

POST-HARVEST LOSSES OF FISH IN  
WESTERN SAMOA

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## INTRODUCTION

Of all available protein sources fish is one of the most susceptible to rapid bacterial breakdown, especially in a climate with high humidity and temperature like Western Samoa. Therefore fish must be eaten or processed in no more than 4 to 6 hours after capture - time value depends on species and method of capture-unless some form of preservation is used during that critical period. The ideal local situation is for the fishermen to have their fish ice - chilled immediately at time of catch to reduce the possibility of post - harvest losses. Over the past few years with the help of various international organisations and by trial and error forward steps have been taken towards achieving this goal.

## DISCUSSION

Prior to 1977 fishermen had no means of preserving their fish from spoilage. At this time most fishermen were fishing from paopaos (outrigger canoes) and fish were caught as per the demand. A few fishermen had purchased alias (outboard motor powered twin hulled boats) and were bringing in sizeable catches. They still sold their fish from door to door in an attempt to dispose of it as quickly as possible. In the 50's and early 60's a small leva tree in front of the main post office was established as the "fish tree". Fishermen would hand their strings of bottom fish and tuna from the branches of this tree and retail to consumers. When the Savalalo Produce Market was erected in the early 60's a table was made available for fishermen to sell their fish. However there was no form of refrigeration present. Needless to say, there were many complaints from consumers as to the poor condition of the fish sold in this manner. This was the state of fish retail until August 1977 when a Government controlled fish market was established in the same market under the Agriculture building. The fish market contained a ten ton refrigeration unit, flake-ice making machine and a 5 ton truck all supplied by F.A.O. Additionally, a small 500 lb refrigeration unit, fish scales and coolers were supplied under New Zealand aid. At this time only a limited supply of ice was available. Flaked ice in a large plywood box that fitted on the bed of the truck travelled around Upolu island twice weekly to collect fish from the district areas and deliver ice to those fishermen who had ice boxes. This form of collecting fish soon became quite expensive. In early 1978 Japanese aid supplied 10 one ton capacity self powered refrigeration units to be set up in highly active fishing areas around Upolu and Savaii. The visits by the truck with ice were reduced to one trip per week once the units were operational. The units were placed under the control of persons of standing in these areas. The operating budget was financed by a 5% mark-up retained by the operator. Some of the fish was sold by the operator to local consumers and the rest was picked up by the truck and transported to Apia. The procedure however began to have problems after about 18 months. The tapping of electricity for lighting fales (homes) caused many burnouts. Other units were damaged by dirty water which jammed the ice and cold producing mechanisms. To further complicate the situation fishermen began to by-pass the middleman and send their fish directly to

ia. Since a lot of aid money had been invested in this project Fisheries Division n  
t up meetings in the various districts to try and revive the system. However the  
shemen refused to change and thus the project was abandoned and the cooling  
its brought to Apia.

nce then fisheries has been trying to seek aid funds in an attempt to supply  
fishermen with needed coolers. Western Samoa Breweries Limited promised the supply  
up to 200 - 33 lb blocks of ice daily. In August 1981 US\$8000 was received from  
Agent for International Development; a United States aid agency with regional  
headquarters at Suva for the purchase of locally built coolers. It was at this time  
that many imported coolers began to come on to the scene and thus the local coolers,  
though having a greater carrying capacity, but greater weight, were rejected. The  
ported coolers were requested by the fishermen. To further compound the problems  
of this ordering switch, Treasury at Apia intentionally or unintentionally lost the  
aid cheque thereby causing an additional 20 months delay. In February 1983 A.I.D.  
applied a replacement cheque for the same amount but saw to it that the cheque  
could not be handled by Treasury. An order for 122 coolers from Coleman Company of  
ansas, U.S.A. is due to arrive late in May 1983. The coolers will be distributed  
to bonafide fishermen at a subsidised rate of approximately 50% of the original  
cost. Thus it is envisaged that with an unlimited supply of ice and with the fish-  
ing boats supplied with ice/fish coolers, that the quality of fish sold to consu-  
ers should be very high and the possibility of spoilage, very remote. Ice can be  
obtained from the Apia fish market 24 hours a day every day of the year. One of the  
apanese refrigeration units has been set up at the Apia fish market for the sto-  
rage of the block ice.

is now known now if the quantity of coolers will be sufficient to cater for the  
requent catches of 1000 lbs or more per boat of bottom fish and tuna but it  
promises to be an improvement over the past. In the past if a catch of that size  
occurred in an outlying district the fish would have to be disposed of at a loss  
if the quantity of transport boxes and transport to Apia were not available. It is  
that the fishermen with their new coolers can arrange proper transport with  
the local bus drivers.

November 1982, due to an oversupply of tuna in the new Japanese aid built fish  
market (opened in June 1982), 25 tons of tuna was shipped to Star Kist at Pago Pago,  
merican Samoa. The tuna was classified as being of such high quality it did not  
quire inspection.

ne only sizeable post-harvest loss occurred in 1978 before our new fish market  
with its back-up generators and its 50 tons capacity was on the drawing boards. At  
his time a half ton of tuna was written off due to spoilage caused by a local po-  
wer failure.

#### SUMMARY

in summary it should be noted that in the past 4½ years there have been no chronic  
post-harvest losses of fish in Western Samoa. The contributing factors were that  
at a village paopao subsistence - fishery level, fish were caught and consumed in  
accordance to local needs. On the somewhat larger scale of alia fishing the evolu-  
tion of projects like village cooling units, boat fish coolers and a centrally  
located national fish market have virtually reduced the possibility of post-har-  
vest losses to nothing.

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