



CHEMICAL AND SENSORY QUALITIES OF DIFFERENT ARGENTINE HONEY VARIETIES, GAMMA IRRADIATED TO CONTROL AMERICAN FOULBROOD (LOQUE AMERICANA)



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Honey may be contaminated with spores of *Paenibacillus larvae larvae* which causes a serious disease in bees: "American foulbrood" (AFB), which impairs international trade.



These spores, resistant to heat and chemicals, can be inactivated by 10 kGy (Gy=Gray= Joule/kg) of ionizing irradiation. In South Africa, this treatment is mandatory to import honey.

Irradiated food wholesomeness is guaranteed by the World Health Organization (WHO) and FAO.

Argentina is an important honey producer and in-bulk exporter. As few references were found in literature about the effect of irradiation on honey chemical and sensory qualities along storage time, this work was undertaken to evaluate this on very different national varieties.

Different honeys from 5 regions were fractionated and irradiated at the cobalt-60 semi industrial facility (PISI) of the Ezeiza Atomic Centre, with doses of 0, 10 and 20 kGy, and stored at room temperature for 10 months. Analysis were performed along storage: acidity, diastase activity, and water, reducing sugars ,hydroxymethylfurfural (HMF) contents, sensory acceptability by a 50 members consumer panel. Results were statistically evaluated, Student and Dunnett tests, p<0.05.

CONTROL AND IRRADIATED ARGENTINE HONEYS - 4 th. STORAGE MONTH AT ROOM TEMPERATURE

PATAGONIA REGION



NORTH-EAST REGION



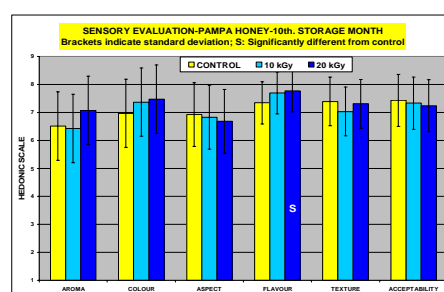
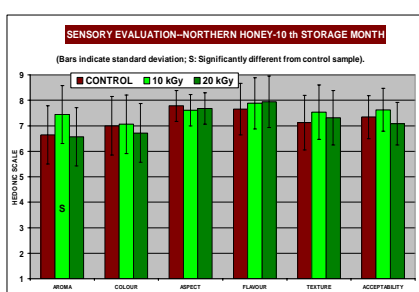
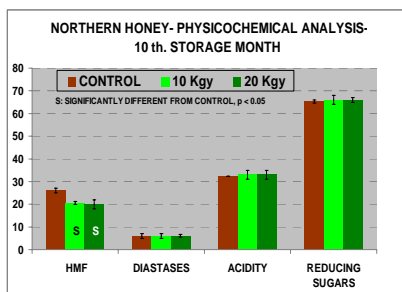
CENTRAL REGION



HUMID PAMPA REGION



No significant differences attributable to irradiation were found in chemical parameters, except HMF content which was slightly reduced. Control and 10 kGy samples were sensorily evaluated as very resembling; some 20 kGy samples were given slightly lower qualifications , mainly in solid honeys.



IONIZING RADIATION AT A DOSE OF 10 kGy, SUFFICIENT TO CONTROL AMERICAN FOULBROOD, DID NOT IMPAIR THE CHEMICAL AND SENSORY QUALITIES OF FIVE ARGENTINE HONEY VARIETIES, ALONG 10 STORAGE MONTHS.

(LA RADIACION IONIZANTE A DOSIS DE 10 kGy, SUFICIENTE PARA CONTROLAR LOQUE AMERICANA, NO ALTERO LAS CALIDADES QUIMICA NI SENSORIAL DE CINCO VARIEDADES DE MIELES ARGENTINAS, DURANTE 10 MESES DE ALMACENAMIENTO).

SOME REFERENCES:

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