

استزراع الأسماك الرابع/ قسم الأسماك والثروة البحرية

اعداد

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المحاضرة الرابعة

• أهمية الغذاء؟

– الغذاء عباره عن ماده او مجموعة مواد تدخل الى القناة الهضمية عن طريق الفم كما هي أو معاملة مثل:

– الالياف ← alkaline digestion

– الريش ← steaming

– كسب بذرة القطن ← copper sulfate

– هذه المعاملات تجعل من تلك المواد مادة مناسبة للاسماك- سهلة الهضم – ذات قيمه غذائية مرتفعة

العلوم المرتبطة بمواد العلف و الاعلاف تسمى علم التغذية

• **علم التغذية** : هو العلم الذى يبحث فى الخصائص التالية

– خصائص المادة الغذائية الطبيعى و تركيبها الكيمياءى

– مدى ملاءمة المادة الغذائية للحيوان حسب وظائف الحيوان المختلفة للحصول على اقصى انتاج باقل تكلفة

DEFINITIONS

Additive: An ingredient or combination of ingredients added to the basic feed mix or parts thereof to fulfill a specific need. Usually used in micro quantities and requires careful handling and mixing

Complete feed: A nutritionally adequate feed for animals other than man: by specific formula is compounded to be fed as the sole ration and is capable of maintaining life and/or promoting production without any additional substance being consumed except water

Compound feed: A mixture of products of vegetable or animal origin in their natural state, fresh or preserved, or products derived from the industrial processing thereof, or organic or inorganic substances, whether or not containing additives, for oral feeding in the form of a complete feed

Concentrate: A feed used with another to improve the nutritive balance of the total and intended to be further diluted and mixed to produce a supplement or a complete feed

Diet: Feed ingredients or mixture of ingredients including water, which is consumed by animals

DEFINITIONS

Extruded: (Process) A process by which feed has been pressed, pushed, or protruded through orifices under pressure

Feed (s): Edible materials which are consumed by animals and contribute energy and/or nutrients to the animals diet. (Usually refers to animals rather than man

Fish Meal : (Feed Ingredient) Fish meal is the clean, dried, ground tissue of undecomposed whole fish or fish cuttings, either or both, with or without the extraction of part of the oil. It must contain not more than 10% moisture. If it contains more than 3% salt (NaCl), the amount of salt must constitute a part of the brand name, provided that in no case must the salt content of this product exceed 7%

Food: Any substance, whether processed, semi-processed or raw, which is intended for human consumption, and includes drinks, chewing gum and any substance which has been used in the manufacture, preparation or treatment of 'food' but does not include cosmetics or tobacco or substances used only as drugs

Formula feed: Two or more ingredients proportioned, mixed and processed according to specifications

DEFINITIONS

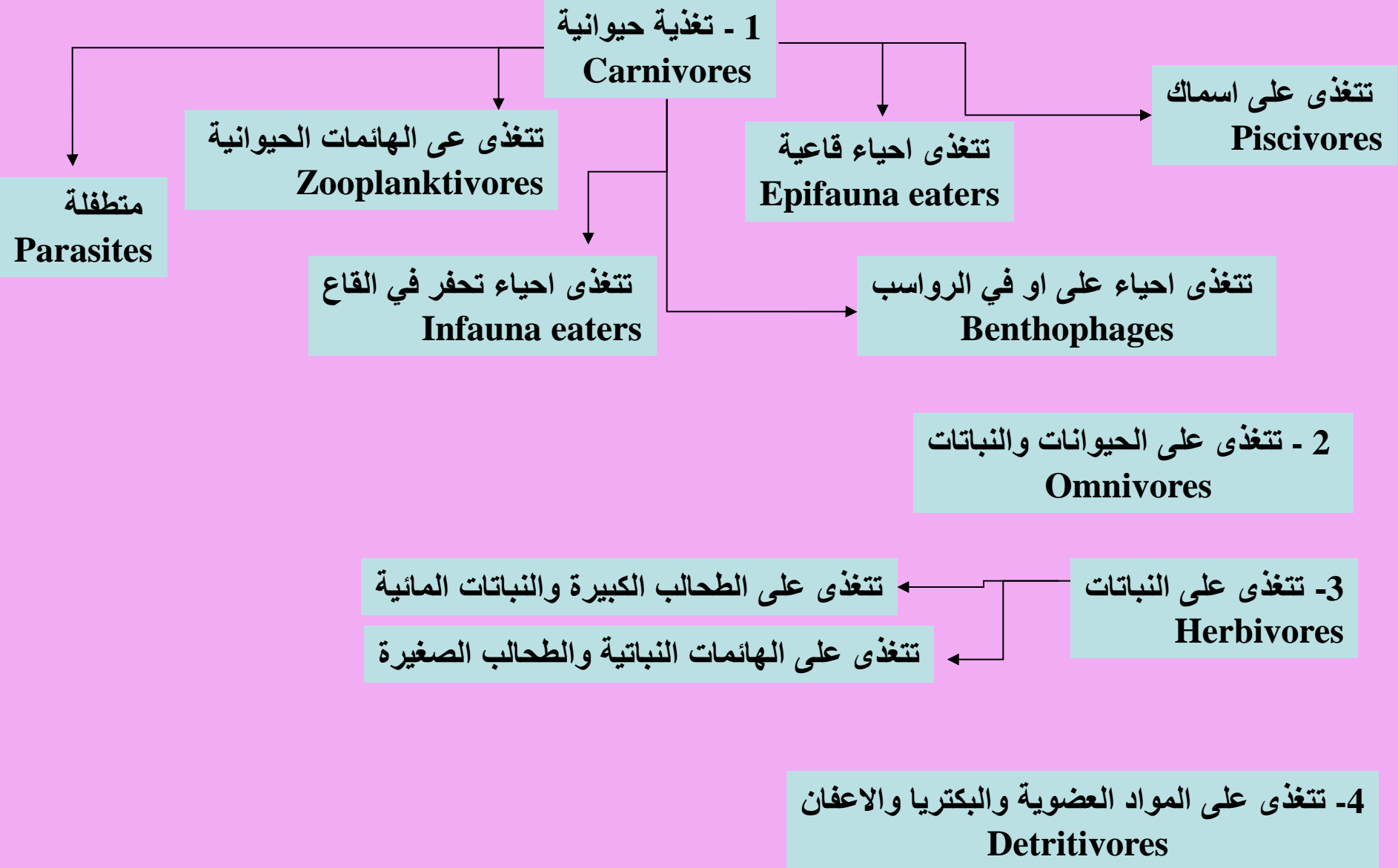
Pellets: (Physical form) Agglomerated feed formed by compacting and forcing through die openings by a mechanical process

Premix: A uniform mixture of one or more micro-ingredients with diluent and/or carrier. Premixes are used to facilitate uniform dispersion of micro-ingredients in a larger mix

Ration: The amount of the total feed which is provided to one animal over a 24 hour period

Supplement: A feed used with another to improve the nutritive balance or performance of the total and intended to be: (i) fed undiluted as a supplement to other feeds; or (ii) offered free choice with other parts of the ration separately available; or (iii) further diluted and mixed to produce a complete feed

تقسم الاسماك حسب طبيعة التغذية الى المجاميع الاتية:



Fish can be broadly grouped into the following feeding categories:

Carnivores - eat animal food

Piscivores - fish eaters

Benthophages - eat animals living in or on sediments

Epifauna eaters - feed on prey living on the bottom substrate,

e.g. scrape or bite prey from stones or rocks

Infauna eaters - feed on prey that burrow in the bottom sediments, e.g. prey are buried in sand or mud

Zooplanktivores - eat planktonic animals

Parasites

Omnivores - eat both plant and animal food

Herbivores - eat plant food

Feed on large algae and water plants

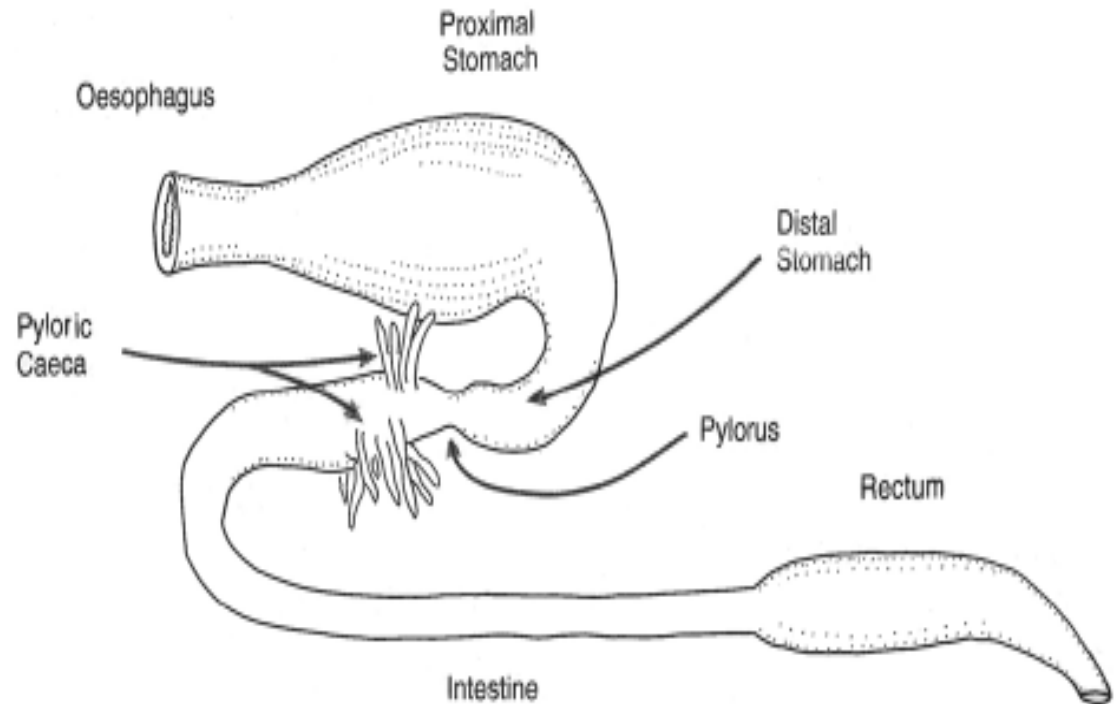
Filter phytoplankton and microalgae from the water

Detritivores - eat detritus (sedimented organic matter, bacteria, fungi and encrusting microalgae)

The alimentary canal (digestive tract or gut)

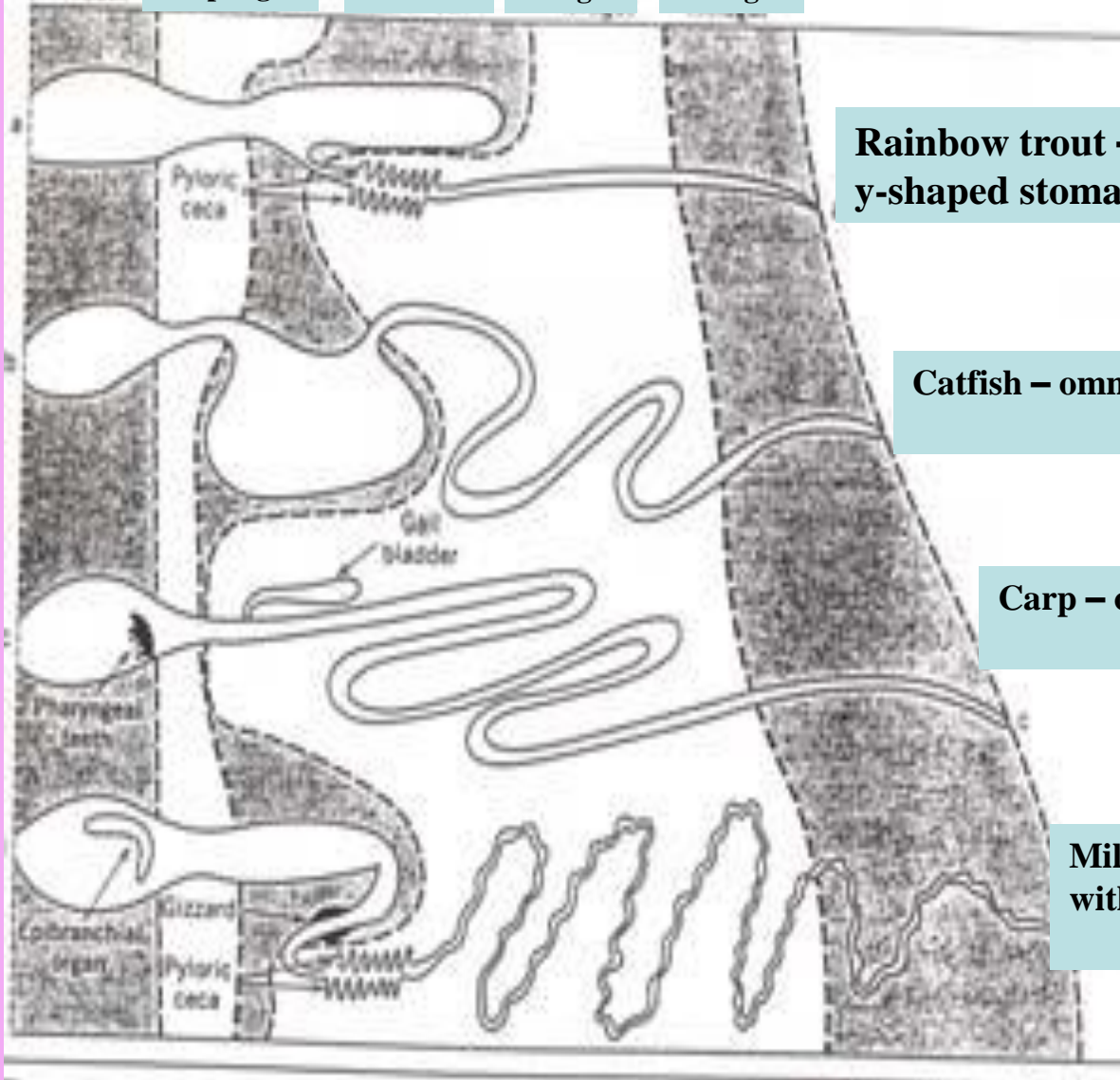
The digestive tract is made up of the:

- mouth and buccal cavity
- pharynx
- oesophagus
- stomach
- intestine (and pyloric caeca)
- rectum and anus
- accessory organs (liver, gall bladder and pancreas)



- طبيعة القناة الهضمية تعتمد على نوع الغذاء.
- لها تأثير قليل على الاحتياجات الكلية للمغذيات.

| | | | | |
|-------|-----------|---------|---------|---------|
| الفم | المريء | المعدة | الامعاء | المخرج |
| Mouth | Esophagus | Stomach | Midgut | Hindgut |



**Rainbow trout – carnivore
y-shaped stomach**

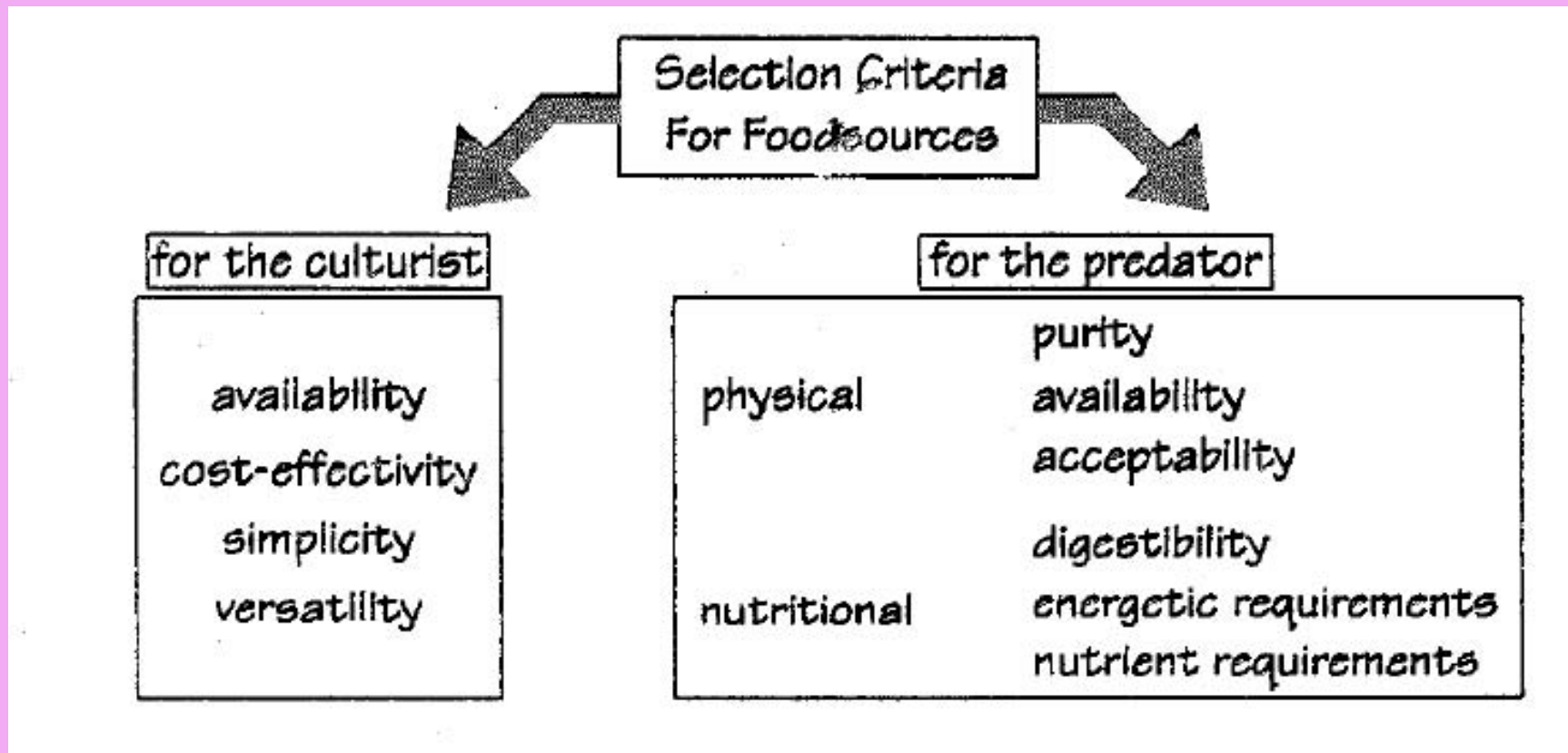
**Catfish – omnivore (animal)
pouched stomach**

Carp – omnivore (plant) no stomach

**Milkfish – planktivore tubular stomach
with muscular gizzard**

Selection criteria for larval food sources from the viewpoint of the culturist and the cultured larva

الاعتبارات المهمة في مواصفات العليقة من وجهة نظر المربي والأسماك



التركيب الكيمياءى للنبات و الحيوان

