GENERAL INFORMATION
ON VIETNAMESE RICE EXPORTS

The Rice Trade

Recent statistics show a total amount of rice traded globally was 23 million tonnes. The ratio of trade volume, against a total production (340 million tonnes of milled rice base) is approximately 6.5%, which is significantly less than other grains.

Rice production in Vietnam is about 34 million tonnes (paddy base1) where the main production areas are the Mekong Delta in the South and the Red River Delta in the North. The Mekong Delta produces more than half of the country’s total production and provides suitable climate conditions where in most cases; farmers can harvest rice more than 3 times a year.

Rice harvests are generally between February and March; July and August; November and December for short time rice; and January and February for long time rice.

Rice moisture

At harvest, paddy rice has moisture content of generally between 20 and 28 percent. Most of paddy varies with maturity, whether it is rainy or dry season, and atmospheric humidity. The moisture content of paddy can vary and is understandably higher in the wet season than in the dry season.

Paddy rice should be dried to a moisture content of less than 20 percent within 48 hours of harvest to reduce the chances of damage. To facilitate good storage, it is best that the paddy rice is dried in the sun or with modern drying techniques and/or machinery to a moisture content of 14 percent or less.

Rice kernels should have a moisture content of between 13 and 14 percent to ensure good storage. When the moisture level exceeds 14 percent, the rice takes on a yellowish hue that can lead to mold, lumping and decay and can result in damage affecting both the quality and quantity of the rice.

---

1 Paddy rice is rice that in its as-harvested state. Milled rice is rice after it is processed to remove the husk and to, sometimes, polish the kernel.
The damaged rice can affect undamaged rice in close proximity but not necessarily in direct contact particularly when bagged and awaiting shipment. Therefore, it is prudent to check for this type of damage prior to the cargo leaving the warehouse storage facility.

In order to do so, the carrier and their appointed surveyors require the full cooperation of shippers to identifying where the rice is being stored prior to shipment. However, Spica’s experience shows that shippers are not necessarily being cooperative to this end.

**Milling and processing**

Rice processing is the most essential stage of the post harvest activity where husks and bran particles are removed from the paddy grain. Milled rice maintains a higher temperature than that prior to processing. Generally, at this stage the moisture content is higher than 14 percent and particles of bran adhere to the surface of the kernel. Since the rice has generally been whitened, it soon takes on an ivory or yellow coloration.

**Preparing rice for export**

Prior to the 1990’s Vietnamese rice exports were considered low grade where on the order of 35 percent of exported rice had broken ends. Following significant improvements in production and processing technology, Vietnam can produce rice with between 5 and 10 percent broken ends.

There is a Vietnamese Rice Standard for Export that was established by the Standardization Meteorology and Quality Control (SMQC) Centre. Foreign buyers can request that the Vietnamese standard or request their own export specifications. The following steps are indicative of how local exporters prepare rice for export:

- Milled rice is purchased from local mill/merchant.
- The rice is processed and/or classified according to the grades and standards for expert. Cargo is separated into separate piles according to grade and quality.
- Adjust the rice quality, if necessary, to meet the specifications of the shipments by reprocessing (via whitening, sieving, polishing, drying, etc.) or, simply by mixing rice of different qualities from separate piles in ratios determined during packing at the warehouse.
- Bagged rice is transported from warehouses and remote locations in and around Ho Chi Minh City and throughout the Mekong Delta area. This point makes it difficult to monitor the rice accurately unless the surveyor is given several days notice of the shipment.

**Notable problems**

Most rice exporters, sellers and shippers allocate quantities of cargo for one-day shipment to several supplier warehouses in Ho Chi Minh City and/or Mekong Delta provinces. Since these suppliers do not necessarily export directly, each supplier is solely responsible for their cargo until loaded onto the ship. They then try to profit by supplying cargo just meeting the lower margin of the required specification and at times, slightly out of specification.
In addition, many suppliers buy rice from local farms, mills or merchants as needed due to lack of adequate finances to buy and process rice in advance of export. When cargoes are needed urgently for export, the rice cannot necessarily be processed in time resulting in compromises made with the cargo quality. This can result in compromising the cargo quality and, in particular, exceeding the necessary moisture content.

As mentioned earlier, the Vietnamese Government Standard for average moisture content is 14 percent. This can easily be complied with by mixing rice kernels of higher moisture content (e.g. 14.5 percent) with rice of low moisture content (e.g. 13 percent) at a ratio that makes the overall content meet the required government standard. However, the effects can be damaging during transport that leads to mould, discoloration and decay. It not only affects rice in close proximity, but other rice within the hold leading to moisture migration, smell, taint and heating of cargo. Damp rice kernels spoil undamaged rice in the immediate vicinity.

It is therefore important that, weather permitting, cargo and holds are adequately ventilated.

The problem of exceeding the moisture content is compounded during the country’s monsoon season between May and November. Moreover, to meet Vietnamese government specifications, many small suppliers and warehouses simply adjust the quality of rice by mixing it with rice from different quality, grade and moisture content during the packing operation. This method is acceptable for some contracts of quality such as meeting the percentage of broken kernels, red kernels, yellow kernels, paddy, etc. but is problematic when it neglects the moisture content of the rice.

While techniques in drying and processing rice have improved significantly over recent years, there are many loop holes in the system that allow poorer qualities of rice to be shipped with rice that meet quality standards.

**Loading rice**

Vessels customarily load rice cargoes at mooring buoys or anchorages in and around the port of Ho Chi Minh City. Bagged rice can be transported by truck from inland points or directly into wooden or steel barges and delivers the rice alongside the vessel. Cargo can be exposed to wetness damage during the barge leg of the voyage due to water ingress via the barge hull planking from older wooden barges or via the deck/hatch cover arrangements of both steel and wooden barges. This is a particular problem during inclement weather.

Cargo is loaded aboard using port stevedores who are not usually contracted by the owner but by the shipper and/or charterers. Experience has shown that little or no attention to detail or care is shown to loading the cargo since the stevedores are poorly paid for their work.

It is not uncommon to see stevedores urinating in or on cargo in underwings and secluded corners of the vessel. Experience shows that the stevedores care little for safe stowage and dunnaging and building of ventilation channels in the stow that provide adequate ventilation of cargo. Consequently, shipowners, charterers or receivers will arrange for separate stevedores to arrange and lay appropriate dunnage.

It is recommended that shipowners arrange for independent surveyors to ensure proper stowage, care of cargo during loading, and ensure proper tallies are conducted on the cargo. It is also recommended for ship’s staff to conduct initial, intermediate and final draft surveys to reduce the changes of a cargo shortage claims.
Dunnaging

Dunnage usually consists of bamboo sticks laid in a criss-cross fashion on the steel tank tops. These are overlaid with craft paper sheets and/or bamboo mats. This is similarly laid along the sides of the vessel's bulkheads and side shell. The problem with bamboo sticks are that they are not free from moisture and retain and bleed moisture into the cargo holds while the ship is in transit. Bamboo sticks may appear dry on the outside but may have a moist pulpy interior.

It is prudent to appoint surveyors to randomly sample bagged cargo and have the samples sent ashore for analysis. While hand held moisture readings are taken as part of any survey, the readings are only accurate to within 0.5 percent. So if a hand held reading indicates a sample to be 14 percent, it may actually be 14.5 percent and in excess of local government standards and likely contractual requirements.

The use of steel hooks to load bagged rice is generally prohibited. However, this practice is still used and unless challenged will go on unabated. The consequences of such actions can result in damage and loss of cargo through spillage that doesn’t become evident until cargo is discharged.

2004 Global Rice Production (millions of tons)
2004 Global Rice Exports (millions of tones)


A typical vessel loading rice at her buoy berth.
A typical sling of bagged rice being shipped on board.

Stowage arrangements on board.
Note the use of polystyrene board and plastic sheeting.
The polystyrene board and plastic sheet offers insulation between changes in the ship's shell temperature during sea transit.

A ventilation channel is suitably constructed in each cargo hold. The number of channels both longitudinally and athwart ships depends on the size and construction of the cargo holds.
Note ventilation channels running length and breadth of this cargo hold.

Polystyrene board arranged by charterers/shippers.
Kraft paper rolls.

Though the use of bamboo sticks/matting and kraft paper are seen as the customary dunnaging materials used in loading bagged rice. We have been involved in one or two vessels where charterers now insist on a combination of Sheeted Styrofoam, Polythene Sheets and kraft paper.

While there is no scientific evidence available it would appear this type of dunnage better protects the cargo from variations in temperatures, insulating the cargo from ships sweat. One still needs to ventilate!!

The digital imagery above show the new dunnage materials being used.

Richard Skene
Spica Services in HCMC