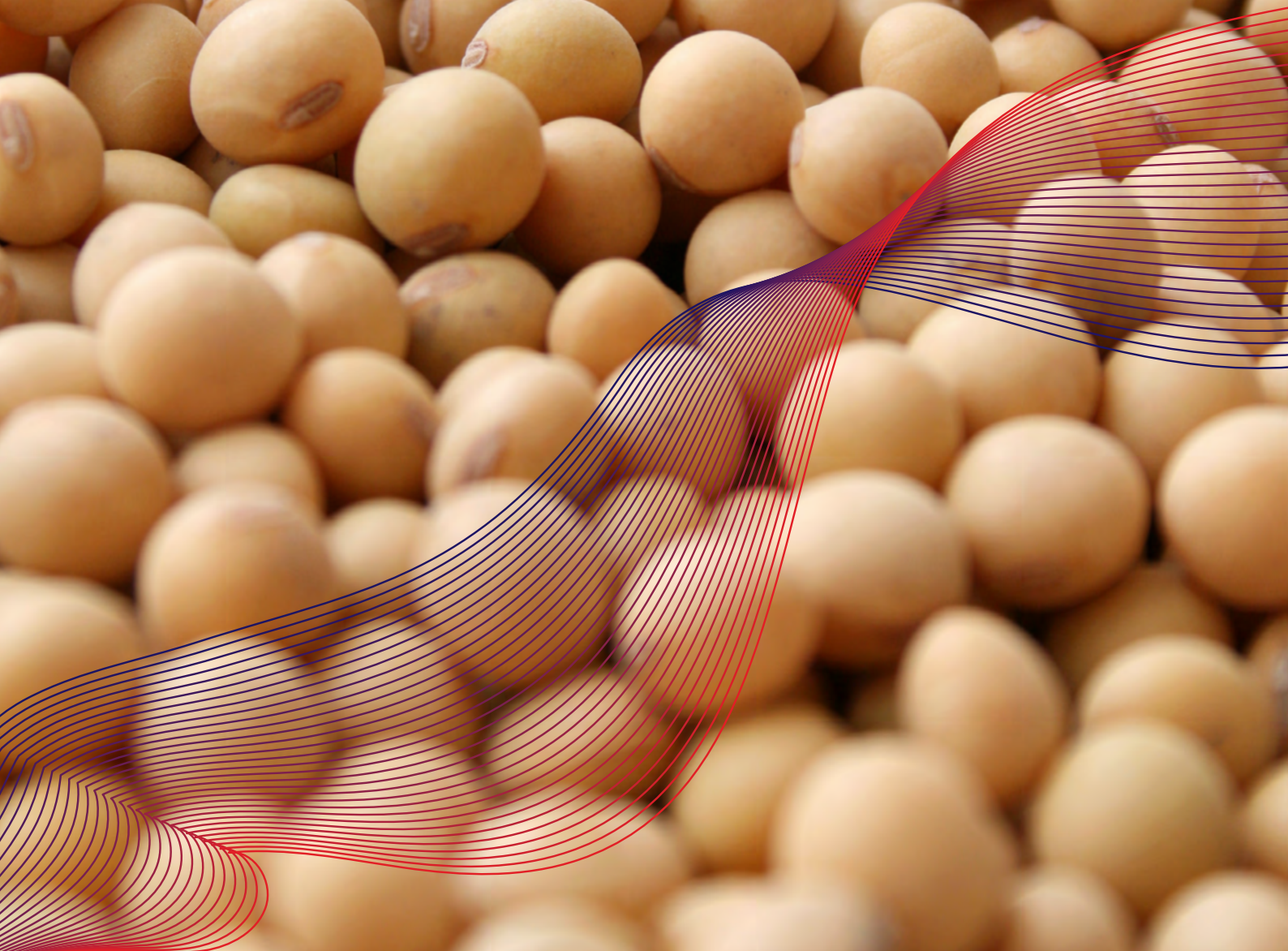


June 2021

MS  *Amlin*

Soya beans: a 'hot' commodity



One of the most economically significant plants, soya beans, are cultivated and harvested on a large scale, especially in the Americas. The export to China, the biggest importer of soya beans, increased in 2021 compared to 2020. Due to their high value and the large quantities of export, this seemingly harmless cargo is responsible for multimillion-dollar claims.

With this circular, MS Amlin would like to promote further awareness of the risks associated with the loading, carriage and discharge of soya beans, as well as provide some loss prevention recommendations.

What is soy?

Soy, also known as soya beans, is a species of legume native to East Asia. The plant can reach more than two meters and has one to four seeds per pod.



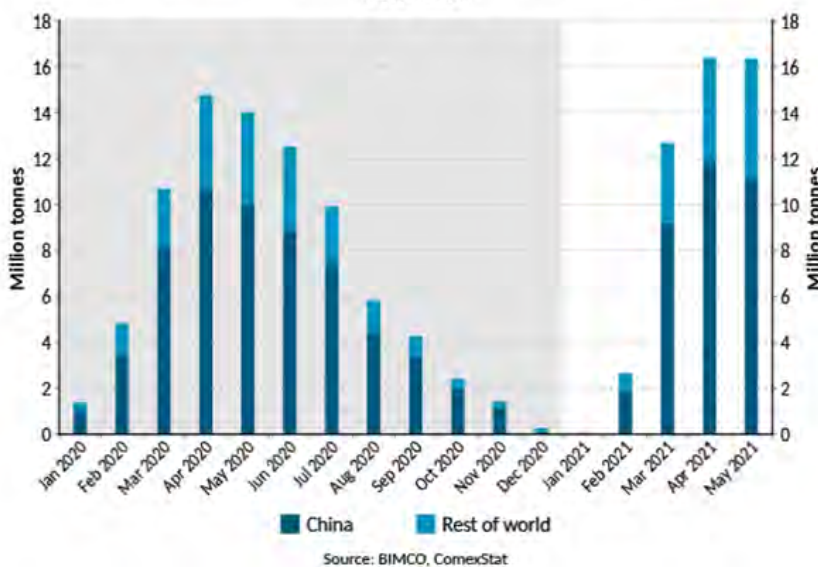
Soy plant



Soya bean products

Soya beans are one of the richest and cheapest sources of protein and is consumed by both humans and animals. Soy is therefore one of the world's most economically significant plants and is cultivated and harvested on a grand scale. Since the early 1990s, the demand for soya beans has increased significantly, especially in China. The main producers of soy are Brazil, the United States, Argentina, China and India.

Brazilian seaborne soya bean exports
2020-2021



What are the risks?

Soya beans generally have a long shelf life provided they remain below 25°C and contain no more than 11.5% moisture. The usual 40-day voyage between Brazil and China should not be a problem, as long as the temperature and moisture contents are within the set parameters. However, if beans are loaded at 25–35°C and their moisture content is above 11.5% the cargo becomes unstable, which can cause self-heating of the cargo and result in a fire.

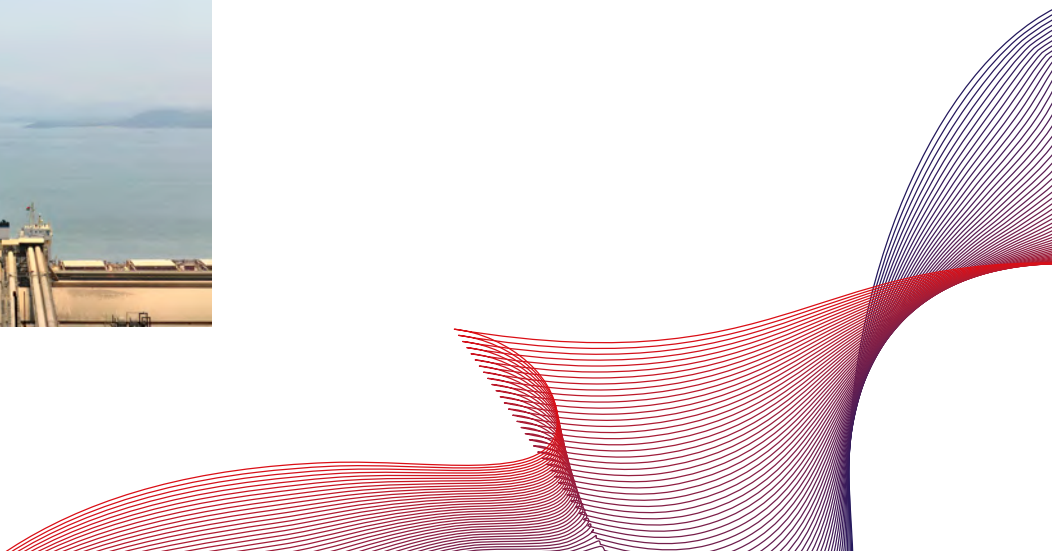
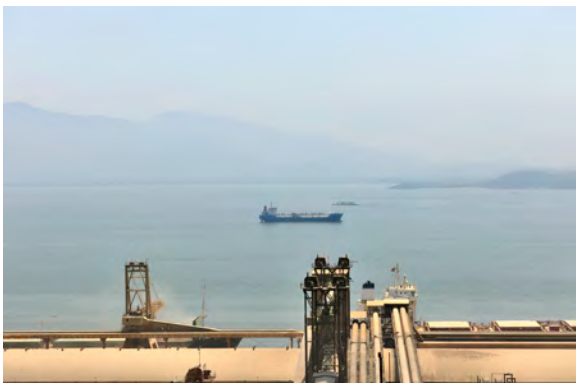
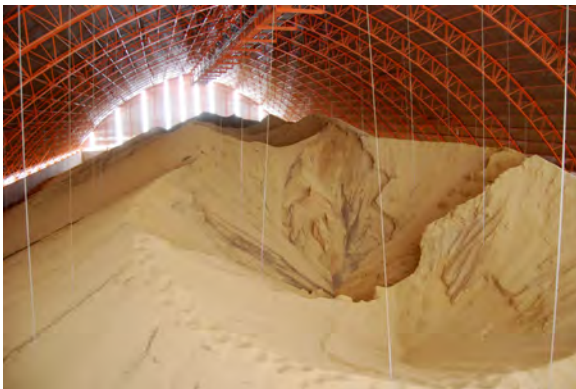
Oxygen is subtracted in the process of self-heating, leading to the risk of asphyxiation of persons entering the hold or adjacent areas. If the self-heating progresses, a cargo fire can occur, putting the ship and its crew in danger. It is therefore of utmost importance to be aware of and note the conditions of the cargo prior to loading, as well as the conditions of the hold.

In addition to the risk of self-heating, soya beans are susceptible to mould and rotting. The warm air from the cargo will rise and come in contact with the cool steelwork of the hold and hatch covers. As a result, condensation will form and drip onto the cargo. This typically occurs when the vessel sails from a warm to a cooler climate.

Case study

Soya beans were harvested in the “Mato Grosso” region in Brazil and transported by trucks and barges to the seaport. Due to heavy rainfall, overly moist beans went into storage. The contract of sale stated a moisture limit of 14%. Despite this being higher than the advised 11.5%, the cargo surveyor stated that the cargo was “within the limits” and the cargo was loaded.

Upon arrival in China the vessel had to wait for another 30 days to anchor due to mandatory COVID-19 restrictions. The additional waiting period caused the cargo to self-heat, resulting in a fire. Fortunately the crew was able to extinguish the fire before it spread, but the cargo in the hold was completely deteriorated. The cargo was rejected by the Chinese receivers as it was not suitable for consumption, and the receivers filed a multimillion-dollar claim for their damages.



Contractual clauses

Under the applicable international liability regimes, there is an obligation to inspect the cargo's order and condition at loading in order to enable the Master to ensure that the bill of lading is accurate. Furthermore, the Master and his crew are obliged to properly care for the cargo loaded.

Under Article IV rule 2 (m) of the Hague-Visby Rules, the carrier is protected and not responsible for damage or loss when same has resulted from an inherent vice or defect of the goods. However, parties should not rely too heavily on this statutory protection as it will require strong evidence to prove that the damage resulted precisely for that reason and, furthermore, some jurisdictions do not accept the defence of inherent vice.

As there is "freedom of contract", parties can allocate responsibilities and liabilities as they wish. In this context, legal loss prevention can be very effective to avoid cargo claims. Such measures include carefully drafting contracts with a clear allocation of liability. We advise parties to check their contracts for clauses which concern the areas listed below:

➤ **Moisture content**

Most contracts of sale and charter parties have clauses stating the allowed moisture content of the cargo. This limit should be **below** 11.5% to prevent the cargo from becoming unstable.

➤ **ICA**

MS Amlin recommends the incorporation of the ICA (Inter Club Agreement) in charter parties, as the ICA serves as a useful mechanism in apportioning the responsibility for cargo claims in certain circumstances. For more information about the ICA, see our [circular](#).

Please note that cargo damages caused by the prolonged stay of the ship at a port or anchorage ordered by the charterers will be treated as a cargo claim under clause 8(d) of the ICA, and will therefore not be apportioned 50/50 between owners and charterers but 100% for the charterers (Yangtze Xing Hua case¹).

➤ **Shortages**

Soya beans are often loaded by a conveyor belt whereby the cargo weight is established by using the shore scale. However if the weight in the discharge port is determined by a draft survey, a paper shortage can occur. Therefore, ideally, the same weighing method should be used at both the loading and discharging stages. If this is not possible, a joint hatch sealing survey at both ports may be useful. The preferred method of weighing the cargo should be stated in the charter parties.

➤ **Ventilation**

Ventilation of the holds is essential in order to avoid "sweating" of the cargo and the creation of mould. Records of the temperature and humidity levels should be kept and the holds should be ventilated as per standard maritime practice. If it is not feasible due to bad weather circumstances or for any other reason, this must be indicated in the logs.

Specific ventilation instructions from the charterers can be stated in the charter party and therefore parties should check whether they can comply with those, and if not, what the consequences are.

➤ **Cleaning of holds**

Since soya beans are used as foodstuff, clean cargo holds are essential. Often charter parties have standard clauses in place which state that the vessel needs to be delivered with clean holds, but this can be further specified. For example by adding rider clauses specifically stating the fumigation requirements, such as the [BIMCO Cargo Fumigation Clause for Charter Parties 2015](#).

Fumigation can, however, cause problems as the master is not able to ventilate the cargo during the voyage. As a result, the cargo can arrive damaged, although the master followed the orders. Court cases, especially in China, have shown that the owners could then still be held liable for cargo damages if there are no clauses in the charter party which regulate ventilation. Specifically worded clauses should therefore be inserted in the charter party, stating that cargo damage due to the lack of ventilation will not be the shipowner's responsibility.

Contact our [Client Services Desk](#) for specific examples.

¹ Transgrain Shipping (Singapore) Pte Limited -v- Yangtze Navigation (Hong Kong) Co. Limited [2017] EWCA Civ 2107 (MV "YANGTZE XING HUA")

Recommendations

To minimise the risks of transporting soya beans, we recommend the following measures:

Prior Loading:

- ✓ As with any other grain cargo, soya beans should be kept dry at all times.
- ✓ Holds, including bilges, should be clean, dry and preferably sealed.
- ✓ Weather tightness of the hatches should be confirmed by means of an ultrasonic test.
- ✓ The age, quantity, temperature and humidity of the soya beans should be confirmed by an independent cargo surveyor. These should be within the set parameters.
- ✓ If the moisture content is too high, or if the cargo is obviously caked or mouldy, it should be refused for loading and a letter of protest should be issued.
- ✓ The proper functioning of the ventilation of the holds should be checked.

During loading:

- ✓ The cargo should not be loaded near sources of heat and particularly not near heated tanks.
- ✓ During loading, records should be kept of the humidity levels and temperatures of every batch of cargo that is loaded, and this should include taking photographs.
- ✓ When cargo appears damaged or does not meet the specifications, this should be recorded and a protest should be issued accordingly.
- ✓ Loading should be **stopped** and the hatches should be closed before rainfall. The cargo should be kept dry at all times.

During transit:

- ✓ A daily record of the cargo temperature and humidity levels should be kept.
- ✓ The holds should be ventilated to avoid sweating and this should be recorded. If ventilation is not feasible due to bad weather conditions or for any other reason, this must be indicated in the logs. Be aware that ventilation will not reduce the temperature of the cargo nor the risk of self-heating - it only prevents the growth of mould.
- ✓ Ensure safe entry of the hold by measuring the contents of the atmosphere. Additional recommendations for entering enclosed spaces can be found [here](#).

During discharge:

- ✓ If damages have occurred, detailed photographs of each hold should be taken, containing a time stamp.
- ✓ Representative samples should be taken by an independent surveyor throughout the discharge operations. These samples should be carefully analysed in order to confirm whether the cargo quality has been compromised.
- ✓ Cargo should not be discharged during rain.

We furthermore recommend using clear clauses outlining the allocation of responsibilities in respect of the risk of shortage and cargo damages.

This circular is meant for guidance purposes only. Should you require more information or assistance, please feel free to contact our Client Services Desk:
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