

## *The CULTSPEC Table in FishBase*

The CULTSPEC table was established during the early development of FishBase in parallel to the CULTSYS table and reflects to date the same limited coverage, focused on freshwater species, particularly carps and tilapias.

Pending further expansion of the CULTSPEC table, more information about aquaculture species is available from FishBase as Aquaculture Species Profiles and links to FAO's Aquatic Species Fact Sheets.

Aquaculture experiments often involve more than one species, production by species is reported in this sub-table with one record per species used. Included in this table are the stocking practice, culture period, harvesting practice, mortality during the culture period and the gross yield per production cycle. The fields are described below:

### **Fields**

**Stocking rate:** Refers to the amount of fish at the beginning of the culture period. The choices for the unit are: no./m<sup>2</sup>; no./m<sup>3</sup>; no./m<sup>3</sup>/d; kg/m<sup>3</sup>. This refers only to the species considered in this record.

**Total stocking:** Refers to the total initial biomass of the considered species, in kg.

**Stocking length:** Refers to the modal or typical length of individual fish at the time of stocking, in cm. Type of length measurement is also given (SL, FL, TL or OT).

**Stocking weight:** Refers to the modal or typical weight of individual fish at the time of stocking, in g live weight.

**Stocking age:** Refers to the average age of the stocked fish, in days. This is important because of old, stunted fish that might grow very slowly and might start to breed at small sizes.

**Method used for estimation:** Refers to the method used for growth. Choices include: Ford/Walford plot, von Bertalanffy/Beverton plot, Gulland and Holt plot, non-linear regression, ELEFAN I and other methods.

The von Bertalanffy growth parameters ( $L_{\infty}$ , K) are given as the preferred measure for growth in length. These are described in more detail in a separate table (POPGROWTH table, this vol.), which distinguishes between fish grown in 'captive' and in 'open waters' (see also Box 16 and Fig. 21).

**Culture period:** Refers to the duration of production from, e.g., fingerlings to marketable size, in days.

**Harvesting practice:** Refers to the method used in harvesting the stocked fish. Choices are: batch culture; continuous stocking and harvesting; periodical stocking and harvesting; periodical stocking and continuous harvesting; variable.

**Harvesting length:** Refers to the modal or typical length of individual fish at harvest, in cm.

**Harvesting weight:** Refers to the modal or typical weight of individual fish at harvest, in g.

**Mature:** Indicates how many fish are mature at harvest with the choices: most; some; none.

**Mortality (M%):** Refers to the losses encountered during the production period, in %, computed as follows:

where **N<sub>0</sub>** is the number of fish at the beginning, and **N<sub>t</sub>** the number at the end of period **t**.

$$M\% = (N_0 - N_t) \times 100 / N_0 \quad \dots 1)$$

Also, the **Annual mortality rate (Z)** is calculated as follows:

$$Z = (\ln (100) - \ln (M\%)) / \Delta t \times 365 \quad \dots 2)$$

where **M%** is as defined, and **Δt** = production period, in days.

The **Specific growth rate** (in %) is calculated as follows:

**Ln** (harvesting weight - stocking weight) · 100/Δt.

**Gross yield:** Refers to the total yield per production cycle in wet weight. Yield per cycle here and below can have one of the following units: kg·m<sup>-2</sup>, kg·m<sup>-3</sup>, kg·m<sup>-3</sup>/d, kg·m<sup>-2</sup>·y<sup>-1</sup>, kg/m<sup>3</sup>/y.

**Net yield** is the **Gross yield** minus the biomass at stocking.

**Extrapolated yield** gives the hypothetical gross yield that would have been obtained had conditions remained the same and the production period lasted 365 days.

**Comment:** A field for miscellaneous remarks not addressed by other fields.

## Status

This table currently holds over 550 records and provides a graph for comparing the growth patterns of captive fishes from those of fishes in open waters (see Fig. 21).

## Sources

There is a huge amount of literature dealing with aquaculture species. Extracting usable information from this is difficult because of the lack of standardization in experiments.

## **Internet**

The CULTSPEC table is not yet available on the web.

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