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Review Article: Utilization bone Cuttlefish (Sepia *sp*) for flour

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Abstract

Waste generated from the cuttlefish processing industry (Sepia ISP) includes cuttlefish bones. This article aims to review bone making Cuttlefish (Sepia *sp*) Becomes flour, the nutritional content of squid bone meal (Sepia sp) and its utilization. Based on the literature study, information was obtained that the making of cuttlefish bone meal consisted of washing, boiling, drying and milling. The nutritional content contained in flour bone cuttlefish is protein Rough 5.44%, calcium36.77% and phosphorus 0.34%. The use of cuttlefish bone meal is used as raw material for bird feed, lotion making and biomaterials for making synthetic bones.

Keywords: biomaterial, lotion, boiling, grinding.

Preliminary

Cuttlefish (Sepia *sp*) is mollusk from class Cephalopod (animal legged in head), which consist from bone part in on coat, colored White, oval and thick, as well as made of from chalk. Body relatively short resembling bag. The coat colored Red guava black and shrouded membrane thin and on second the side there is fin lateral which elongate from end dorsal until ventral (Fatwa 2018).

Cuttlefish (Sepia *sp*) hlive in base sea and contain many sour amino essential which important for man and contain sour fat not Fed up. Cuttlefish (Sepia *sp*) rich will calcium and protein but low energy. On generally Cuttlefish (Sepia *sp*) utilized without head and bone part in. Thing that cause waste which originated from Cuttlefish (Sepia *sp*) also varied range Among 65-85% from heavy Cuttlefish (Sepia *sp*), depends from types (Anggraini 2016).

Waste Cuttlefish (Sepia *sp*) is wrong one problem waste which faced by para processor because still the minimum utilization waste bone cuttlefish (Sepia *sp*) the. Until moment this, waste the only dried and utilized as food and fertilizer with score economical which small without processing more carry on. even though waste bone Cuttlefish (Sepia *sp*) could processed more carry on Becomes flour which rich will calcium, so that use expand. Bone Cuttlefish (Sepia *sp*) alone actually no bone but bone internal from Cuttlefish (Sepia *sp*) that alone. This article aims to review bone making Cuttlefish (Sepia *sp*) Becomes flour, content which present in cuttlefish bone meal (Sepia sp) and its utilization.

Cuttlefish (Sepia *sp*)

Cephalopod is wrong one source power biological important in sector fishery sea (Bihan et al 2006). *Cephalopod* is wrong one group animal soft (phylum molluscs), cover squid (squid), Cuttlefish (Sepia *sp*) (cuttlefish), octopus (octopus) and his relatives. Cuttlefish (Sepia *sp*) is wrong one type *Cephalopod* which enough known and favorite by public. There is not enough more 100 species Cuttlefish (Sepia *sp*) in world (Ozyurt et al 2006). Cuttlefish (Sepia *sp*) is commodity fishery which spread in along waters Beach Indonesia. Cuttlefish (Sepia *sp*) have size which short, fin meat circle whole body, part behind iround with back which hard because in in ithe meat there is framework from chalk which shape oval and colored White. iColor Cuttlefish (Sepia *sp*) varied but generally chocolate or yellow brown with stripes in back. Species this is type Cuttlefish (Sepia *sp*) economical important especially in Hong Kong (Jereb and Roper 2005). Ingredients raw which potential revolutionize cultivation and cuttlefish (Sepia *sp*) rich will protein and sour amino essential as well as low carbohydrate and fat.

Classification Cuttlefish (Sepia *sp*) according to Jereb and Roper (2005) as following :

Kingdom : Animalia
Phylum : Mollusca
Class : *Cephalopod*
Order : Sepiida
Family : Sepiidae
Genus : *Sepia*
Species : *Sepia recurvirostra*

Bone Cuttlefish (Sepia *sp*)

Cuttlefish (Sepia *sp*) is mollusk which including class *Cephalopod* which have characteristic features bone internal which located in in coat colored White, shaped oval and thick, as well as made of from chalk, body relatively short resembling bag, mentally colored Red guava black and shrouded membrane thin and on second the side there is fin lateral which elongate from end dorsal until ventral (Ozyurt et al 2006). Bone Cuttlefish (Sepia *sp*) is wrong one ingredients which could used for ingredients raw source mineral, especially calcium and phosphorus. View from content nutrition, flour bone Cuttlefish (Sepia *sp*) tall will calcium, so that benefit flour bone no free from role calcium which play a role in formation bone and minimum lost absorption mineral. Bone Cuttlefish (Sepia *sp*) normal used as food addition for because contain calcium carbonate, sodium chloride, calcium carbonate, sodium chloride, calcium phosphate and salt magnesium. Bone Cuttlefish (Sepia *sp*) contain calcium carbonate, sodium chloride, calcium phosphate and salt magnesium.

Utilization Bone Cuttlefish (Sepia *sp*)

Cuttlefish (Sepia *sp*) normal made confectionary or *seafood* which normal served in places big as in hotel. Besides contain meat which thick and delicious, price sell Cuttlefish (Sepia *sp*) this still enough affordable compared animal sea other. On generally Cuttlefish (Sepia *sp*) utilized without head and bone part in. Thing that cause waste which originated from Cuttlefish (Sepia *sp*) also varied range Among 65-85% from heavy Cuttlefish (Sepia *sp*), depends from the kind. Waste on Cuttlefish (Sepia *sp*) this is wrong one problem which must faced by factory processing because the minimum utilization waste from bone Cuttlefish (Sepia *sp*) the. Public Indonesia on generally consume various product processed Cuttlefish (Sepia *sp*), good in form fresh, frozen nor product derivative other, However in process processing Cuttlefish (Sepia *sp*) only utilized part body which cover meat until head, whereas bone and innards considered as waste side results processing (Nurimala *et al* 2018). Waste bone Cuttlefish (Sepia *sp*) is known have element inorganic reach 75-90% which part big is calcium carbonate (Cho *et al* 2001). Cuttlefish (Sepia *sp*) is animal sea with content cholesterol which tall, so that part public more choose for consume fish than Cuttlefish (Sepia *sp*) (Goddess 2015). Bone Cuttlefish (Sepia *sp*) contain ingredients mineral in body which enough tall (Rahayu 2016). Bone Cuttlefish (Sepia *sp*) have rate water

3.54%, fat 0.32%, protein 4.78%, carbohydrate 5.29% and ash reach 89.61%. Rate ash bone Cuttlefish (Sepia *sp*) is element inorganic in the form of calcium carbonate (CaCO3) (Henggu 2019). On every industry leaving bone Cuttlefish (Sepia *sp*) which not yet utilized by maximum. During this waste bone Cuttlefish (Sepia *sp*) only utilized as feed bird (Anggraini 2016). Bone Cuttlefish (Sepia *sp*) is the only one bone on squid, and thrown away when will cleaned in preparation for eat. bones this washed and normal dried with Ray Sun for exported.

Bone Cuttlefish (Sepia *sp*) no only used as supplement food for nutrition poultry. However, a number of piece which more big used for jewellery, for process casting jewellery gold and silver, pattern carving on bone cuttlefish (Sepia *sp*) and pour it to in metal liquid. Grind bone cuttlefish (Sepia *sp*) Becomes powder fine for used as polisher abrasive is utility other.

Flour Bone Cuttlefish (Sepia *sp*)

Flour bone is ingredients flour bone which extracted from gelatin. Product this used as ingredients raw feed cattle, which is source mineral, especially calcium and amount small sour amines. Flour bone is wrong one ingredients raw making feed from bone animal. Flour bone used as wrong one ingredients base making feed because contain mineral macro that is calcium and Phosphor, as well as mineral micro other. Nutrition which contained in flour bone cuttlefish (Sepia *sp*) contain protein Rough 5.44%, calcium 36.77% and Phosphor 0.34% (Widharto & Marsudi 2017).

Benefit flour bone Cuttlefish (Sepia *sp*) based on content which owned according to Razak (2013) that is:

1. Help speed up recovery bone which broken; Content calcium on bone cuttlefish (Sepia *sp*) tall, so that bone cuttlefish (Sepia *sp*) could used as ingredients main replacement hair (titanium) on sufferer broken bone with method extract bone cuttlefish (Sepia *sp*) so that calcium content bone cuttlefish (Sepia *sp*) speed up recovery bone which broken.Product replacement fountain pen this named hydroxyapatite.
2. As ingredients main product beauty ; bone Cuttlefish (Sepia *sp*) sdry used as ingredients main making mask face. Content bone squid (Sepia *sp*) which used as mask face trusted have a number of benefit that is, shrink pores face, remove pimple and spots black consequence pimple, as well as whiten skin face.

3. *Lotion* veil Sun made from base flour bone cuttlefish (Sepia *sp*) which used as ingredients main in process production, because flour bone cuttlefish (Sepia *sp*) have factor protector Sun maximum15,13 on concentration 40 g/mL (Mensie Martha Lovianie 2017).
4. Used as ingredients addition feed poultry for strengthen structure bone bird, strengthen jaw and sharpen beak bird, minimize and prevent loss hair bird and expedite digestion bird.
5. As biomaterial superior for applied on field orthopedics, wrong the only one is hydroxyapatite which have element calcium and phosphate as material scaffolding bone, because have nature biocompatibility, bioactivity and osteoconductive which good (Kattimani *et al.* 2016).

Picture 1. Product Flour bone cuttlefish (Sepia *sp*).
(Source: https://www.kibrispdr.org/pre-8/warna-cat-biru-telor-asin.html)

Price market flour bone Cuttlefish (Sepia *sp*) very variety started with range price 10,000 rupiah for size 50 grams until size 500 grams range price that is 100,000. Price also determined in accordance with brand market which vary.

Process processing flour bone Cuttlefish (Sepia *sp*) with method boiling based on study from (Andi Muhammad Fatwa 2018) as following:

a. Bone Cuttlefish (Sepia *sp*) washed cleaned from remainder meat which stick use water flow.
b. Bone Cuttlefish (Sepia *sp*) boiled use pot normal with time range 3-4 o'clock.
c. Bone Cuttlefish (Sepia *sp*) which has boiled then drained and next with process drying use cupboard oven During 8 o'clock with temperature 55°C.
d. Bone Cuttlefish (Sepia *sp*) which has dry then sliced small for make it easy process siege.
e. Bone Cuttlefish (Sepia *sp*) floured use machine flour with mesh 100 until produce flour which already fine.

Conclusion

Based on the literature study, information was obtained that the making of cuttlefish bone meal consisted of washing, boiling, drying and milling. The nutritional content contained in flour bone cuttlefish is protein Rough 5.44%, calcium36.77% and phosphorus 0.34%. The use of cuttlefish bone meal is used as raw material for bird feed, lotion making and biomaterials for making synthetic bones.

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