

OBJECTIVE 3: DATA ON CATCH AND EFFORT

The Permanent Scientific Committee for Investigation and Statistics (SRCS), of the International Commission for the Conservation of the Atlantic Tuna through the Ad Hoc Group CGPM/ICCAT has requested from all countries with Large Pelagic fisheries in the Mediterranean to provide the corresponding statistics from Task I and II about effort, catch and size distributions by species, method, spatial-temporal stratus, which are necessary for the development of the analytical processes for stock evaluation.

Objective: Elaboration of the catch and effort data by species, method and spatial-temporal stratus that will serve as a basis for the posterior gathering of data on the total catch by species and method from the official off-loading data at port.

Methodology: The establishment of an Information Network at ports, tuna traps and onboard for the acquirement of catch and effort data by species, method and spatial-temporal stratus. Surveys done on captains for the acquirement of data on the fishing effort and fishing situations by trip or haul. The acquirement of official data from off-loadings by species, method and port. The use of the computer program Fisheries Management. Standardization of methods and units.

Results:

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| MOROCCO (INRH) |
|-----------------------|

Objective 3.1**DATA ON CAPTURE-EFFORT**

3.2 Data on catch and effort

3.2.1 Drift gillnet

In 1999, swordfish total catch by longliners in the ports of Tanger and Nador amounted to 2324 tones, 89% of which corresponded to the port of Tanger. A slight decrease of about 6% as compared to the previous year. Swordfish monthly data on fishing effort, catch (in number and weight), CPUE and mean weight are reported in **Table 3.1**. Fishing effort reached 6102 fishing days, which represents a 15% decrease as compared to 1998. Catch by unit of effort ranges from 65 to 571, with a maximum during the month of June. These data are shown in **Figure 3.1**.

3.2.2 Traps

In 1999, bluefin tuna catch by the “Principé” trap reached 30 tones. It must be remarked that since year 1993, reported catch have kept at a low level never exceeding a mean of 145 tones. Fishing effort remained almost stable: 152 days of bunt set during 1999 and 164 days during 1998.

Bluefin tuna catch by the traps in the Atlantic amounted to 852 tones (4142 bluefin tuna) (**Table 3.3**). Bluefin tuna monthly catch, fishing effort, CPUE and mean weight are shown in **Figure 3.3**.

3.2.3 Hand line

Bluefin tuna total catch by hand line in the Strait of Gibraltar amounted to 600 tones during 1999, which represents an increase of about 20% as compared to the previous year. Monthly data on catch and bluefin tuna mean weight are reported in **Table 3.2** and **Figure 3.2**. The number of fishing vessels was about 100, which is similar to the number of fishing vessels during 1998.

| Zone | engin | mois | poids | nombre | effort | CPUE | poids moyen(Kg) |
|-------|-------|------|---------|--------|--------|------|-----------------|
| MED | Gill | 1 | 1940 | - | - | - | - |
| MED | Gill | 2 | 24741 | - | - | - | - |
| MED | Gill | 3 | 87664 | - | - | - | - |
| MED | Gill | 4 | 198289 | 7872 | 932 | 213 | 25 |
| MED | Gill | 5 | 695000 | 17769 | 1536 | 452 | 39 |
| MED | Gill | 6 | 490096 | 9779 | 859 | 571 | 50 |
| MED | Gill | 7 | 109506 | 2255 | 455 | 241 | 49 |
| MED | Gill | 8 | 391741 | 6289 | 760 | 515 | 62 |
| MED | Gill | 9 | 218660 | 5304 | 787 | 278 | 41 |
| MED | Gill | 10 | 73844 | 1616 | 341 | 217 | 46 |
| MED | Gill | 11 | 21429 | - | 266 | 81 | - |
| MED | Gill | 12 | 10810 | - | 166 | 65 | - |
| Total | | | 2323721 | | 6102 | | |

Table 3.1 : Data on monthly capture effort of swordfish

| Zone | engin | mois | poids | nombre | poids moyen |
|-------|-------|------|--------|--------|-------------|
| MED | HAND | 1 | 0 | - | - |
| MED | HAND | 2 | 3299 | - | - |
| MED | HAND | 3 | 1873 | - | - |
| MED | HAND | 4 | 7778 | - | - |
| MED | HAND | 5 | 1815 | - | - |
| MED | HAND | 6 | 175507 | 1237 | 142 |
| MED | HAND | 7 | 288804 | 1583 | 182 |
| MED | HAND | 8 | 90310 | 601 | 150 |
| MED | HAND | 9 | 16406 | 85 | 193 |
| MED | HAND | 10 | 670 | - | - |
| MED | HAND | 11 | 13538 | - | - |
| MED | HAND | 12 | 0 | - | - |
| Total | | | 600000 | | |

Table 3.2: Data on monthly capture effort of bluefin tuna

| AREA | GEAR | MONTH | EIGHT(k) | NUMBER | EFFORT | CPUE(p) | CPUE(n) | Poids moyen(Kg) |
|-------|------|-------|----------|--------|--------|---------|---------|-----------------|
| ATL | TRAP | 4 | 136000 | 567 | 64 | 2125,00 | 8,86 | 239,86 |
| | | 5 | 624000 | 3013 | 124 | 5032,26 | 24,30 | 207,10 |
| | | 6 | 92000 | 562 | 37 | 2486,49 | 15,19 | 163,70 |
| Total | | | 852000 | 4142 | 225 | 3786,67 | 18,41 | 205,70 |

Table 3.3 : Data on capture effort of Moroccan trap-nets 1999.

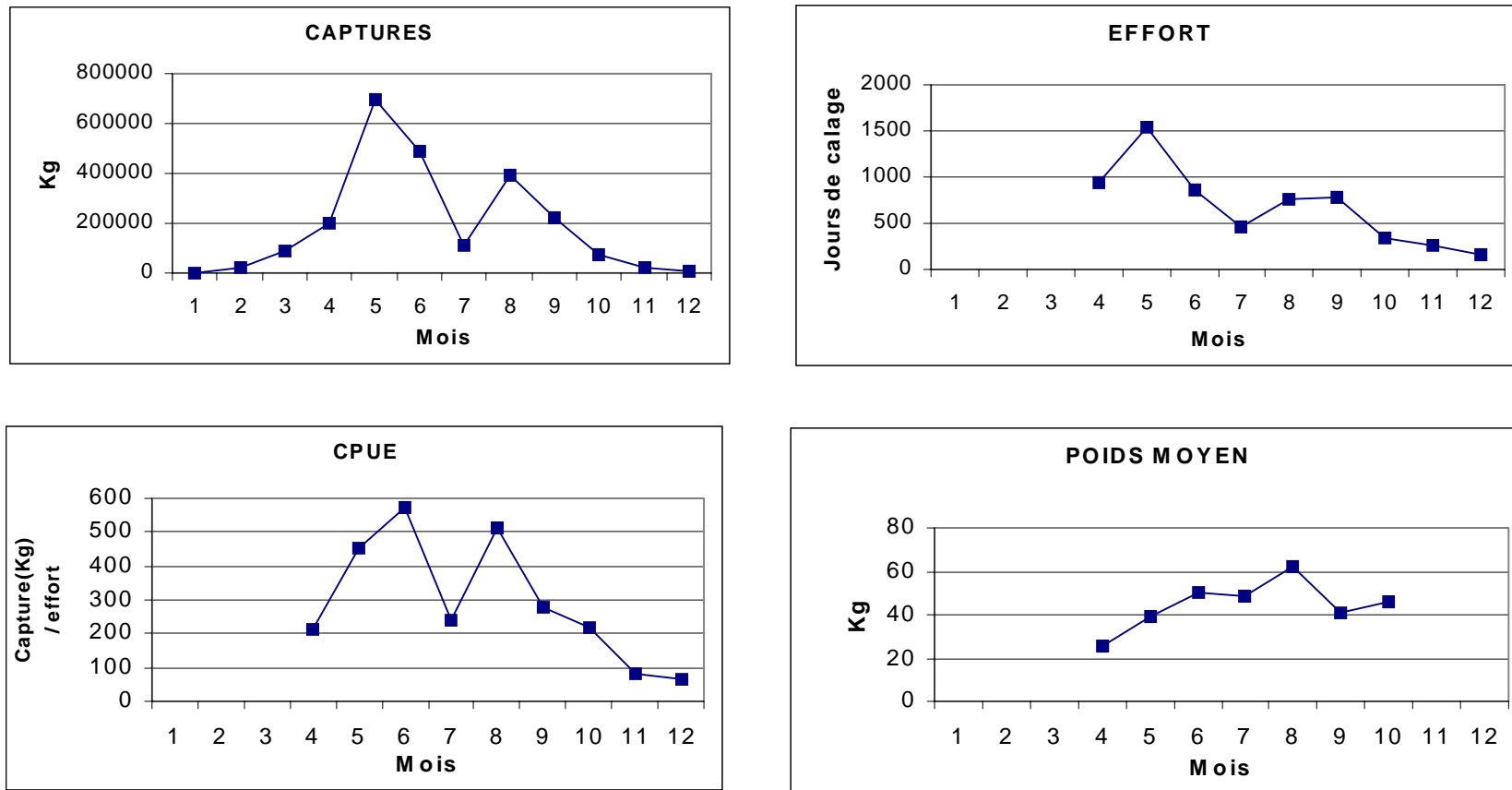


Figure 3.1 : Monthly evolution of captures, fishing effort, CPUE and average weight of swordfish caught with moroccan atlantic (MED-GILL 99)

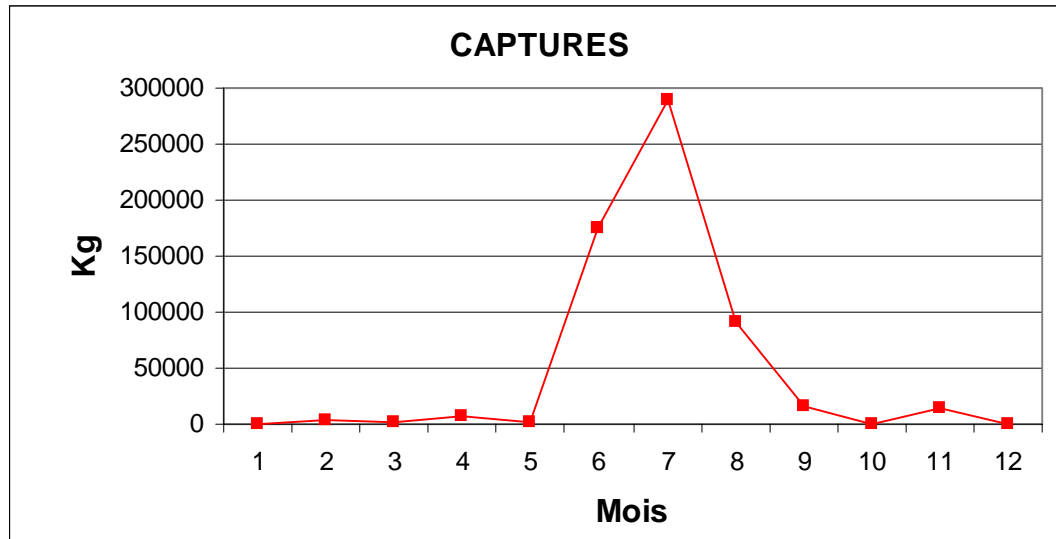


Figure 3.2 : Monthly evolution of captures and average weight of bluefin tuna (HAND 1999)

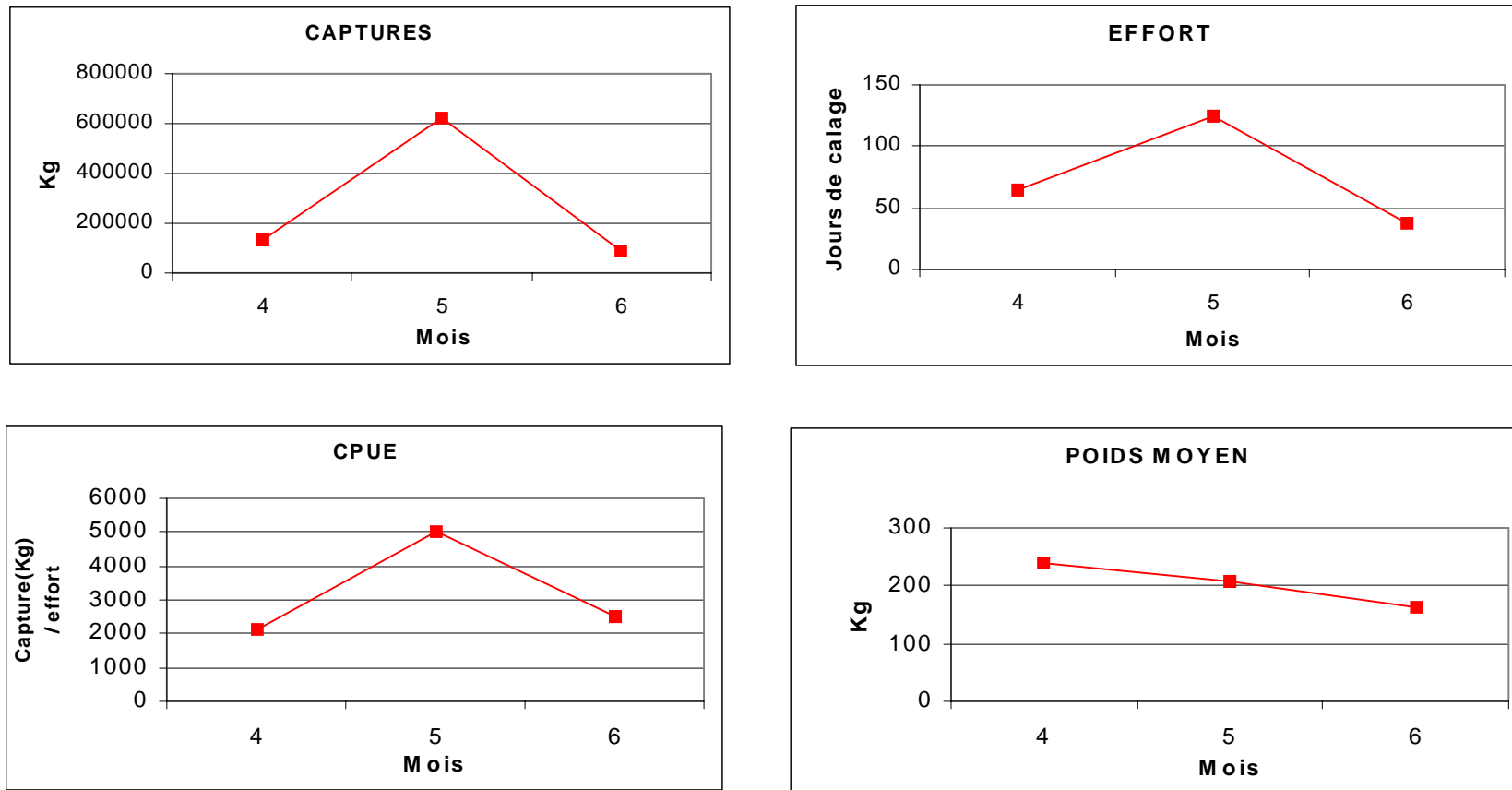


Figure 3.3 : Monthly evolution of captures, fishing effort, CPUE and average weight of bluefin tuna caught with moroccan atlantic traps

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|--------------------|
| SPAIN (IEO) |
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Objective 3.2**Data on Catch and Effort**

With the objective of gathering catch and effort data by species, method and spatial-temporal stratus, an information network was established in the ports of Algeciras, Mortril, Aguilas, Cartagena, Alicante, Castellón, San Carlos de la Rapita and Tarragona, on the Mediterranean coast. On the Atlantic coast, the ports of Barbate and Tarifa were covered in order to carry out the surveillance of the fisheries in the Gibraltar Strait.

Catch and effort data were obtained by trip of the disembarkations that were carried out in the above-mentioned ports by long line fishing vessels, purse seine vessels, hand line and live bait. By this means, the official catch data was acquired for the red tuna from tuna traps and direct landings of this species to transformation and exportation factories and to fish fattening farms, which in this last case had been previously captured by the purse seine method.

Table 3.4 shows the catch and effort data by species, method and area corresponding to the red tuna, sword fish, white tuna and small tuna caught by Spanish fisheries in the Mediterranean and the Atlantic area near the Gibraltar Strait for the year 1999.

| Species | Method | Area | Catch-n° | Catch-tn | Effort | Effort Unit |
|---------|--------------|------|----------|----------|-----------|--------------|
| SWO | TRAP | ATL | 25 | 725 | 272 | Codend Days |
| | TRAP | MED | 116 | 3310 | 276 | Codend Days |
| | LLJAP | MED | 120 | 3864 | 1215.8* | N° of hooks |
| | LLALB | MED | 3302 | 16271 | 427.40 | N° of hooks |
| | LLPB | MED | 2820 | 56442 | 556.50 | N° of hooks |
| | SURF | MED | - | 9729 | - | Fishing Days |
| | OTH | MED | - | 26529 | - | - |
| | LLHB | MED | 51288 | 790403 | 8358.994* | N° of hooks |
| BFT | TRAP | ATL | 10604 | 2004748 | 272 | Codend Days |
| | TRAP | MED | 5 | 623 | 276 | Codend Days |
| | LLJAP | MED | 2344 | 376417 | 1215.8* | N° of hooks |
| | LLHB | MED | 1896 | 28234 | - | - |
| | PS | MED | 18945 | 1503828 | 460 | Days at Sea |
| | HAND | ATL | 179 | 32570 | 111 | Fishing Days |
| | HAND | MED | 188 | 20972 | 109 | Fishing Days |
| | BB | ATL | 799 | 52659 | 117 | Fishing Days |
| | BB | MED | 82 | 3676 | 23 | Fishing Days |
| | TROL | MED | 1034 | 8277 | 29 | Days at Sea |
| | OTH | ATL | - | 2751 | - | - |
| | OTH | MED | - | 3621 | - | - |
| | SPORT | MED | - | 8993 | - | - |
| ALB | TRAP | MED | 66 | 18 | 276 | Codend Days |
| | LLALB | MED | 10268 | 72701 | 427.40* | N° of hooks |
| | LLHB | MED | 58 | 706 | - | N° of hooks |
| | SURF | MED | - | 41389 | - | Fishing Days |
| BON | TRAP (P.TUN) | ATL | 250 | 500 | 272 | Codend Days |
| FRT | | ATL | 750 | 0.6 | 272 | Codend Days |
| LTA | | ATL | 279 | 816 | 272 | Codend Days |
| BON | | MED | 9363 | 13928 | 276 | Codend Days |
| FRT | | MED | 186387 | 141998 | 276 | Codend Days |
| BON | SURF (P.TUN) | ATL | - | 11052 | - | Fishing Days |
| FRT | | MED | - | 11222 | - | Fishing Days |
| BON | | MED | - | 418437 | - | Fishing Days |
| FRT | | ATL | - | 526614 | - | Fishing Days |

* (x 1000)

Tablea 3.4. Catch and Effort data by species, method and area of the Spanish Fisheries in the Mediterranean and the South Atlantic Region for 1999.

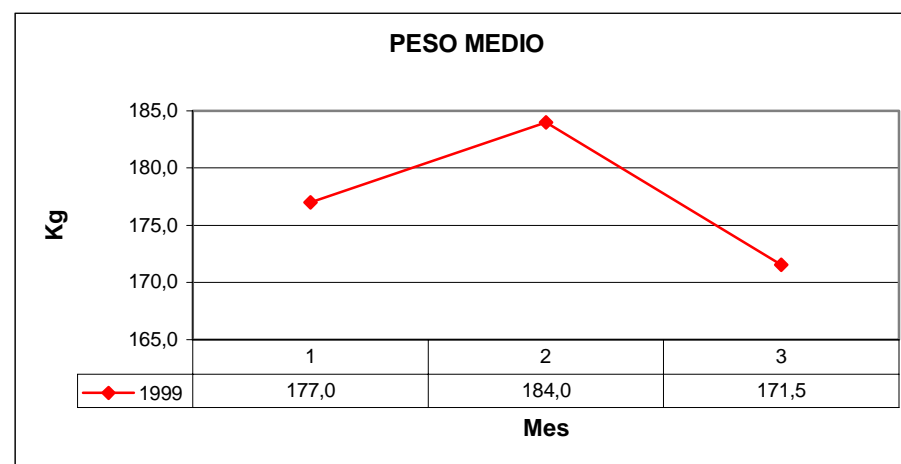
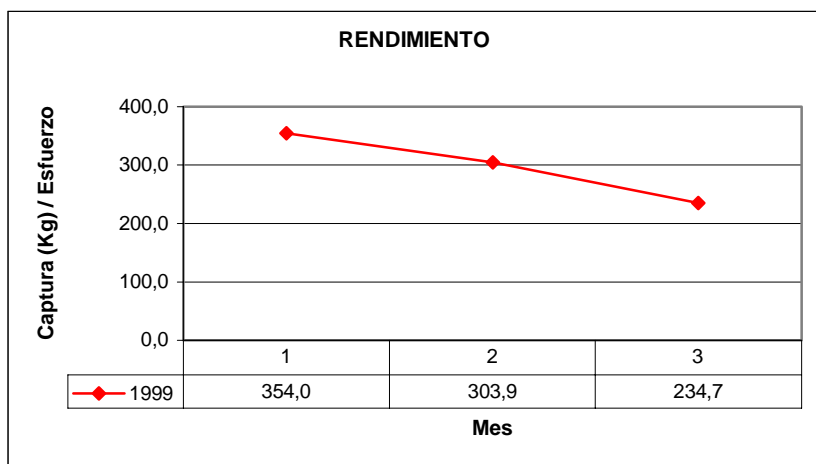
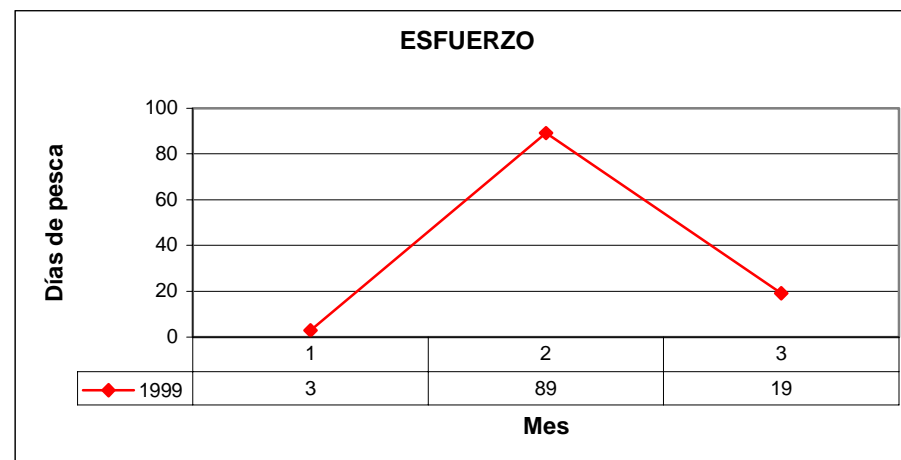
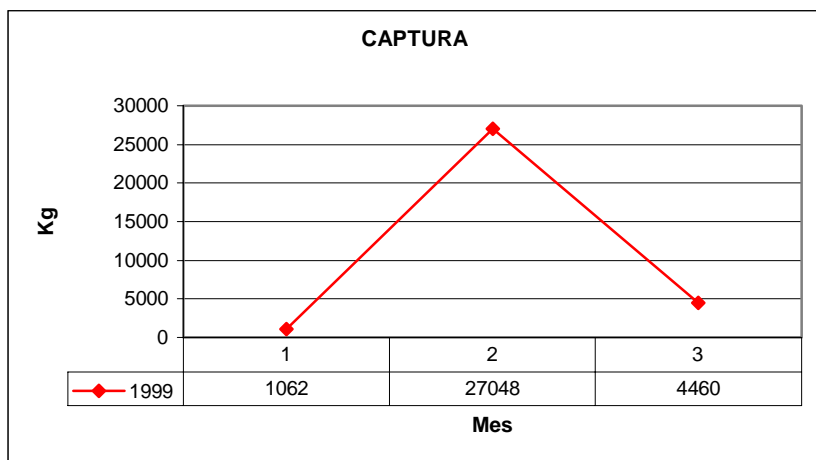


Figura 3.3 Catch, effort, yield and average weight of red tuna caught by Spain using the method of Hand line for 1999 in the Gibraltar Strait.

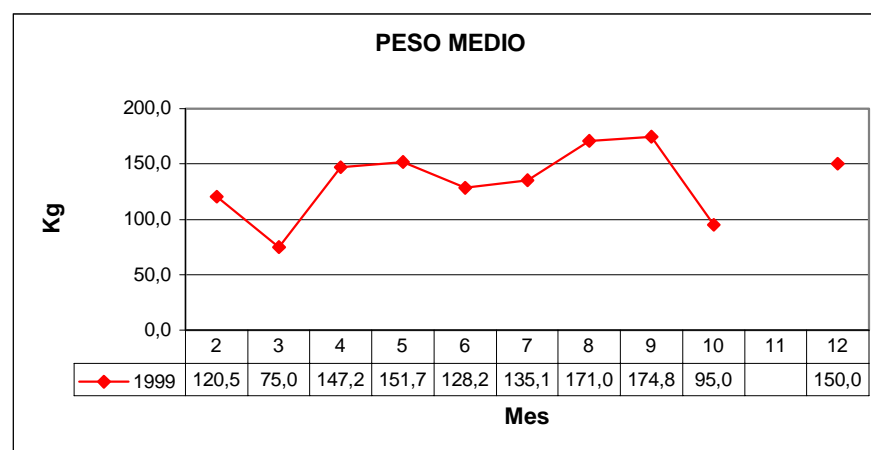
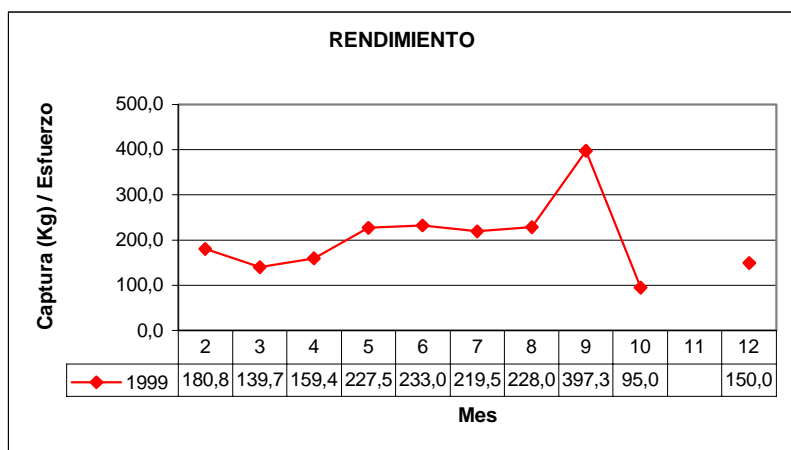
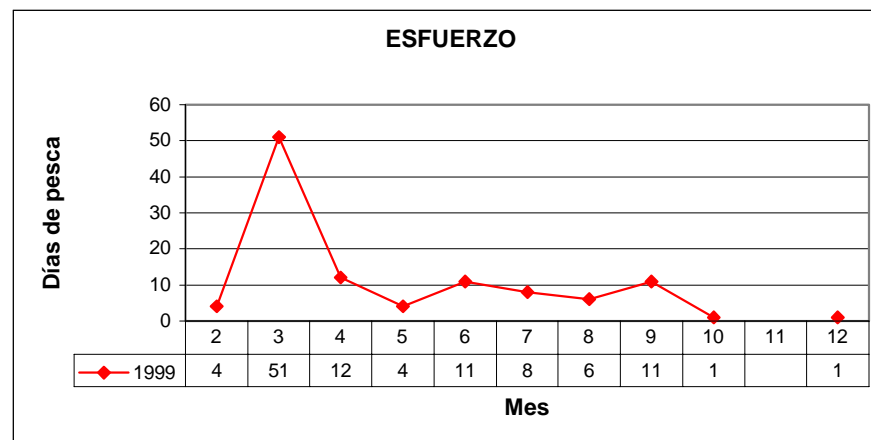
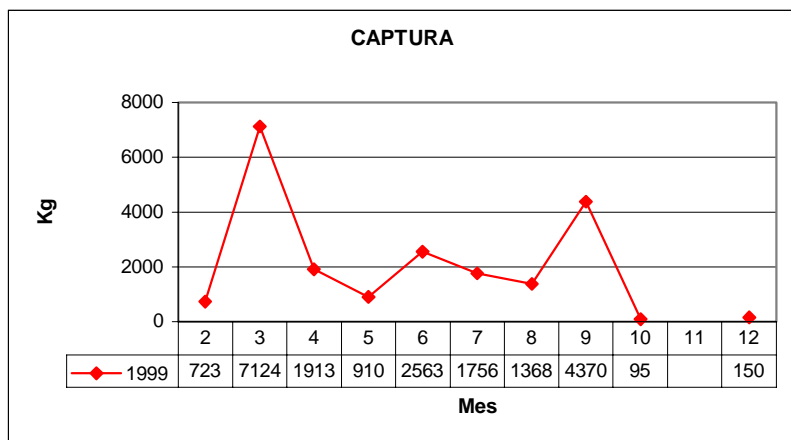


Figura 3.4 Catch, effort, yield and average weight of red tuna caught by Spain using the method of Hand line for 1999 in the Mediterranean.

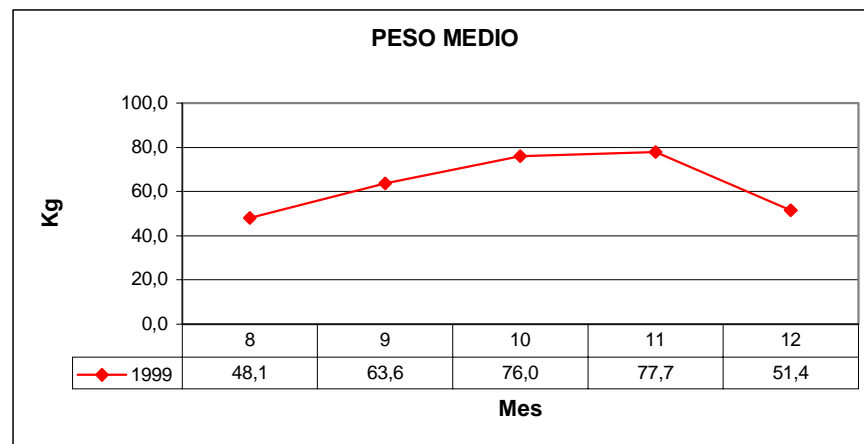
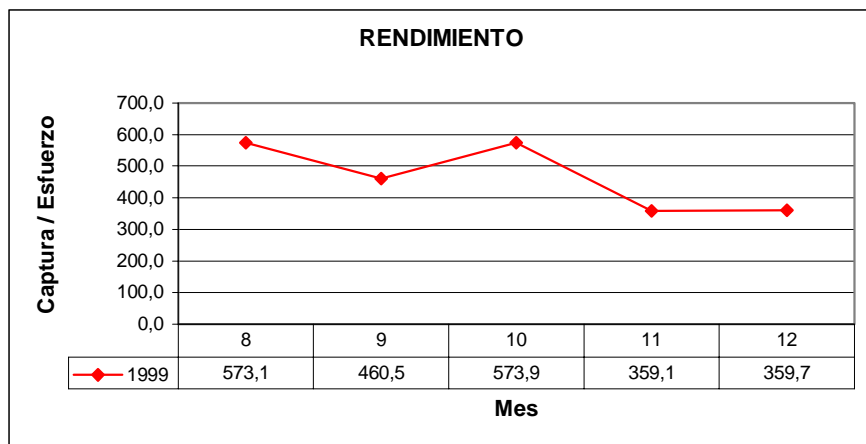
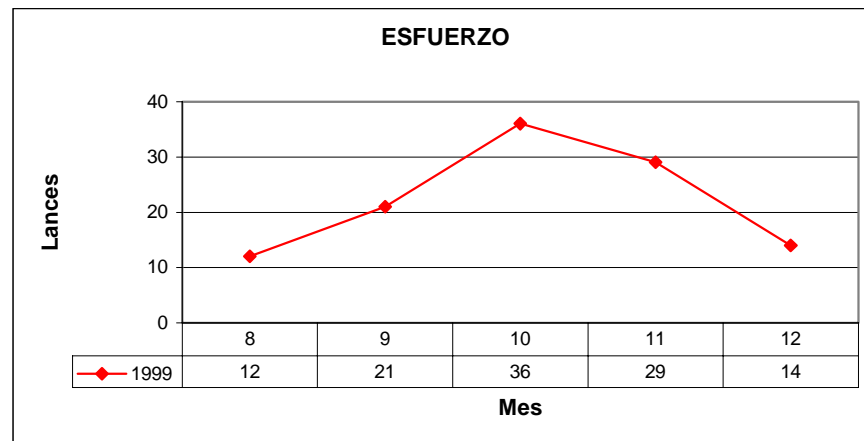
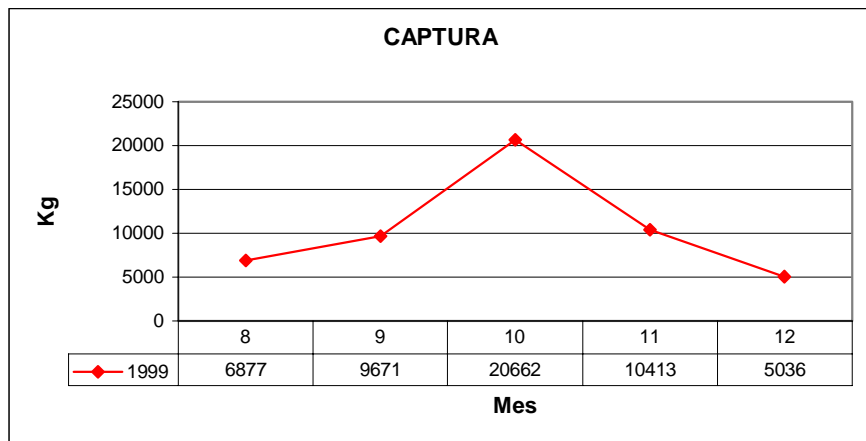


Figura 3.5 Catch, effort, yield and average weight of red tuna caught by Spain using the method of Live Bait for 1999 in the Gibraltar Strait.

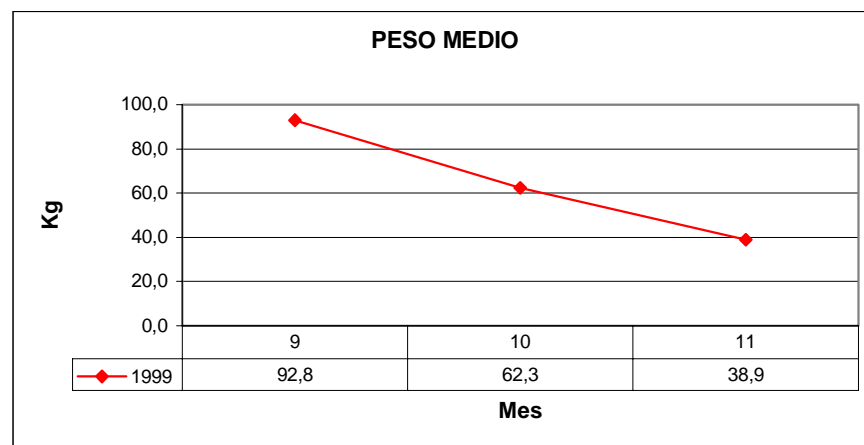
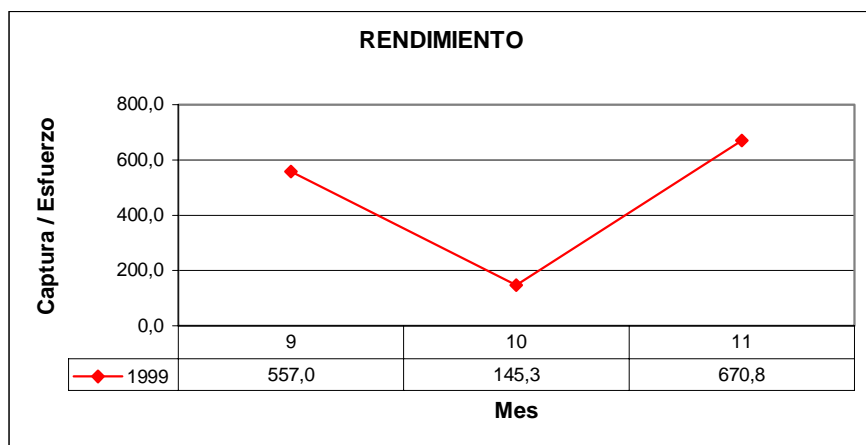
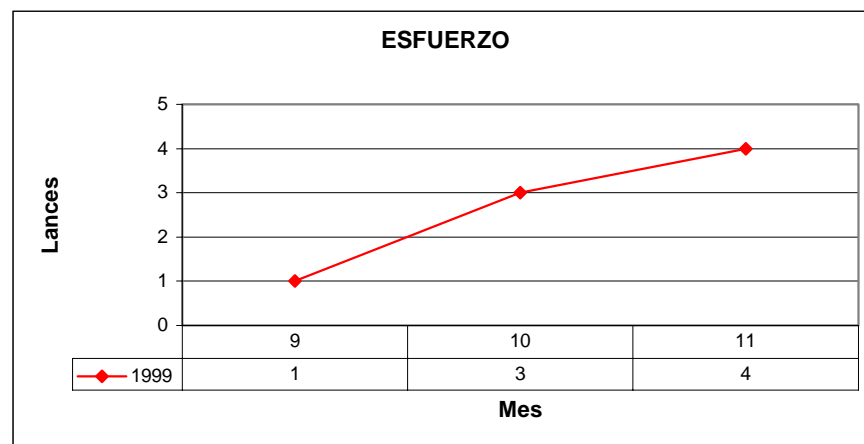
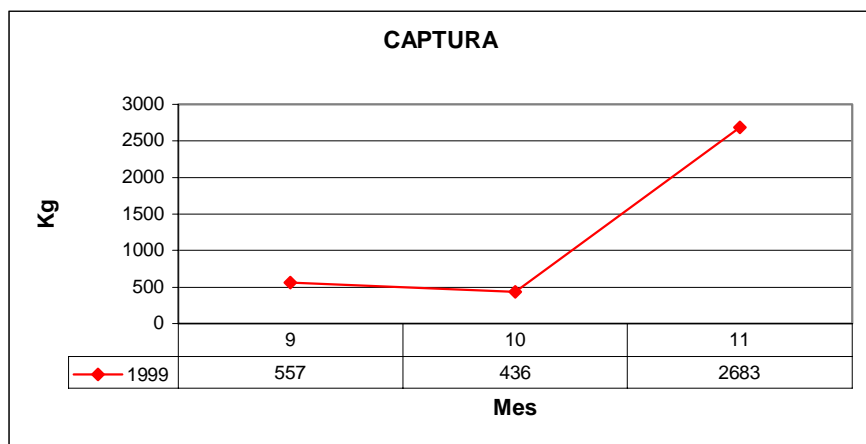


Figura 3.6 Catch, effort, yield and average weight of red tuna caught by Spain using the method of Live Bait for 1999 in the Mediterranean.

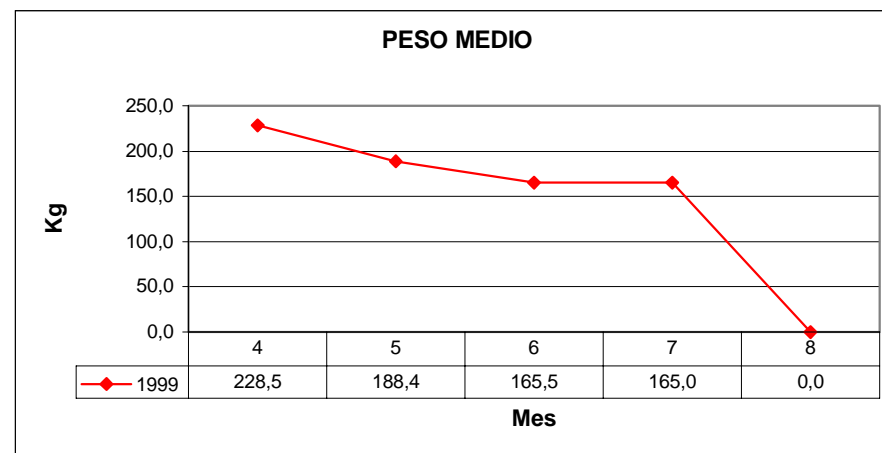
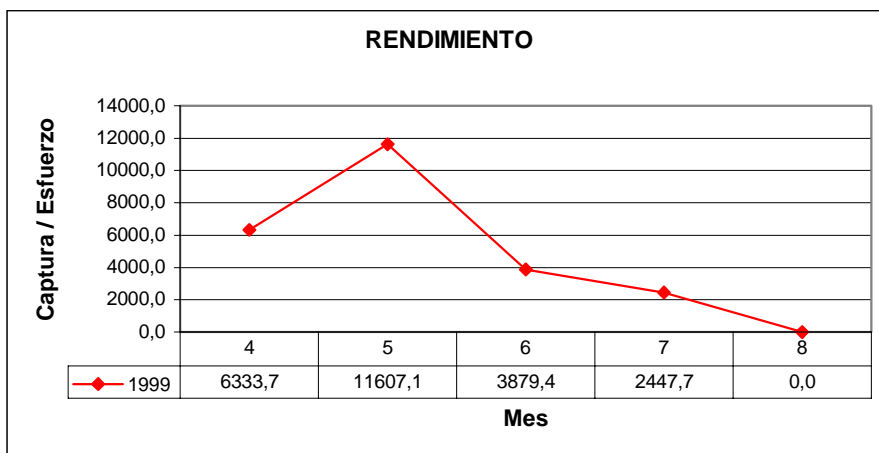
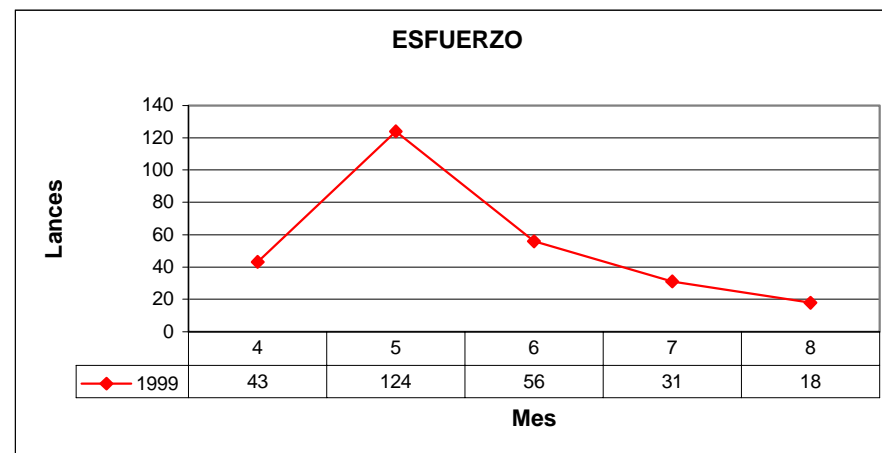
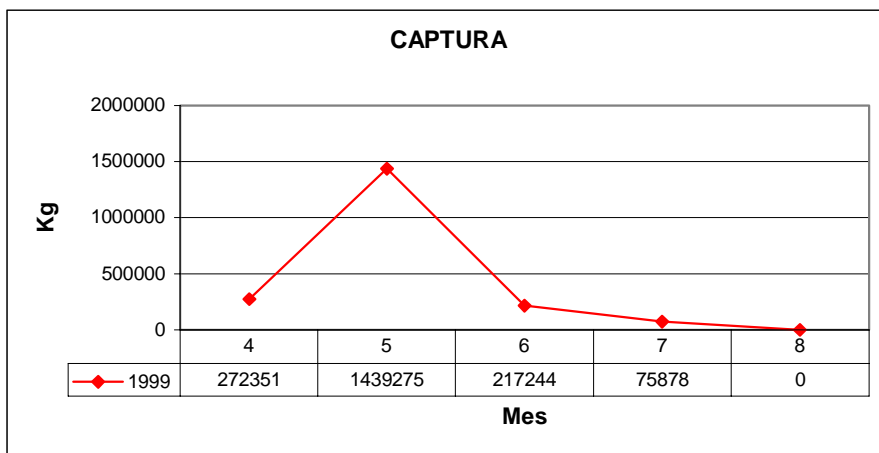


Figura 3.7 Catch, effort, yield and average weight of red tuna caught by Spain using the method of Tuna Traps for 1999 in the Atlantic.

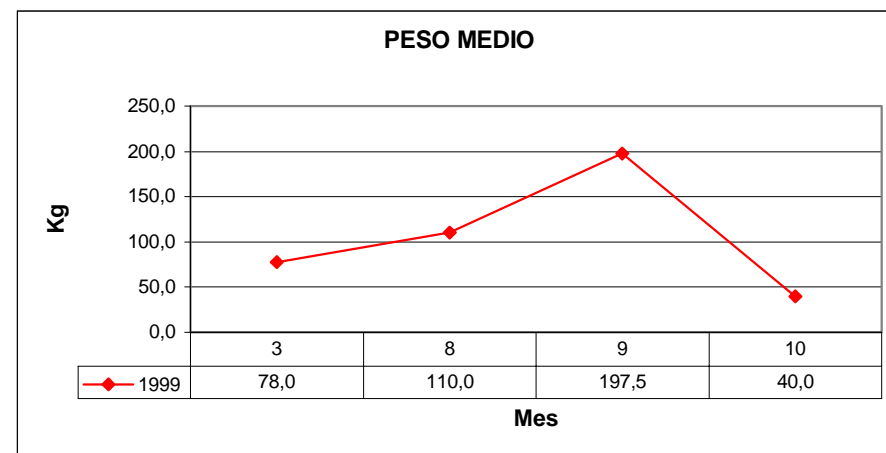
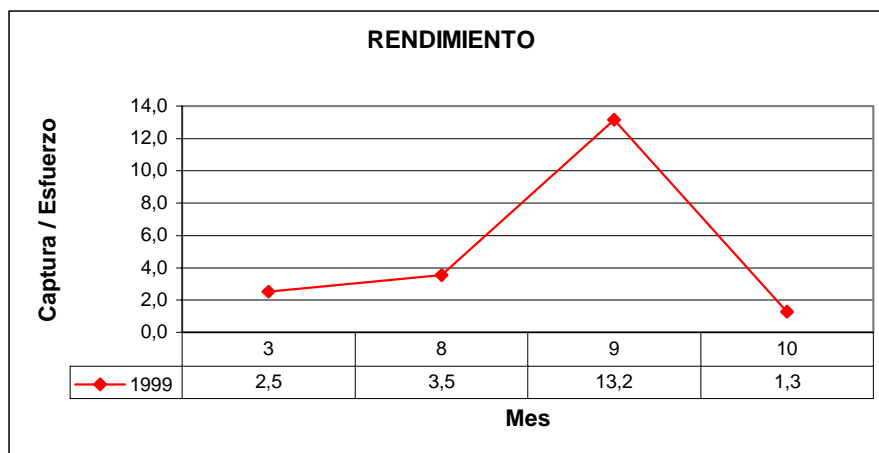
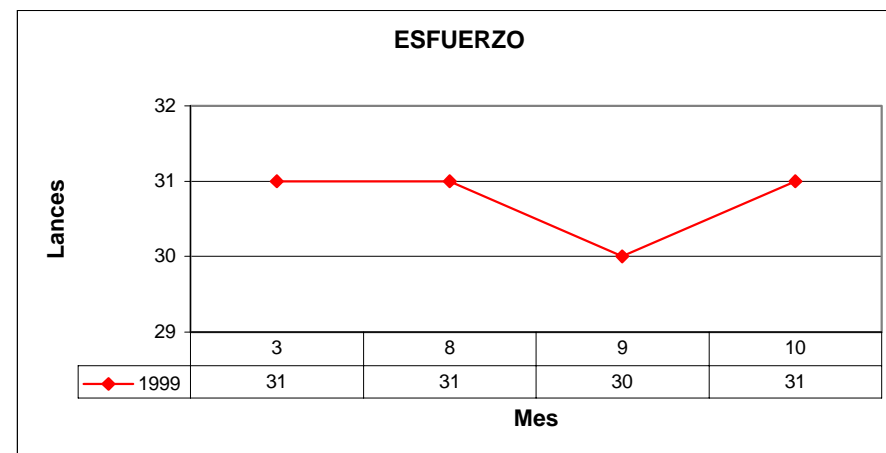
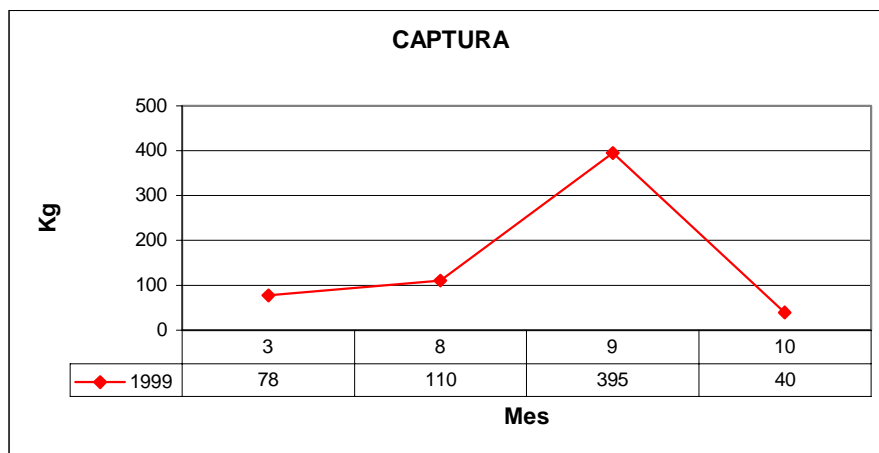


Figura 3.8 Catch, effort, yield and average weight of red tuna caught by Spain using the method of Tuna Traps for 1999 in the Mediterranean.

TÚNISIA (INSTM)

Objective 3.3

Catch and effort

The catch of red tuna by Tunisian fisheries rose to 2,314 t from which 2,263 t (98%) were caught by means of purse seine, 46 t by tuna traps and 5 t by hand line.

The effort of purse seine and long line was not available at the time of elaborating the Report. The effort of tuna traps in terms of the number of days of net setting rose to 90 days per tuna trap, that is, 180 days.

In **table 3.5**, the catch and effort data according to species, method, month, port and tuna traps are shown.

PROJECT FAO-COPEMED/ TUNIDOS'99
1999

COUNTRY: Tunisia

MONTH: May

YEAR:

Tabl. 3.5- LANDING CONTROL: DATA ON CATCH AND FISHING EFFORT BY SPECIES/ FISHING GEAR

| Port Trap Transshipment | Fishing gear | Number of landings at port or net lifting at traps or transshipment at sea | Species | Catch | | Fishing Effort | Fishing Area |
|-------------------------------|--------------|--|--------------|--------|--------------|----------------|------------------|
| | | | | Number | Total weight | | |
| SFax | Purse seine | | Bluefin tuna | 917 | 132 | | Large of Gabés |
| Tabarca | Longline | | Swordfish | | 0,25 | | Large of Bizerte |
| Sidi Daoud | Trap | | Bluefin tuna | 145 | 30 | | Gulf of Tunis |
| Monastir | Trap | | Bluefin tuna | 118 | 7 | | |
| Transshipment | Purse seine | | Bluefin tuna | 0 | 0 | | |
| Transshipment | Longline | | Bluefin tuna | 0 | 0 | | |
| Other | | | | | | | |

PROJECT FAO-COPEMED/ TUNIDOS'99**COUNTRY:** Tunisia**MONTH:** Jun**YEAR:** 1999**Tabl. 3.5-** LANDING CONTROL: DATA ON CATCH AND FISHING EFFORT BY SPECIES/ FISHING GEAR

| Port | Fishing gear | Number of landings at port or net lifting at traps or transshipment at sea | Species | Catch | | Fishing Effort | Fishing Area |
|----------------------|--------------|--|--------------|----------|--------------|----------------|------------------|
| | | | | Number | Total weight | | |
| Trap | | | | | | | |
| Transshipment | | | | | | | |
| SFax | Purse seine | | Bluefin tuna | 3000 | 687 | | Large of Gabés |
| Tabarca | Longline | | Swordfish | 23 | 0,8 | | Large of Bizerte |
| Sidi Daoud | Trap | | Bluefin tuna | No catch | | | Gulf of Tunis |
| Monastir | Trap | | Bluefin tuna | No catch | | | |
| Transshipment | Purse seine | | Bluefin tuna | 0 | 0 | | |
| Transshipment | Longline | | Bluefin tuna | 0 | 0 | | |
| Other | | | | | | | |

PROJECT FAO-COPEMED/ TUNIDOS'99**COUNTRY:** Tunisia**MONTH:** july**YEAR:** 1999

Tabl. 3.5- LANDING CONTROL: DATA ON CATCH AND FISHING EFFORT BY SPECIES/ FISHING GEAR

| Port | Fishing gear | Number of landings at port or net lifting at traps or transshipment at sea | Species | Catch | | Fishing Effort | Fishing Area |
|----------------------|--------------|--|--------------|------------|--------------|----------------|------------------|
| | | | | Number | Total weight | | |
| Trap | | | | | | | |
| Transshipment | | | | | | | |
| SFax | Purse seine | | Bluefin tuna | 245 | 30 | | Large of Gabés |
| Tabarca | Longline | | Swordfish | 11 | 0,38 | | Large of Bizerte |
| Sidi Daoud | Trap | | Bluefin tuna | No fishing | 0 | | Gulf of Tunis |
| Monastir | Trap | | Bluefin tuna | No fishing | 0 | | |
| Transshipment | Purse seine | | Bluefin tuna | 0 | 0 | | |
| Transshipment | Longline | | Bluefin tuna | 0 | 0 | | |
| Other | | | | | | | |

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| MALTA (NAC) |
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Objective 3.4**Catch Data****3.1 Collection of Data**

In order to forecast how a stock would react to fishery and what the future potential yield of a stock would be, the age and size of the stock as well as the catch has to be known. In most cases it is not possible to measure all fish caught. Therefore, it is necessary to sample part of the catch. Since the catch is not homogenous in terms of species and size of fish, a proper sampling design is essential for estimating the size composition of the entire catches.

In this study, after studying from previous statistics the separate amounts of tuna caught by the fishermen, two vessels were identified which between them usually catch around 10% of the total tuna catches for Malta.

The owners of the two fishing vessels were contacted and asked to help with this project by allowing an observer on board to stay on the fishing vessel during fishing. The observers on board were taught how to collect the necessary information by the procedures described below.

3.2 On Craft Statistics Data Form

Each time the fishermen of the identified vessels went out fishing (depending on the weather conditions), the observers on board were asked to fill the forms shown in **Table 3.6**. The fishing vessels only stayed inside the port during rough weather.

| | |
|--|--|
| Craft Number | |
| Fishing Area | |
| Days at Sea | |
| Meteorological Conditions: Sea surface temperature (°C) Wind Direction Wind Force | |
| Number of Fish Caught | |
| Total Weight of Catch | |

Table 3.6 On Craft Statistics Data Form

3.3 Tuna Data Forms

Each bluefin tuna that was caught was immediately tagged using appropriate yellow tags (**Fig. 3.9**) which were individually numbered. This enabled better handling of the data regarding each bluefin tuna caught. Different tag numbers were used by each observer on board. The tuna were tagged between the first and second dorsal rays by using an appropriate gun. For each bluefin tuna caught, the following data form was filled (**Table 3.7**)

| | |
|--------------------------------------|--|
| Tag Number | |
| Depth from where tuna was caught (m) | |
| Fork Length (cm) | |
| Weight (kg) | |
| Sex | |
| Length of Gonads (cm) | |
| Weight of Gonads (g) | |

Table 3.7 Tuna Data Forms



Figure 3.9 Yellow Tags used During Sampling of Bluefin Tuna

3.4 Measurement of Fork Length

The ideal location for measuring fish is at sea on board the fishing vessel itself. This task was easily carried out by the observers on board the fishing vessels.

Plastic calipers were used to measure the tuna on board. Each fish was placed on a flat surface in a horizontal position while being measured.

The measurement taken was the fork length (FL), i.e. a projected straight distance from the tip of the upper jaw to the posterior tip of the shortest caudal ray (**Fig. 3.10**).

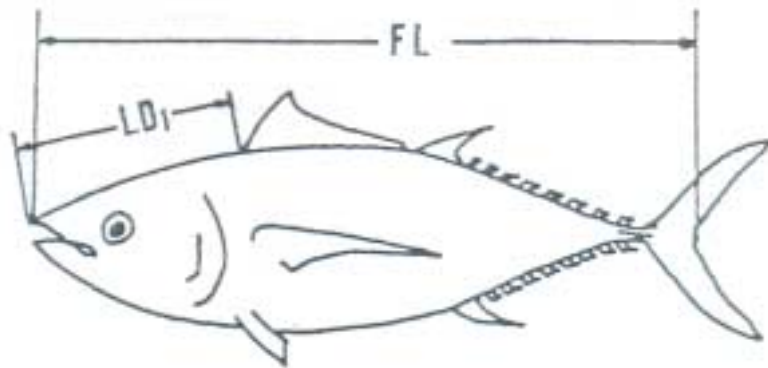


Figure 3.10 Length Measurements of Bluefin Tuna

3.5 Weight Measurements

Since no electronic balances were available on board, the individual tuna could not be measured out at sea. Therefore when the separate tuna arrived at the fish market, an agreement was arranged with the Fisheries Officer on duty so that when any tagged tuna arrived at the fish market, records were kept of the tag numbers of the fish together with the respective weights.

At the fish market, the tuna were lifted from the trucks using a hook attached to an electronic balance (**Fig. 3.11**). Therefore as the fish were being unloaded, they were being weighed and a record was kept of the tag number and the respective weight.

The weight recorded was the gutted weight, i.e. the individual weight of the tuna without the internal organs.



Figure 3.11 Weighing Bluefin Tuna at the Fish Market

3.6 Collection of Data from Fish Market

Important data was collected daily from the fish market. This included all the individual weights of the bluefin tuna caught during May and June (**Table 3.8**)

| | |
|--------------------------|--|
| <i>Date</i> | |
| <i>Quantity (number)</i> | |
| <i>Fish Species</i> | |
| <i>Weight (kg)</i> | |

Table 3.8 Fish Market Data Forms

3.7 Results

Table 3.3 shows the number of BFT caught during each month and their respective weight. The average weight for BFT for each month is also calculated. **Fig. 3.12 and 3.13** are graphical distributions of the results obtained in **Table 3.9**.

| <u>Month</u> | <u>Number</u> | <u>Catch/kg</u> | <u>Average weight / kg</u> |
|--------------|---------------|-----------------|----------------------------|
| 3 | 2 | 209 | 104.5 |
| 4 | 3 | 392 | 130.7 |
| 5 | 789 | 135612 | 171.9 |
| 6 | 347 | 45118 | 130.0 |
| 7 | 151 | 23730 | 157.2 |
| Total | 1292 | 205061 | 158.7 |
| Controlado | | | |
| Total ICCAT | | 269000 | |

Table 3.9 Tuna Catches for 1999

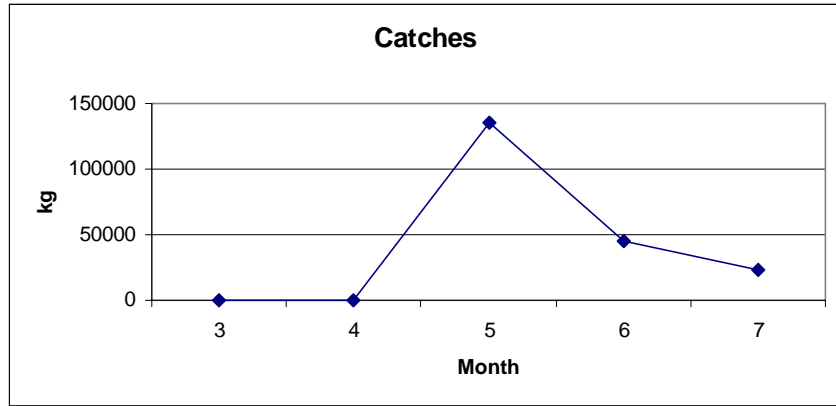


Fig. 3.12 Weight (kg) of BFT caught by LLHB during the Year 1999

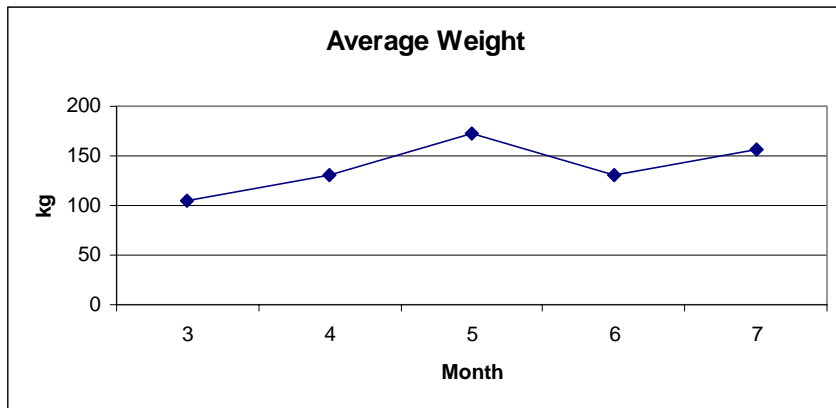


Fig. 3.13 Average Weight of BFT caught by LLHB during the year 1999

3.8 Data Collected for SWO

As regards swordfish, the only data that could be collected was the total weight of SWO for each month. No individual readings were collected since there were no observers on board SWO fishing vessels or at the fishmarket. Data collected is shown in **Table 3.10** and **Fig. 3.14** is a graphical representation of the data collected.

| <u>MONTH</u> | <u>WEIGHT (Kg)</u> |
|--------------|--------------------|
| 1 | 2956 |
| 2 | 404 |
| 3 | 765 |
| 4 | 686 |
| 5 | 8774 |
| 6 | 19228 |
| 7 | 45996 |
| 8 | 32055 |
| 9 | 11330 |
| 10 | 12986 |
| 11 | 10193 |
| 12 | 1525 |
| Total | 146898 |

Table 3.10 SWO Catches per Month for 1999

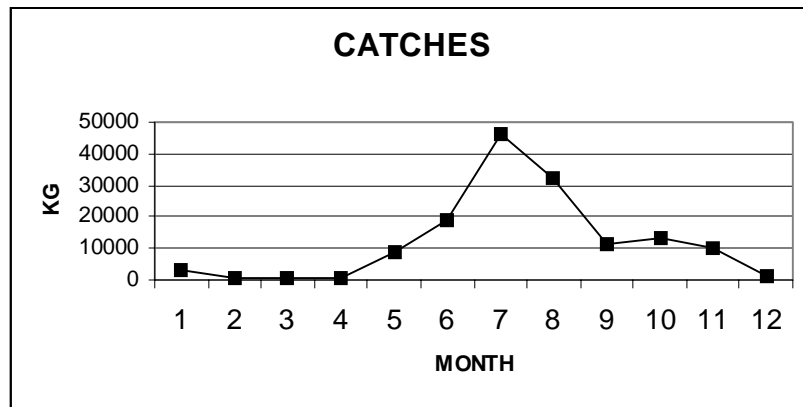


Fig. 3.14 Swordfish Catches per Month for 1999

| |
|---------------------|
| LIBYA (MBRC) |
|---------------------|

Objective 3.5**Catch and effort**

The catch of red tuna by Libya in 1999 rose to 745 t. With regard to method, the catch by tuna traps reached 100 t, with superficial long lines catching 450 t and purse seine fishing 195 t.

In order to obtain catch and effort data, an information and sampling program was established at tuna traps and observers were placed onboard long line and purse seine fishing vessels. The obtained results are shown below:

TUNA TRAPSZreg Tuna Trap

The season for 1999 started 27 / 5 / 1999 and finished 30 / 6 / 1999. The total number BF tuna fish caught during the season was 918 fish with an average weight of 47 kg while the average length was 157 cm. The total weight of the fish was 43,557 kg. from (8) net liftings. **Table No. 3.11** shows the date of the net lifting, total weight and number of fish in each net lifting.

Table 3.11

| No. of net liftings | Date | No. of fish | Weight of fish in kg. |
|----------------------------|-------------|--------------------|------------------------------|
| 1 | 27/5/99 | 276 | 13769 |
| 2 | 02/6/99 | 171 | 8335 |
| 3 | 04/6/99 | 48 | 2207 |
| 4 | 16/6/99 | 233 | 9734 |
| 5 | 17/6/99 | 44 | 2160 |
| 6 | 19/6/99 | 24 | 1150 |
| 7 | 29/6/99 | 92 | 4561 |
| 8 | 30/6/99 | 30 | 1641 |
| | 35 days | 918 | 43557 kg |

The No. of little tuna was 1,150 with total weight of 11,121 kg.

Gazira Tuna Trap

This trap was situated about 5 km. east of ZREG tuna trap. The season started 16/5/99 and finished 28/6/99. The total No. of blue fin tuna caught during the 1999 season was 850 fish, whereby the average length was 157 cm. while the average weight was 50 kg. The total weight was 42,500 kg. from seven (7) net liftings. **Table 3.12** shows the date of the net lifting, total weight and number of BFT fish in each net lifting.

Table 3.12.

| No. of net liftings | Date | No. of fish | Weight of fish in kg. |
|---------------------|---------|-------------|-----------------------|
| 1 | 16/5/99 | 210 | 10500 |
| 2 | 27/5/99 | 160 | 8000 |
| 3 | 28/5/99 | 110 | 5500 |
| 4 | 31/5/99 | 120 | 6000 |
| 5 | 08/6/99 | 60 | 3000 |
| 6 | 20/6/99 | 120 | 6000 |
| 7 | 28/6/99 | 70 | 3500 |
| | ----- | ----- | ----- |
| | 44 days | 850 | 42500 kg |

N.B. The number of little tuna fish was 2,500 with a total weight of 10,000 kg.

Zeletin Tuna Trap

This trap was situated about 80 km. west of ZREG tuna trap. The season for the year 1999 started in 16 / 5 / 1999 and finished 25 / 6 / 99 with only two net liftings. The total No. of BFT fish was 200 fish with a total weight of 13,500 kg.

Garabulli Tuna Trap

This trap was situated east of Tripoli. Although the net was placed in early May, there were unfortunately no fish caught in the year 1999.

SURFACE LONG LINE

In 1999 the total catch of BFT from the Libyan waters was 450 metric tons by these vessels. The weight of the fish ranged from 25 kg to 280 kg. The majority were between 25 kg and 70 kg.

Table 3.13 shows the catch data by haul, obtained by observers onboard the long line vessel.

| Weih (Kg) | Dias de pesca | Nº Anzuelos |
|-----------|---------------|-------------|
| 323 | 1 | 2500-3000 |
| 5613 | 1 | 2500-3000 |
| 2961 | 1 | 2500-3000 |
| 297 | 1 | 2500-3000 |
| 1344 | 1 | 2500-3000 |
| 2247 | 1 | 2500-3000 |
| 570 | 1 | 2500-3000 |
| 1351 | 1 | 2500-3000 |
| 5811 | 1 | 2500-3000 |
| 4172 | 1 | 2500-3000 |
| 3617 | 1 | 2500-3000 |
| 2244 | 1 | 2500-3000 |
| 1942 | 1 | 2500-3000 |
| 1695 | 1 | 2500-3000 |
| 2271 | 1 | 2500-3000 |
| 1161 | 1 | 2500-3000 |
| 2031 | 1 | 2500-3000 |
| 1533 | 1 | 2500-3000 |
| 1508 | 1 | 2500-3000 |
| 182 | 1 | 2500-3000 |
| 39 | 1 | 2500-3000 |
| 514 | 1 | 2500-3000 |
| 1268 | 1 | 2500-3000 |
| 438 | 1 | 2500-3000 |
| 446 | 1 | 2500-3000 |
| 45578 | 25 | |

Table 3.13 Catch and effort by long line fishing of red tuna in Libya 1999 (One vessel).

The catch of the sword fish by the long line fishery was inestimable.

PURSE SEINE

The total catch from one of these vessels was 33,110 kg with about 407 fish and the weight of the fish ranged from 25 kg to 270 kg. The majority were between 100 kg and 150 kg.

Table 3.14 shows the daily catch data by number, weight and effort obtained by an observer onboard the red tuna purse seine vessel. **Figure 3.15** shows the catch by number and weight, fishing effort and average weight for each month that the purse seine vessel had an observer onboard.

| Date | Nº | Weiht (Kg) | Effort | W |
|----------|-----|------------|--------|-----|
| 10/06/99 | 4 | 245 | 1 | 61 |
| 11/06/99 | 10 | 455 | 1 | 46 |
| 12/06/99 | 14 | 865 | 1 | 62 |
| 13/06/99 | 18 | 1345 | 1 | 75 |
| 14/06/99 | 35 | 2535 | 1 | 72 |
| 15/06/99 | 9 | 445 | 1 | 49 |
| 16/06/99 | 48 | 3810 | 1 | 79 |
| 17/06/99 | 31 | 3535 | 1 | 114 |
| 18/06/99 | 11 | 745 | 1 | 68 |
| 19/06/99 | 2 | 70 | 1 | 35 |
| 20/06/99 | 29 | 2315 | 1 | 80 |
| 21/06/99 | 50 | 5260 | 1 | 105 |
| 22/06/99 | 9 | 1320 | 1 | 147 |
| 23/06/99 | 15 | 1430 | 1 | 95 |
| 25/06/99 | 29 | 1695 | 1 | 58 |
| 26/06/99 | 6 | 385 | 1 | 64 |
| 27/06/99 | 12 | 800 | 1 | 67 |
| 28/06/99 | 28 | 2510 | 1 | 90 |
| 29/06/99 | 2 | 90 | 1 | 45 |
| 30/06/99 | 26 | 1945 | 1 | 75 |
| 02/07/99 | 4 | 310 | 1 | 78 |
| 04/07/99 | 6 | 350 | 1 | 58 |
| 05/07/99 | 4 | 235 | 1 | 59 |
| 06/07/99 | 8 | 415 | 1 | 52 |
| Total | 410 | 33110 | 24 | 81 |

Table 3.14 Catch and effort of purse seine fishing of Red Tuna in Libya 1999. (One vessel).

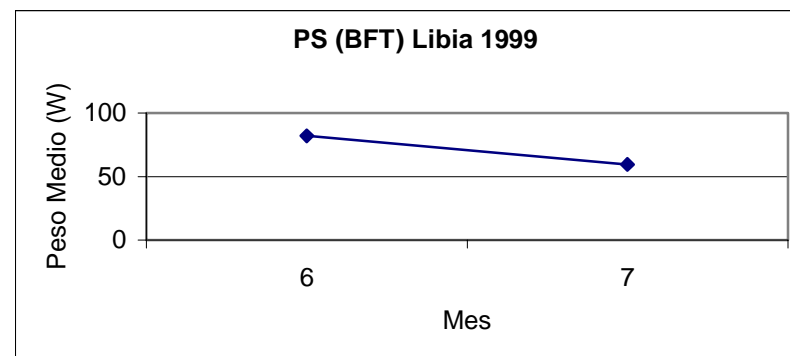
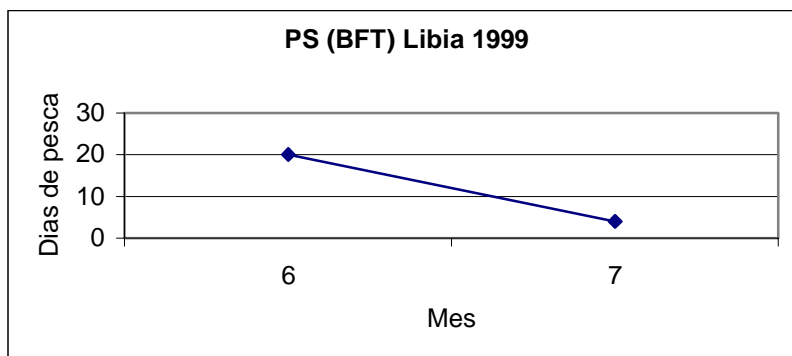
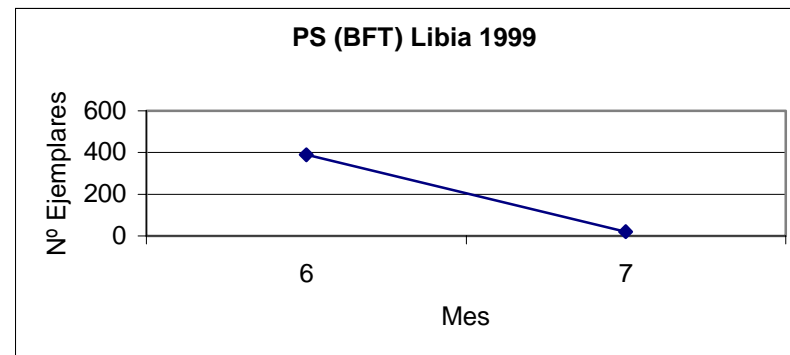
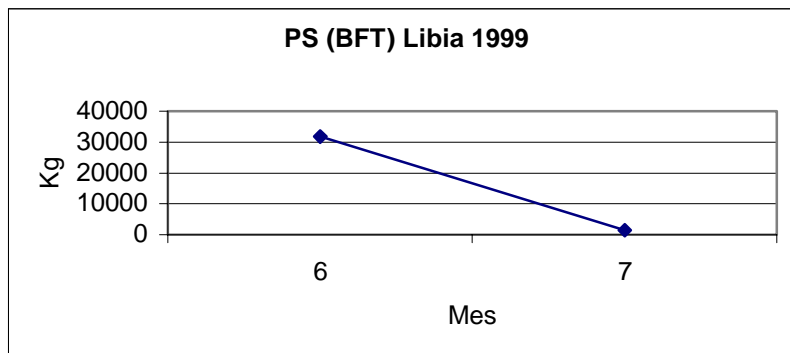


Figure 3.15 Catch by number and weight, fishing effort and average weight for each month an observer was onboard the purse seine vessel. Libya 1999 PS-BFT.