogs. - R. Bressani and J. E. Braham. (Division of Agricultural and Food Sciences of the Institute of Nutrition of Central America and Panama (IN-CAP), P. O. Box 1188, Guatemala, Guatemala, C.A.) Nutrition Reports International 16: 305-316, 1977.

Experiments were performed with 2-year-old dogs, to study the effect of distributing protein intake in one, two and three portions on the time required for blood serum urea to reach maximum values. The dogs were fed 4 and 6 g protein/kg body weight/day maintaining energy intake constant. Blood samples were obtained every 3-4 hours starting at 7:30 a.m. for a total period of 24 hours. Each frequency of intake was given for 7 days, the first 3 day of which served as an adaptation period, and measuring nitrogen balance during the last four. Blood samples were withdrawn on the second day of the 4-day nitrogen balance period. The blood serum urea concentrations were also measured in a 24-hour period when the animals were fasted and when fed a protein-free diet. The results indicated that blood serum

urea value depended on protein intake, and that frequency of protein intake did not affect the maximum value obtained when protein intake was low, although it influenced the results at the higher level of protein intake. However, the maximum value at the high protein level of intake was not affected when the protein ingested was offered in 2 portions within a period of 6 hours. Maximum values were obtained from a minimum of 3 to a maximum of 7 hours after the first meal. Fasting did not influence blood serum urea values which remained relatively constant during the 24-hour period. Nevertheless, feeding a nitrogen-free diet decreased blood serum urea values, which suggests that feeding such a diet may be useful when applying the method for rapid protein quality assays. Likewise, a plateau was observed at the maximum value obtained in various cases, a finding which may be useful when comparing the quality of various proteins. 9 Ref.

MEXICO

Los egresados del sistema docente de postgrado del Instituto Nacional de la Nutrición.— Leonardo Viniestra V. (División de Enseñanza. Instituto Nacional de la Nutrición. Avenida San Fernando y Viaducto Tlalpan. México 22, D. F.). Rev. Invest. Clin. (Méx.) 29: 113-120, 1977.

PERU

Aislamiento y observaciones estructurales del contenido polisacárido de Gigartina Chamissoi, recolectada en las playas de Chancay.— Luz O. Garay P., Fuertes R. y O. A. Ching Puente. (Instituto de Química Orgánica Aplicada a la Farmacia. Universidad Nacional Mayor de San Marcos. Lima, Perú). Bol. Soc. Química del Perú. 43: 57-66, 1976. 17 Ref.

Extracción e inspección a la estructura del polisacárido del alga parda *Macrocystis integrifolia* (Lagunilla-Pisco).— Rosa E. Tori, C. Fuentes R., O. A. Ching Puente y C. Acleto O. (Instituto de Química Orgánica Aplicada a la Farmacia, Universidad Nacional Mayor de San Marcos, Lima, Perú). Bol. Sol. Química del Perú 43: 67-75, 1976.

El estudio preliminar cromatográfico y al infrarrojo del contenido polisacárido del alga parda *Macrocystis integrifolia* sugiere la presencia de un fucán-sulfato además de la de un galacto-fucánsulfato.

La extracción del polisacárido a partir del polvo fino del alga seca y desengrasada involucró un tratamiento del mismo con una solución acuosa ligeramente ácida a temperatura ambiente y posterior precipitación del carbohidrato por adición del alcohol de 96°, previa neutralización del extracto con hidróxido de sodio. Un resultado igual en polisacárido crudo (ver parte experimental) se obtuvo por simple maceración con agua y precipitación con alcohol.

El producto ligeramente oscuro tuvo proteínas en un 2.96%, sulfatos 26.31% [a]_D¹⁸ —102 (c,0.62, agua) y zinc, calcio

D y magnesio 0.014, 1.35 y 3.95% respectivamente según el análisis al espectrofotómetro de absorción atómica.

Hidrólisis ácida del contenido polisacárido seguida de cromatografía en papel dio como resultado fucosa en alta proporción, acompañada de galactosa como unidades monosacáridas constituyentes.

El espectro infrarrojo exhibió fuertes bandas de absorción a 850 cm⁻¹ y 1240 cm⁻¹ correspondientes a grupos sulfatos unidos a hidróxilos secundarios axiales, además de la banda 820 cm⁻¹ característica para un sulfato en hidróxilo ecuatorial. 11 Ref.

Curva de crecimiento intrauterino.— Jacinto Hernández, Manuel Acosta, Carmen Maldona-

do, Luisa Sacieta, Antonio Meza Cuadra. (Instituto de Neonatología y Protección Materno Infantil INPROMI del Ministerio de Salud. Sede Docente del Programa Académico de Medicina Humana de la Universidad Nacional Mayor de San Marcos. Lima, Perú). Pediatría Univ. Nac. San Marcos, 1: 7-18, 1976.

. Se relacionó el peso al nacer con la edad gestacional, en 4,817 niños de raza mestiza recién nacidos vivos a nivel del mar.

La población obstétrica estudiada perteneció a estratos económicos sociales catalogados como de clases media baja y baja.

Se elaboraron curvas percentilares de crecimiento intrauterino para peso, talla, perímetro cefálico y relación peso/talla, para neonatos de ambos sexos, de 24 a 44 semanas de gestación.

Se realizaron comparaciones de grupos poblacionales con otras investigaciones informadas.

Nuestros resultados, interpretados como una medida del crecimiento fetal para la población estudiada, parecen evidenciar que: (I) los recién nacidos a los que se refiere este estudio siguieron un crecimiento lineal hasta el término de la gestación, notándose una disminución en la velocidad de crecimiento a partir de la semana 37 y una curva casi plana a partir de la semana 40. (II) Pasado el período de término, se presenta una reducción en el peso corporal fetal. (III) Existe una diferencia en el crecimiento intrauterino en relación con el sexo. Los hombres pesaron más que las mujeres después de la semana 36 de gestación. A las 40 semanas el peso promedio para neonatos hombres fue de 3,420 gramos, aproximadamente 100 gramos mayor que el de las mujeres (3,310 gramos). (IV) Para una mejor clasificación de los recién nacidos en cada país, es indispensable el conocimiento de las curvas de crecimiento intrauterino. 21 Ref.

VENEZUELA

Efecto de la administración crónica de yodo en exceso, sobre el tamaño y la frecuencia de los lisosomas y gotas de colóide, en las células de la glándula tiroidea de rata.— Hernán Ferreira, Gabriel Sulbarán Solís y Américo Negrette. (Instituto de Investigación Clínica, Apartado 1151, Maracaibo, Venezuela. Facultad de Medicina, Universidad del Zulia). Invest. Clín. 18: 97-107, 1977.

Se estudia la influencia del exceso de yodo, administrado en forma crónica, durante dos, cuatro y ocho semanas, sobre los lisosomas y gotas de colóide de las células de la glándula tiroidea de rata.

El tamaño y la frecuencia lisosomal fue mayor en el grupo de dos semanas que en el de ocho, y el área celular ocupada por gotas de colóide, aumentó progresivamente hasta las ocho semanas. 7 Ref.

Efectos varietales y ambientales sobre la composición en ácidos grasos del aceite de maní.— Ligia Ortiz de Bertorelli. (Facultad de Agronomía, Universidad Central de Venezuela, Maracay (Aragua), Venezuela). Rev. Fac. Agron. (Maracay), 9: 37-52, 1976.

Un conjunto de siete variedades de maní cosechadas en Maracay en tres años consecutivos, y otro de cinco variedades cosechadas en un mismo año en tres localidades diferentes, fueron estudiadas con el fin de determinar la composición en ácidos grasos del aceite de la semilla, así como el efecto de los factores varietales, anuales y locales sobre el contenido de dichos ácidos. 182 Ref.

El aceite se extrajo por prensado en frío. Los ésteres metílicos se pre-

pararon por transmetilación de los triglicéridos del aceite, usando metóxido de sodio como catalizador. El análisis de los ácidos grasos se realizó utilizando la técnica de la cromatografía de gases. Los valores obtenidos se sometieron a un análisis de varianza complementando con la prueba de comparación múltiple de Duncan.

Las muestras analizadas de las distintas variedades presentaron diferencias significativas al 5 y al 1 por ciento en su composición. El contenido de los ácidos grasos de las variedades estudiadas oscila entre los siguientes valores: palmítico 10,15 a 12,83 por ciento; esteárico 2,05 a 3,49 por ciento; oleico 40,77 a 52,74 por ciento; linoleico 28,32 a 35,98 por ciento; araquídico 1,45 a 2,22 por ciento; gadoleico 1,07 a 1,30 por ciento; behénico 2,23 a 3,34 por ciento; lignocérico 0,91 a 1,24 por ciento. Se observaron también variaciones significativas en la composición de muestras de una misma variedad cultivada en años diferentes y en lugares distintos.

Astringency in an intermediate moisture banana product. J. R. Ramírez-Martínez, A. Levi, H. Padua and A. Bakal. (C.I.E.P.E. Apartado 100, San Felipe, Yaracuy, Venezuela). J. Food Sci. 42: 1201-1203, 1977.

In the development of an intermediate moisture banana product, it was found that ripe banana halves dehydrated to a moisture content of about 30%, following blanching and/or sulfiting are remarkably astringent. In order to understand the cause of this phenomenon, total phenolics, leucoanthocyanins and vanilin-reacting compounds were determined and found to be more extractable in astringent semidried bananas. Light microscopy observations showed that both blanching and sulfiting contribute to the leakage of tannin-like compounds from the latex cells. Overall results conform with a mechanism by which appearance of astringency in semidried banana is due to diffusion of the astringency-causing agents from the latex cells to the surrounding tissue.