

The food safety (contamination) risks for paddy can be divided into three groups:-

- Physical - pieces of glass, metal, plastic, stones, animal matter; soil, foreign grain or weed seeds
- Chemical - residues of agricultural pesticides, baits or fumigants
- Biological - toxins from mouldy grain

If any of these materials are found in packaged rice, it can be very costly to the industry in both monetary terms and reduced market access. It takes time to build a reputation for a quality food product, but it can be quickly destroyed with one widely publicised contamination incident. Producing quality rice on your farm is the first step in the supply chain to the consumer. All parts of the supply chain must be equally careful to avoid foreign matter contamination. Storage, drying, processing and distribution stages also have procedures to eliminate these materials. Most on-farm food safety risks occur during harvest, but a responsible attitude around the farm all year can reduce some risks.

You need to know what the major concerns are so you can assess and minimise the risks on your own farm.

1. Glass contamination can occur from a number of sources.

- Any kitchen waste with glass should be quickly buried in a place reserved for such material.
- All glass and plastic containers used in the workshop or in the servicing of equipment should be handled with care and kept in a safe place.
- Glass lens covers on vehicle and machinery lights should be inspected regularly and replaced if cracked. Covering lenses with plastic film can prevent glass loss in the event of a breakage.
- Overhead lights in sheds can break on impact with headers or augers. Beware of such lights.
- Food or drink in disposable glass containers should not be consumed in the farm area where crops are grown and machinery is operated. Convey this policy to duck shooters.
- SunRice storage, handling and processing sites are zoned “glass free” and farm areas (as distinct from the household) could follow the example.
- Farms adjoining main roads are at risk of travellers throwing bottles into canals and drains. These bottles can float and may enter a rice paddock on your farm or further down the irrigation system. Collect and dispose of any bottles found in such areas.

2. Metal objects can contaminate paddy and their presence must be avoided.

- Ferrous metals can be removed during processing by strategically placed magnets but heavy contamination levels can overload the system. Non-ferrous metal is more difficult to detect and remove.

- Preventative maintenance, regular servicing of harvest machinery and being careful with small tools and parts will minimise paddy contamination by metal.

3. Gravel & stones are serious contaminants.

- Roads (especially shoulders) allow loose stones and gravel to lodge in tyre treads. Tyres with a block or bar tread pattern will collect less gravel.
- Installation of corrugated approaches to intake pits can dislodge stones by flexing tyre walls.
- Gravel in paddy can also occur from trucks previously used for hauling road materials. This gravel contamination (as distinct from the road source) is easily avoided by cleaning truck bins.

4. Foreign grain, weed seeds and fertiliser contamination of paddy is all too common.

- Foreign grain results from residues left in headers, trucks, field bins and augers. Trucks, bins and augers are fairly easy to clean. Headers are more difficult, but every effort must be made to clean the machine prior to harvest. Remove any covers from elevators or cross augers; remove the sieves and use an air compressor to dislodge grain / trash from the less accessible places. Run the machine for a short time and then repeat the process with a high-pressure water cleaner or a fire fighter pump. Again, run the header for a short time before refitting the covers and sieves. A header clean-out after harvest of another grain like maize, soybean or wheat can take about an hour to do satisfactorily. Cleaning equipment between different rice varieties is also needed.
- Thorough cleaning of truck bins is essential and contractor trucks must be checked at the commencement of each day. A suitable broom should be kept on hand, preferably in the cab, to sweep the truck bin. The **delivery chit requires the truck driver sign** that “the bin was clean before loading with paddy”.
- Weed seeds come from plants on the banks and field edges. Practice good crop hygiene and spray or chip any weeds from such areas.
- Fertiliser contamination occurs through improperly cleaned handling equipment such as field bins, silos, augers and more particularly trucks. Contractor trucks alternating between rice and fertiliser haulage pose a special risk. Urea is highly toxic to humans and the granule size, shape and colour is similar to rice.
- Levels of flutriafol have been detected on grain carried in trucks that had previously carted fungicide treated fertiliser. Maximum Residue Limit (MRL) have arisen when marketing this grain. Sweeping is not sufficient to minimise the possibility of such violations occurring. A thorough washing of the vehicle and equipment used to handle the fertiliser treated with fungicide is required and will more effectively reduce the levels of residue fungicide, therefore minimising the risk of cross contamination of grain.