Good on-farm food safety practices to reduce contamination and cross-contamination

Guidance Document

SPRING 2025

SSAFE

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Foreword & Acknowledgements

The number of food safety issues occurring in agricultural production at the farm level is on the rise. These issues include such problems as cross-contamination (allergens and other contaminants) due to bad growing and harvesting practices, undeclared ingredients, illegal dyes, incorrect pesticide use, improper use of chemicals, and others. Many food businesses already have programs to train farmers. However, in certain parts of the world there is still a lack of oversight, good quality guidance and/or enforcement to verify that farmers are following and/or complying with the information set out in the training programs. Furthermore, the scope of many of the programs is quite narrow. For example, backward integration programs ('IPM programs') are common for chilis in India, but not available for paprika in China. Finally, there is a lack of consistency, transparency and, in certain cases, scientific rigor in such programs.

Therefore, SSAFE, in collaboration with All Food Consulting, has developed a practical guide to provide farmers around the world with 47 useful and effective measures, based on scientific global best practices, to help reduce or eliminate on-farm (cross)contamination. This guidance, which has been successfully piloted in India, China and Turkey with a range of herb and spice farmers, should help significantly reduce the contamination and cross-contamination of agricultural products that could lead to a food safety issue. In addition, the guidance is accompanied by clear set of simple pictorial instructions that clearly depict what should and should not be done in each case, helping to provide farmers with easy and succinct instructions in regions where literacy is a challenge.

SSAFE would like to thank the author Marc Cwikowski, all SSAFE members and our external partners that participated in the development of this Framework.

Scope

This Guidance Framework aims to help farmers prevent or eliminate food safety issues arising from chemical contamination and cross contamination of agricultural products at the farm level.

Whilst the primary focus when developing the framework was on chemical contamination and cross-contamination in the production of herbs and spices, most of the measures are applicable to the production of any non-animal derived farming products.

This guidance is applicable to all farmers everywhere. However, it should be of particularly use and benefit to small-hold farmers in low- and middle-income countries.

It is encouraged that large multinational food businesses, buyers and traders of raw agricultural products, trade associations representing farmers, global intergovernmental institutions, and regional and local authorities share this guidance material with their suppliers and farming communities.

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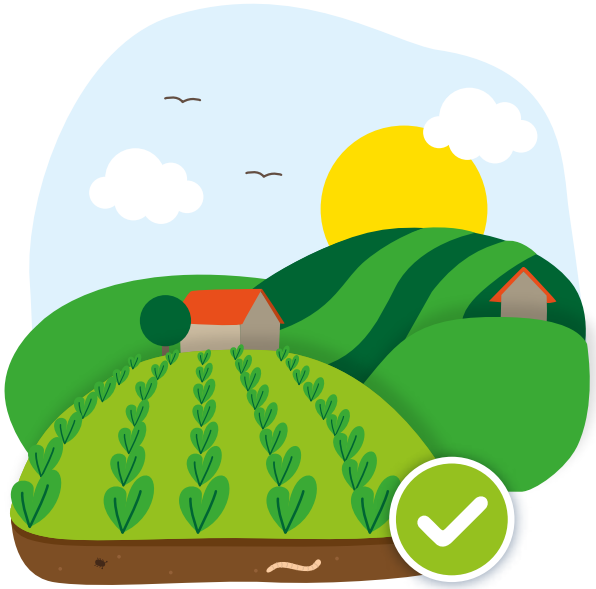
General Measures

Locate farming activities away from potential sources of pollution

What?



What not?

Why

If farming activities are located near a contamination source, the contamination can be spread (via wind, animals, water, etc.) and thus contaminate your field. If your parcel is contaminated, it can affect your product.

How

- Move farming away from areas that pollute the environment and neighboring activities (e.g. a factory or spray drift from pesticides applications) that pose a serious risk of contaminating the product.
- If you find significant risks, don't use the site to grow product until you've taken steps to manage the risks.
- If you need to take action to deal with a risk, set up a monitoring program to make sure the product isn't contaminated and keep track of the monitoring.
- Make regular updates on the risk of contamination. Ideally, make and update a map that shows the farm's sites, buildings, and farm's surroundings.

Ensure there is no contamination risk coming from previous activities

What?

What not?

Why

The previous activities on the site can lead to soil contamination. If the soil is contaminated, it can contaminate your product.

How

- Assess the history of the site to find out if there is a chance that chemical hazards used in the past on the site or on neighboring sites could contaminate the crops grown there (e.g. heavy industry, waste management, military ground, etc.), write down the risks.
- If a cultivation site has a history of contamination, test the soil in accredited labs to find out if there are any remaining contaminants and what, if any, steps may need to be taken to fix the problem (e.g. heavy metals, etc.).

Work in a field free of trash

What?

What not?

Why

Trash can be a source of contamination due to their composition (e.g. plastic) or their previous use (e.g. if a container was used to store chemicals).

How

- Ensure no trash, paper, plastic, or empty containers are on the field. Assess that the neighborhood is not a potential source of these (e.g. fly-tipping, municipal landfills).

Control the weeds that are present in the field

What?

What not?

Why

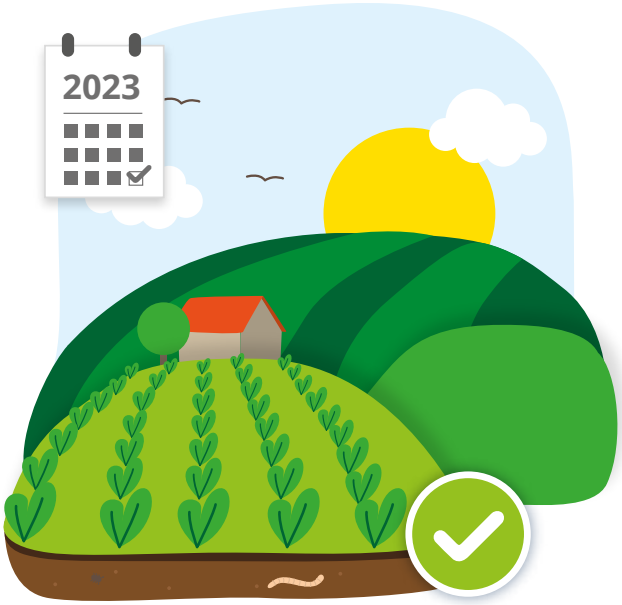
Weeds growing around or on the field can contaminate the harvest because they can contain Pyrrolizidine Alkaloids (PAs) or potentially cause allergies.

How

- Find the main PA and allergen-containing weed species in your area and train your employees to spot them and remove them manually (or mechanically, if necessary). Weed plants need to be pulled up by their roots and taken out of the field to reduce the chance they will grow back.
- This could be required more than once as the plant grows. The less selective the harvesting method, the riskier it gets.

Review the situation at least annually or when something has changed either on the farm or in an area near to the farm that can influence the risk

What?



What not?

Why

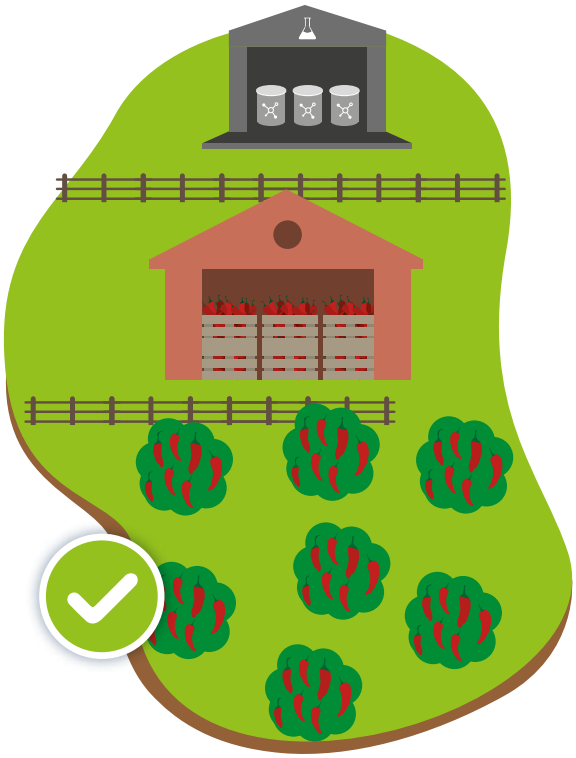
The situation can change, which can lead to new sources of contamination (e.g. a new plant is being built near your farm, the farm next door is growing an allergenic crop, etc.).

How

- At least once a year, or when something has changed on the farm or in an area near the farm that could change the risk, do a risk assessment to see how safe the soil is. This includes top dressings, culture soil, and substrates for hydroponics.

Ensure that nothing you do on your farm has an adverse effect on the product

What?



What not?

Why

Your farm's various activities can also be a source of contamination. That is why it is critical to identify the areas where hazardous activities occur. On a farm, there are numerous hazardous activities such as pesticide mixture preparation, sprayer cleaning, chemical waste storage, etc.

How

- Create and keep an up-to-date map of the property that shows potential sources of food contamination (e.g. chemical storage areas and water inlets). Cleaning products, pesticides, rodenticides, lubricants, fuels, and other chemicals shall be considered.

Ensure your premises don't contaminate your product

What?

What not?

Why

If your buildings are made of toxic materials (e.g. paint containing heavy metals), they can contaminate your product because some of these elements could come into contact with your product equipment, etc. Also, if the installation is hard to clean and there are chemical spills, you won't be able to clean your building well, so the chemical risk will stay where the spills happened.

How

- Use non-toxic, easy-to-clean materials to build and fix up buildings.
- Design and build farm buildings to stay clean and prevent cross-contamination.

Prevent water used on the farm from contaminating your premises and product

What?

What not?

Why

Contamination can occur when contaminated water, like water used to clean spraying equipment or runoff from manure, comes into contact with clean water or your product.

How

- Build sewage, waste disposal, and drainage systems to reduce the chance of contaminating the premises and water supply.

Train your workers on how to use agrochemicals

What?

What not?

Why

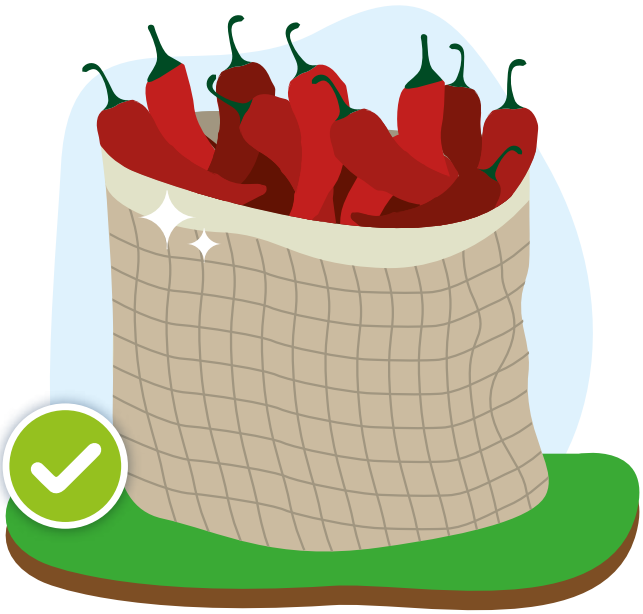
Your employees will be unable to manage agrochemicals correctly if they have not been properly trained. It may result in poor utilization (e.g. inappropriate storage, overdose, prohibited substance for a crop, etc.).

How

- Train all workers on chemical management, especially for agrochemicals/fertilizer. Do not allow untrained operators to handle, prepare or apply agrochemicals.

Use clean containers, never previously used to store chemicals

What?



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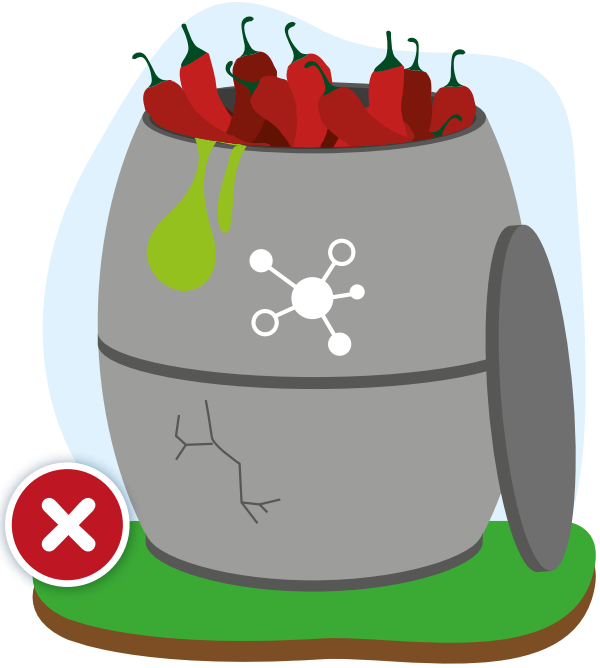


Why

If the container used to store the product is dirty or was used to store chemicals, this container can be a source of contamination. If your product comes into contact with this container, it will be contaminated.

How

- Clean and maintain the containers used for production and harvesting.
- Make sure they are suitable for use.
- Do use harvest containers exclusively for product.
- Do not use them to store chemicals.
- Ensure your containers weren't used to store potential allergenic crops before unless they have been adequately cleaned.

Use spraying equipment in clean and well-maintained condition and use it as intended

What?

What not?

Why

To ensure that your spraying equipment sprays the correct amounts of chemicals, it is critical to keep it in excellent condition. It is also critical to use it as intended. If you don't, you won't be able to ensure that the chemicals are sprayed correctly, putting you at risk of overdose, misuse, and other problems.

How

- Install and use equipment according to the instructions given by the manufacturer or, if those aren't available, technical standards.
- Keep the equipment you use to apply chemicals in good shape and check it at least once a year to make sure they are applied correctly.
- Make sure your equipment dispenses the right amount and concentration.
- If you share it with other farmers, ensure the spraying equipment is cleaned before use.

Store equipment used with chemicals away from product

What?

What not?

Why

Even if you wash your pesticide-spraying equipment, there is a chance that pesticides will remain on it. If this is the case, it is a contamination source, and everything in contact with this equipment can become contaminated. Therefore, if your product is stored near or touches the equipment, it may become contaminated.

How

- Store equipment (like a plant protection product sprayer) in a way that prevents the product from becoming contaminated.
- Ensure segregation between harvested product and any equipment in contact with chemicals (e.g. cleaning tools).
- Prevent food contamination by maintaining this equipment in good condition.

Dispose of any wastewater in the right way

What?

What not?

Why

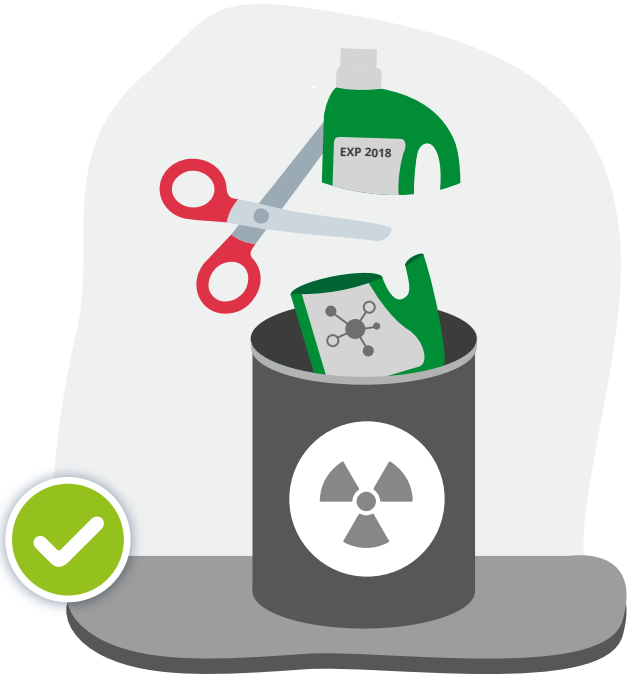
Wastewater can contain chemicals (e.g. pesticides, fertilizers, cleaning agents, etc.). If you dispose of this water incorrectly, it can contaminate your product water, equipment, etc.

How

- Get rid of the wastewater (e.g. from cleaning equipment used for plant protection products, etc.) to avoid any direct or indirect contact with the product or any other surface that can come into contact with them.

When chemicals are expired or when the container is empty, destroy the container appropriately to ensure neither can be re-used

What?



What not?

Why

Chemicals past their expiration date have an uncertain efficacy and a potentially hazardous impact. Some chemicals can also be unsuitable for use due to other factors such as regulatory changes, highlighted quality issues, etc.

How

- Separate hazardous and non-hazardous farm wastes and dispose of them using proper methods.
- Isolate and label as waste chemicals and similar products of concern to food safety (e.g. veterinary drugs, plant protection products) that cannot be used (e.g. due to expiration date, regulatory change, etc.), as well as empty containers from which these substances have been removed.

Measures at the farming steps

Purchase starter products from registered suppliers, and identify and track what you buy

What?

What not?

Why

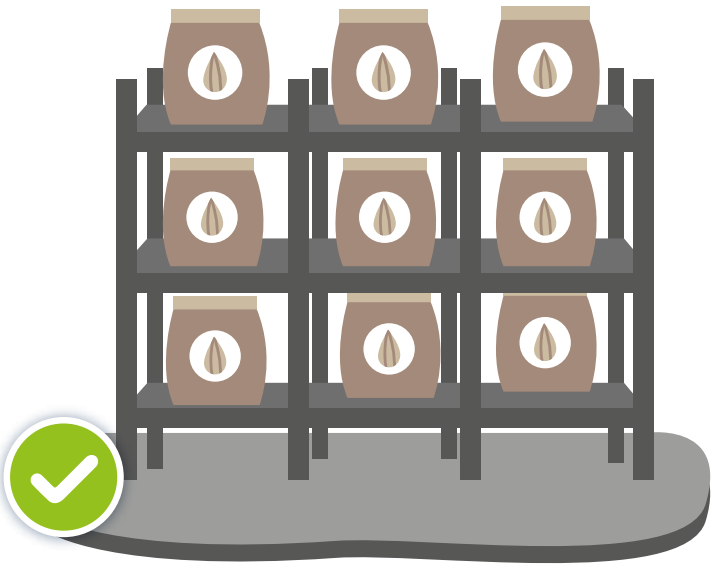
Registered suppliers are trustworthy. If such a supplier of planting materials has a problem with contamination, you need to be able to tell which lot comes from that supplier so you don't use it.

How

- Only buy propagating material from registered suppliers.
- Write down all useful information. (e.g. product name, your direct supplier's name, batch number, date of purchase, expiry date, etc.).

Keep seeds free of any chemical contamination

What?



What not?

Why

If the seeds are contaminated on the farm before sowing (e.g. by unauthorized pesticides), chemicals can potentially be present later in the harvested product (fruits, leaves, roots, etc.).

How

- To avoid chemical contamination, it's important to properly prepare, store, and receive starter products.
- Keep them separate from farm chemicals and harvested goods.

Grow only crops that are fit for consumption

What?

What not?

Why

Some plants may contain harmful substances to humans. That's why it is essential to select seeds free of them.

How

- Do not grow plants that are known to be harmful to people and/or unauthorized.

Identify and store your fertilizers in a safe way

What?

What not?

Why

There is a high risk of error or misuse if the fertilizers are not identified. You need to separate fertilizers from the pesticides. If pesticides contaminate your fertilizers, you will apply pesticides at the same time as the fertilizers, and you will be unable to determine which type and quantity of pesticides were used on your crop.

How

- Identify the fertilizers, ensure that farm chemicals are kept in the containers in which they are supplied, no unmarked/unlabelled chemicals on farm, keep them safe, and store pesticides separately and prevent accidental use (limit access, store in a locked cabinet, keep a usage log, run inventory check and reconciliation)!

Make sure fertilizers don't contaminate your harvested product

What?

What not?

Why

Fertilizers can contain harmful substances such as heavy metals. If you store fertilizers with your harvested product there is a high risk of contamination, and your product will become unfit for consumption.

How

- Store fertilizers separately from crops that have been harvested.

Use fertilizers as per label instructions, avoid contamination and use fertilizers the right way

What?

What not?

Why

Fertilizers can contain harmful substances, and if they are not used properly, they can cause overdose. It can be dangerous for your health, your soil, and the health of the final consumer.

How

- Purchase only registered products in their original packaging from registered suppliers.
- Follow the directions on the label or in the technical specifications for how to apply fertilizers and soil additives at the right stages of crop growth.
- Base the application on the results of a soil analysis or the advice of the National soil service center, technically qualified staff, institutions, or authorities, or on your own experience.
- Keep a record of how fertilization was conducted, including the fertilizer used, why it was used, how much was used, how it was applied, when it was done, and who did it.

Use the right water quality for your different activities

What?

What not?

Why

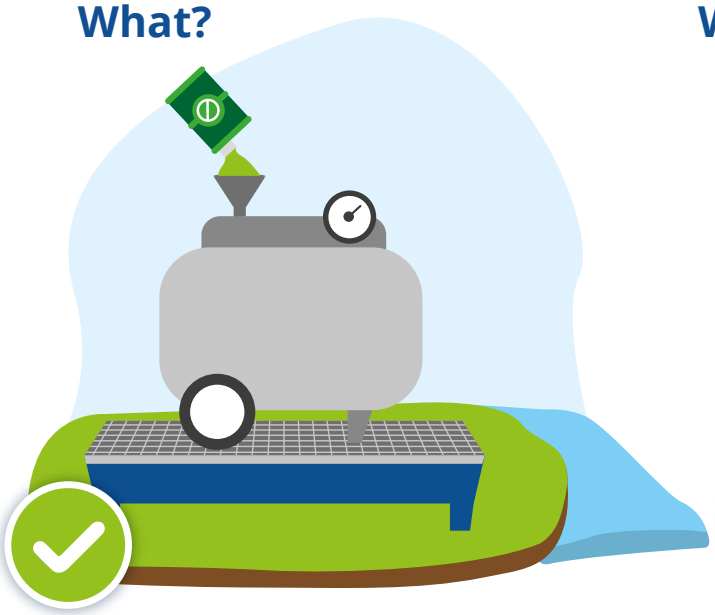
Quality of water may vary and present different potential contamination levels. As a result, you cannot use any type of water for all activities on your farm. If low-quality water enters in contact with your product contamination can occur.

How

- Find out what kind of water is used in the growing process (municipal water supplies, agricultural water, well water, river water, water from a reservoir, rainwater, sewage, etc.), where it comes from, and where it is stored.
- Use different conduction systems for each type of water, and don't connect them to each other.
- Use drinkable water when in direct contact with the suitable for consumption part of your product.

Do not contaminate water with agrochemicals

What?



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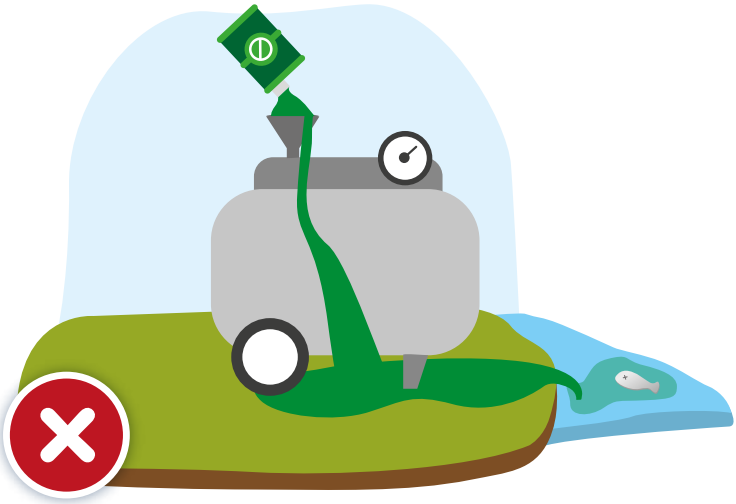


Why

If you prepare agrochemicals near water sources, you can contaminate them, and the water will no longer be suitable for consumption or use in agricultural activities.

How

- Don't apply chemicals or make agricultural preparations near water sources.
- When preparing chemicals near a water source, do it in a well-bunded area where no chemical product can enter the water.

Prevent contaminated water from entering your field

What?

What not?

Why

When water is contaminated it carries hazardous substances. If these substances enter your field with water, they will be transferred to the soil, where they will be absorbed by the roots and become present in the crops. Once this occurs, the product will no longer be suitable for human or animal consumption.

How

- Put a countermeasure in place to stop contaminated water from getting into the site and affecting the soil or crops.

Use only plant protection products that are authorized on the intended market

What?

What not?

Why

Pesticides may be approved for one crop but not another, or their application may differ. There are also differences between countries. Some pesticides are authorized in some countries and prohibited in other ones. Understand the final destination of your product to avoid using prohibited pesticides.

How

- When you use synthetic chemicals to protect plants, only use chemicals that are allowed for that crop.
- Find out (e.g. from authorities, customers, experts) if this permission also applies to any country where the crop is expected to be exported. The same if you treat seeds.
- Only buy these allowed plant protection products in their original packaging from registered/ licensed suppliers.
- In the past illegal dyes have been used to color pesticides which lead to spices contamination. Avoid colored pesticides if possible.
- Keep a record of the name of the supplier, the date and amount of chemicals bought, the date they were made and when they expire.

Identify and store chemicals in a safe place

What?

What not?

Why

Pesticides can be a source of contamination (e.g. wind spraying, leaks, etc.), so it's critical to avoid the risk of contamination of your product, equipment, and so on. It is also very important to identify your chemicals and to keep the information written on the label. If you don't, you risk overdosing, using a prohibited pesticide on a specific crop, not respecting the pre-harvest period, and so on.

How

- Store chemicals in a building that is well-lit, safe, and sound.
- Put it in a place and build it in a way that minimizes the risk of contaminating food and put signs and emergency equipment in this building in case chemicals spill.
- Use a special building near the field or a sealed box away from the house for small amounts. The area where the chemicals are stored is locked to restrict access in order to prevent misuse or malicious use.
- Store chemicals in their original containers with labels that can be read.
- If you put chemicals in a different container, write the name of the chemicals, the amount to use, and how long they should be kept for on the new container.
- When storing chemicals, don't put liquids on shelves above powders.
- Store liquids in a retention container.
- Keep a record of the chemicals you have in storage, including the name of the chemical, the date and amount it was bought, and the date it was used up or thrown away. These rules apply to every chemical used on a farm, even if it's not an agrochemical (detergent, rodenticides, etc.).

Store chemicals away from other products

What?

What not?

Why

Storing chemicals away from other products minimizes the risk of cross-contamination of seeds, forage, harvested product and fertilizers.

Cross-contamination is the way by which undesired chemicals find their way to contaminate the final product. If the contamination occurs directly on the final product the consumer will be even exposed to a higher dose of pesticides which can have a significant impact on their health.

How

- Separate and isolate the chemicals (agrochemicals, detergent, oils, lubricants, and fuels etc.) from the seeds, forage, harvested product, and fertilizers.
- Prevent unintentional/accidental use (e.g. restricted access).

Do not mix pesticides

What?

What not?

Why

Pesticides should not be mixed (unless specifically instructed to do so by the manufacturer) because a chemical reaction can occur in your tank, resulting in a loss of efficacy for your pesticides, but more importantly, the result of the reaction can be highly toxic to human or animal health, and your product will no longer be safe for consumption.

How

- Don’t mix two or more chemicals unless told to do so by the manufacturer, institutions, or authorities.

Use pesticides as per the manufacturer's instructions written on the label

What?

What not?

Why

There is a high risk of misuse if you do not follow the manufacturer's instructions. Pesticide misuse can be hazardous to the health of consumers. Misuse can result in overdose and failing to observe the pre-harvest period can result in exceeding the Maximum Residues Limit. Your product will no longer be suitable for consumption and therefore will be rejected by your buyer, among other things.

How

- Read the instructions on the label and follow them, use the amount recommended by manufacturers, and don't use too much of the chemical.
- Respect the expiration date.
- Respect the recommended waiting time between each application.
- Respect the recommended waiting times between application and harvest.
- Observe the manufacturer's instructions for weather conditions dosage (respect the dilution).
- Keep a record of how each crop was treated, including the chemical used, why it was used, where it was treated, how much was used, how it was applied, when it was done, and who did it.

Avoid harvesting weeds together with product

What?

What not?

Why

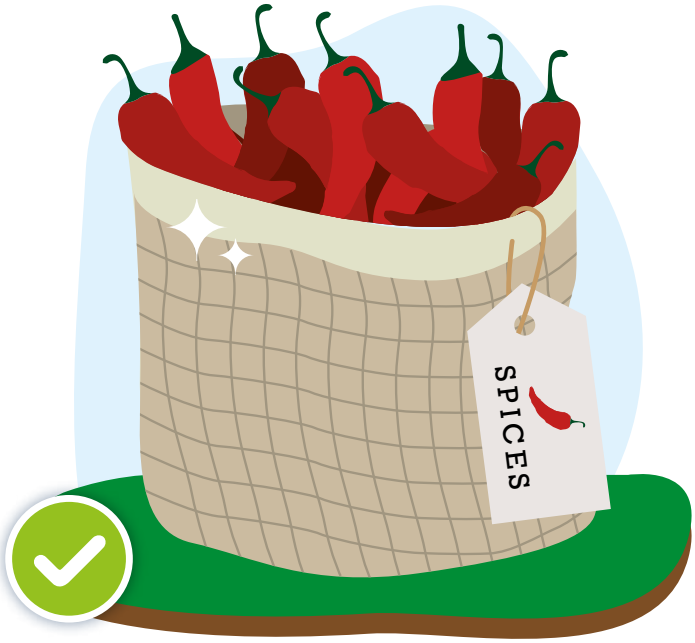
When you harvest your product, your crop may not be the only harvested plant. If weeds are present in the field, they can be harvested at the same time. The problem is that weeds are not always suitable for consumption and can contain harmful substances such as pyrrolizidine alkaloids and allergens.

How

- Implement good weed management practices (e.g. crop rotation, soil solarization, manual pulling), and sort the product after the harvest, if necessary, to reduce the chance that crops are contaminated with hazardous (e.g. pyrrolizidine alkaloids and allergens) plants.

Use containers to store harvested products and for this single purpose only - do not use them to store something else

What?



What not?

Why

Even if you wash a container that has previously held chemical products, there will be residues. If you store harvested product in this container, the residues will contaminate it. One of the main causes of allergen cross-contamination is storing allergenic and then non-allergenic crops in the same container without adequate cleaning in between.

How

- Use clean food grade packaging material to store harvested products.
- Identify the containers that are used to store chemicals, trash, and other dangerous materials, and don't use them to hold or store product.
- Identify containers used to store allergenic crops so that they are not used to store non-allergenic crops unless they have been adequately cleaned.

Place containers of harvested product on a contamination-free surface

What?

What not?

Why

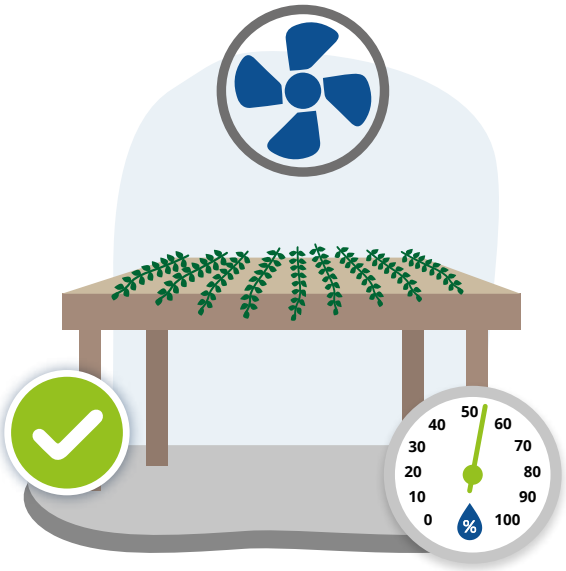
If you place the containers directly on contaminated soil, the contamination will pass to the container, increasing the likelihood of product contamination. If you use contaminated pallets, the same thing will happen. Be aware that chemical contamination of the soil is not something that is always visible.

How

- Do not put containers full of product directly on the ground where there is a big chance that the soil will contaminate your product.
- Check used pallets for chemical spills and do not use them for harvested product if there is any chance that they could contaminate the product.

Control that the humidity in the processing/drying area is not too high

What?



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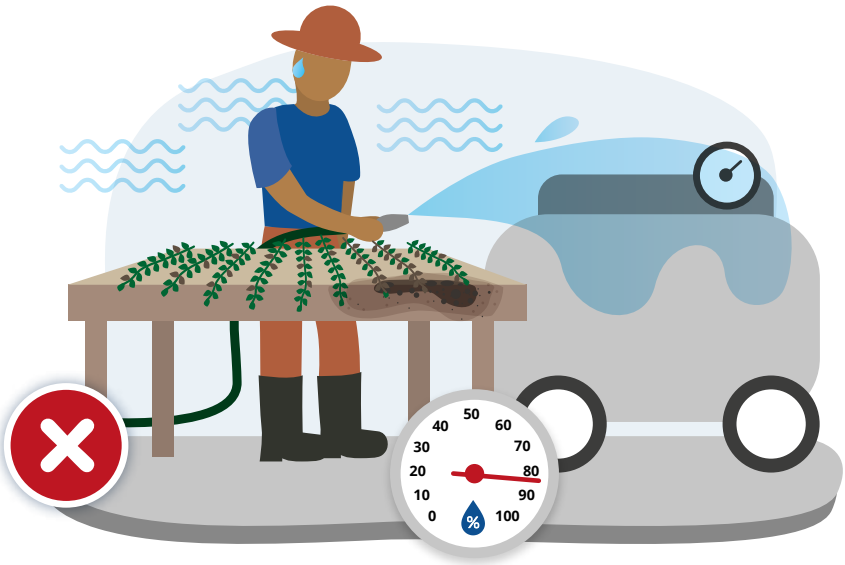


Why

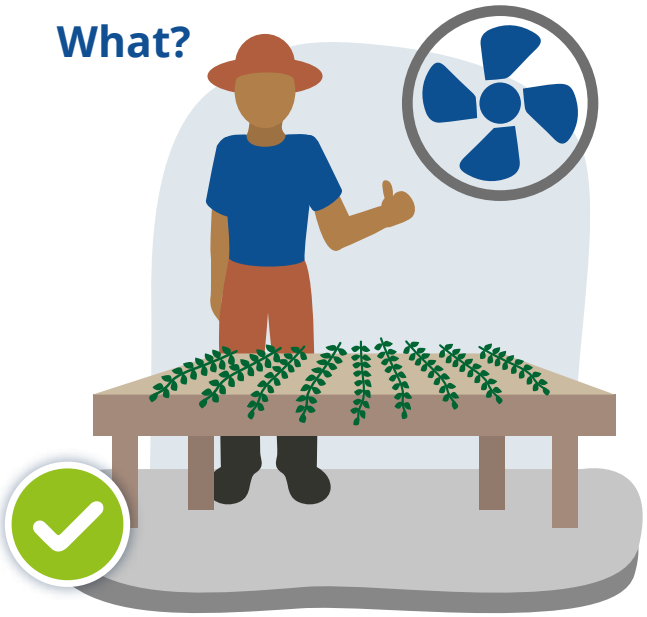
Some molds produce mycotoxins. Mold thrives in humid and warm environments. Mold will grow if the humidity is high.

How

- Place the processing plant in a dry area, since mold grows best in damp, humid places.
- Separate the receiving, cleaning, washing, processing, and storing of raw materials to prevent any cross contamination.
- Monitor the humidity (e.g. using humidity probes) and implement actions to maintain a low humidity (e.g. ventilation of storage areas, avoid standing water or wet floors, inspect roofs, avoid exposure to rain, etc.).

Optimize your drying conditions and master the drying process

What?



What not?

Why

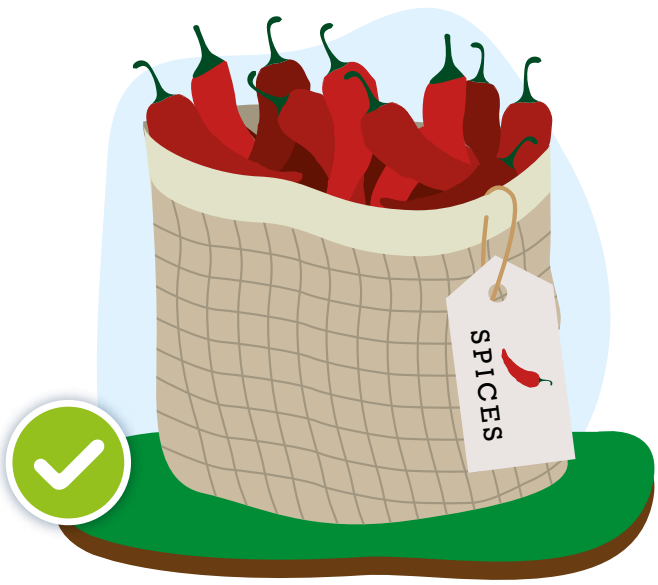
The ambient conditions are critical during the drying process. Bad conditions can lead to insufficient drying and high humidity. Molds can develop, which could cause the production of mycotoxins. Mold spores from a previous use could re-contaminate the product while it is drying. It is also critical not to damage the product during the process. If so, there will be a quality loss and a risk of molds development. If the air is heated, make sure it is not heated in a way that can contaminate the air (e.g. with fuel).

How

- Don't dry on the ground. Use trays, tarps, bamboo mats, or drying yards, and make sure they are clean and well maintained.
- Raise drying areas off the ground to stop pests from getting in and causing problems due to their activities (e.g. damages to product exposing the latter to mycotoxin producing molds).
- Think about the thickness of the drying source plant's layer so that you can always reach a safe level of moisture. Make sure the layer of fruit or leaves you're drying isn't too thick for the best drying.
- Make paths in the drying area so that people don't walk on the crop, which can damage the pods and lead to mold growth.
- Protect product from rain and night dew while they are drying, and make sure that no product gets wet again while they are being stored or at any other time.
- If hot air drying is used during the drying process, make sure that there is no risk that the fuel fumes will come into contact with the product.

Pack dried products in bags used only for this purpose

What?



What not?

Why

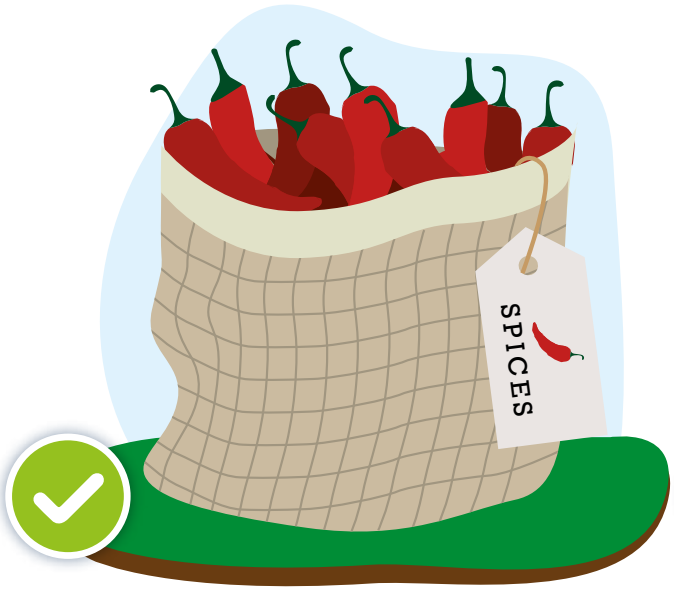
Once a bag has stored chemical products, this container will have residues, even if you wash it. If you use this container to store product, these residues will contaminate the product.

How

- Use clean bags to store product; never use bags that have been in contact with chemical products.
- Use only colorless jute bags (e.g. no red-colored bags).

Make sure ink cannot get in contact with your product

What?



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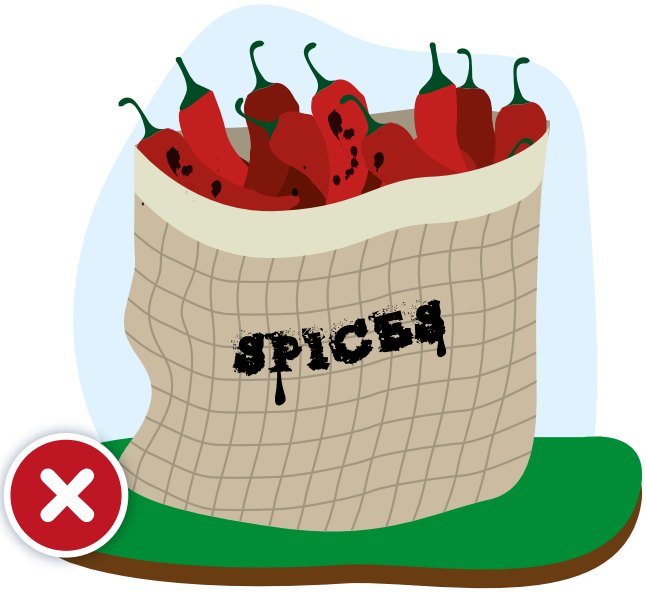


Why

If the ink is in direct contact with the product the chemical substances contained in the ink can contaminate your product. Although contamination may be low, further processing of your product may concentrate the contaminants to levels that are dangerous for human consumption.

How

- When putting product in bags or containers with an open structure, like jute bags, make sure the bag or container is not marked so that liquid ink doesn't get into the contents and contaminate the product.
- Use paper/clothe tags instead of liquid ink for marking or consider food grade ink.

Store products in suitable, well-kept warehouses, protect them from water leaks and cross-contamination sources

What?

What not?

Why

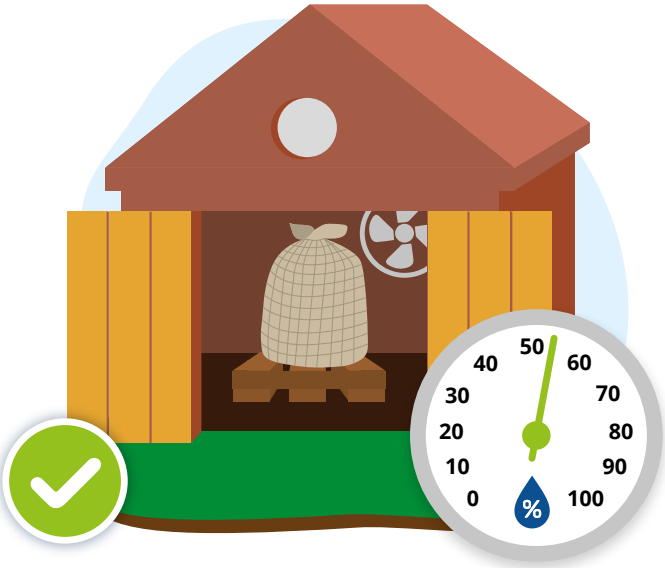
If your product is exposed to water, it can face two risks. Water can carry a variety of pollutants. When these substances come into contact with your product, they contaminate it and make it unfit for consumption. The other risk is re-humidification of your product. It will create ideal conditions for microbial development on your product, particularly molds. Because some molds are responsible for the production of mycotoxins, your product cannot be consumed if it contains molds. If your product comes into direct contact with allergenic crops, cross-contamination can occur.

How

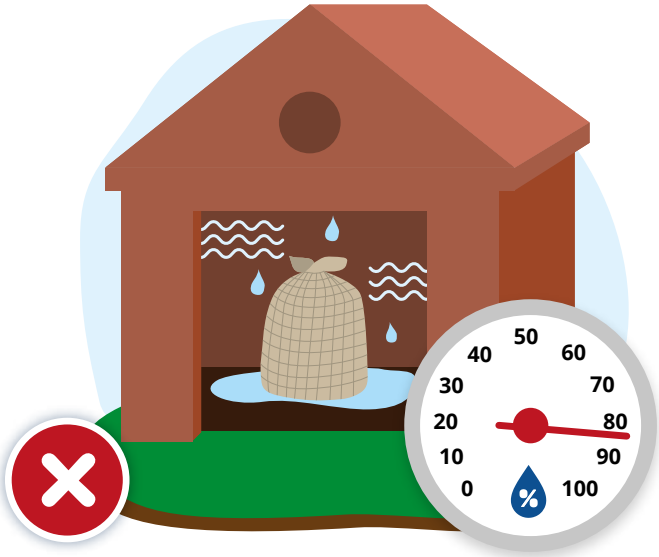
- Store product in good, well-kept warehouses that don't let water or pests in through leaks in the roof or walls, under doors, through open windows, etc. Raise the product off the floor.
- Prevent direct contact between non-allergenic and allergenic products.

Make sure the storage (humidity and temperature) conditions of your dried products are maintained to prevent deterioration

What?



What not?



Why

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How

- Temperatures in large warehouses can reach levels that are good for mold growth, especially near the roof.
- Make sure there is enough ventilation and that both temperature and humidity are well managed.
- Use a shaded area or isolate the product from the heat source to help keep the temperature inside the container from rising too much.

Store your products separately from chemicals (plant protection products, fertilizers or non-agrochemicals)

What?

What not?

Why

There is a risk of contamination if chemicals are stored with your product due to leaks, splits, and other factors.

How

- Identify a proper storage area for the different kind of goods you need to store on your farm (harvested product, final product, fertilizers, non-agricultural chemicals, pesticides, etc.). The areas must be clearly defined and the separation between goods well respected (do not use the same location to store chemicals and the product).

Use clean and in good shape vehicles for transport, protect the products from the weather conditions

What?

What not?

Why

If the vehicle used to transport your product is dirty and in poor condition, your product may become contaminated when it comes into contact with any chemical spills or residues in the truck. If your vehicle is not closed, the weather conditions may result in a re-humidification of the product and induce a mold development.

How

- Keep product-transporting vehicles clean, dry, and odor-free, and keep them well maintained.
- Before loading, check that vehicles were not used for the transport of dangerous goods and check the vehicles for cleanliness and chemical spills. This prevents products from being contaminated by those that were transported before.
- Use only cleaning products approved for “food contact surface” to clean your vehicles.
- Make sure there are no water leaks during transport.

Transport the products separately from chemicals and allergenic crops

What?

What not?

Why

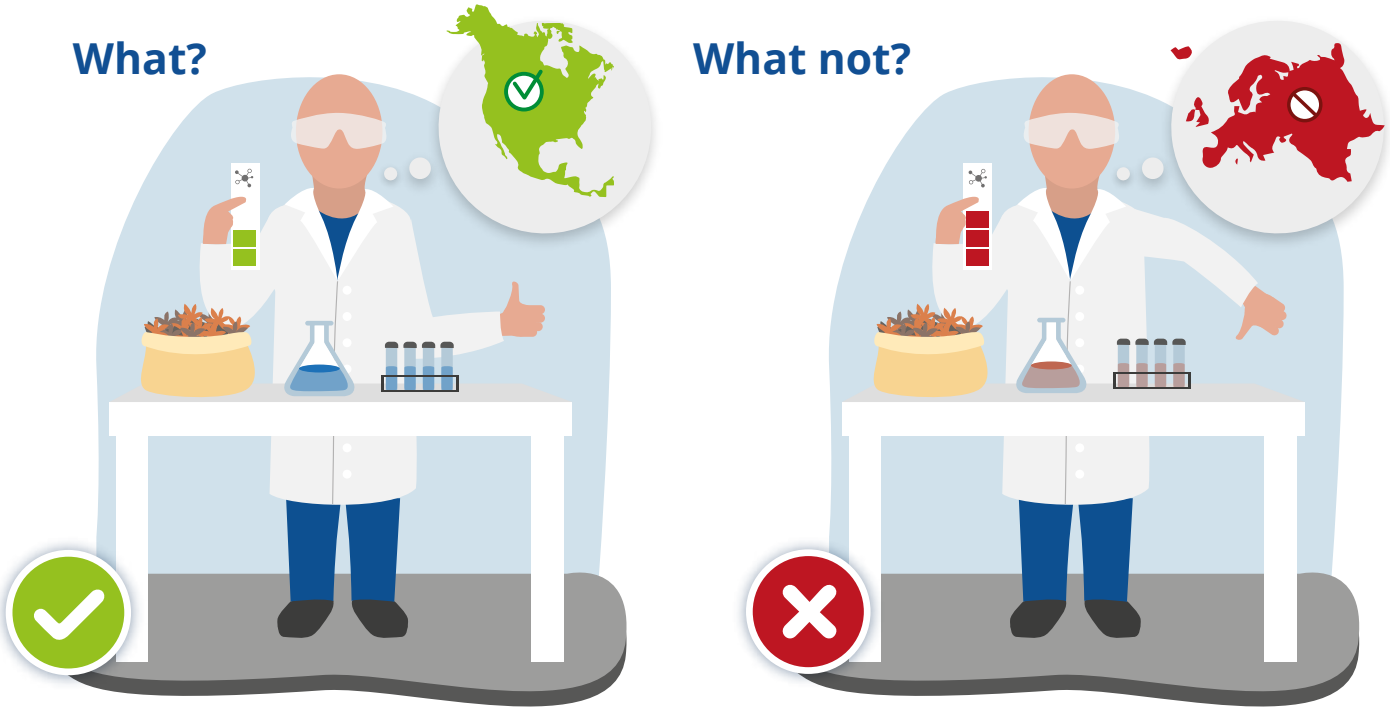
During transport, chemicals can spill or leak and contaminate your product. If so, your product won't be safe for consumption. If a direct contact between non-allergenic and allergenic products occurs during transport, then the non-allergenic crops will become contaminated.

How

- Do not ship product with chemicals.
- Prevent a direct contact between non-allergenic and allergenic products.

Verification

Verify compliance with the regulatory limit requirements on Maximum Residue Limits (MRLs) for your crop and for the country where you will sell your product



Why

MRLs are required by law for various chemical substances. Residues are very small amounts of chemical product that remain on your product and may be consumed by the end user. If this amount is too high, the consumption of your product (or repeated consumption) may be harmful to the consumers' health, and it cannot be put on the market. That is why it is critical to follow the MRL requirements.

How

- With the help of knowledgeable people (authorities, customers, experts), make yourself aware of the regulatory limits for residues of the plant protection products you are using.
- To ensure that you meet MRLs requirements, follow all the instructions for use provided by the chemical product's manufacturer.
- Test harvested products for chemical residues by an accredited lab to make sure that the chemicals were used correctly, that the withholding periods were followed, and that the product meets regulatory limit requirements.

Verify compliance with any legislation other than MRLs applicable in the country of destination of your product

What?

What not?

Why

Some countries require testing for certain contaminants on specific crops (e.g. aflatoxins, Pyrrolizidine Alkaloids).

How

- Include specific test on product if required by an importing country.

Verify that your fertilizers are free of chemical contaminants

What?

What not?

Why

Fertilizers can contain hazardous substances, such as heavy metals if you use chemical fertilizers, or veterinary drug residues if you use organic fertilizers such as manure. To avoid polluting your soil and, as a result, your product, your fertilizers (chemical or natural) must be free of any hazardous chemical residues.

How

- Confirm with your fertilizers' supplier that the material purchased does not contain any hazardous chemical residues (e.g. heavy metals, etc.)
- If you are using organic farm waste fertilizers (e.g. manure, slurry), have them tested to ensure the absence of any hazardous chemical residues

Ensure that the water in contact with the edible part(s) of your crop is drinkable

What?

What not?

Why

Water quality varies and can present a variety of potential contamination levels. As a result, you cannot use any type of water for all activities on your farm. Contamination will occur if low-quality water comes into contact with your product. Drinkable water is the highest quality level and should be used exclusively when water comes into direct contact with the suitable for consumption parts of your product.

How

- Verify that the quality of the water in direct contact with the suitable for consumption parts of your crop is drinkable.

Non-conformities & corrective actions

Evaluate the impact posed by contaminated water if it enters your field

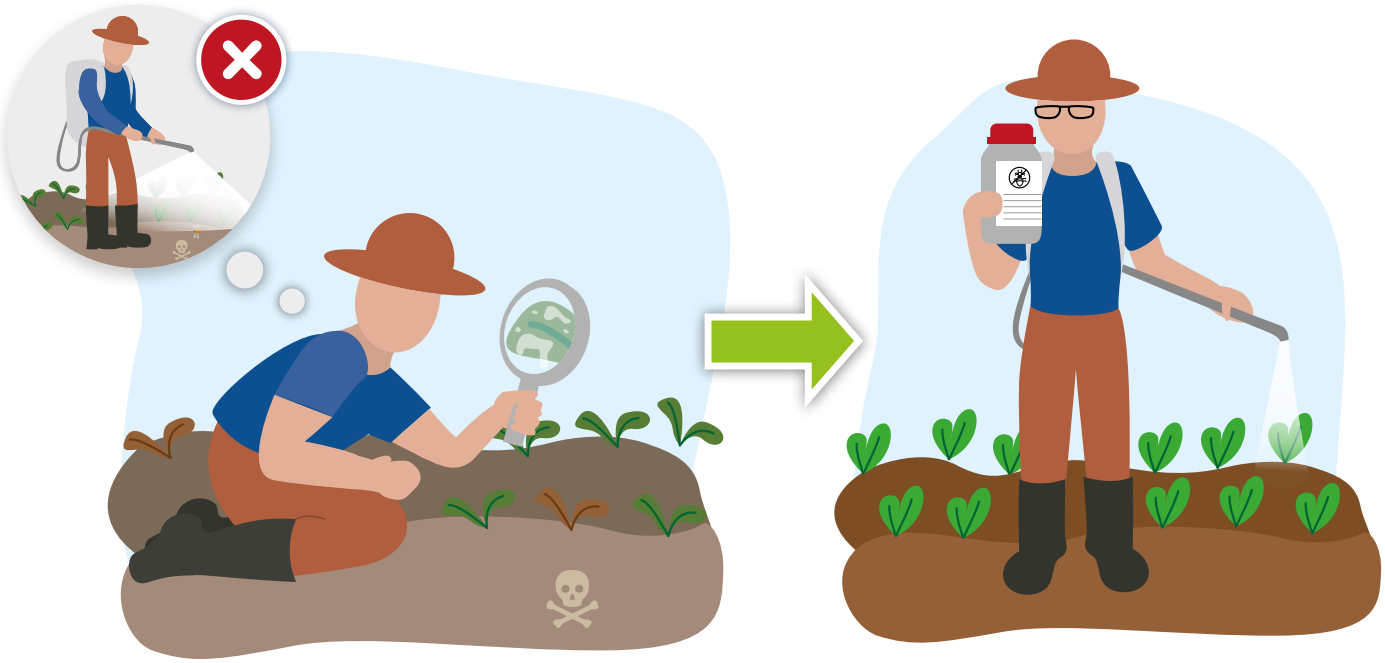
Why

If water is contaminated, it can carry hazardous substances. If these substances enter your field with water, they will be transferred to the soil, where they will be absorbed by the roots and become present in the crops. Once this occurs, the product is no longer suitable for animal or human consumption.

How

- If contaminated water flows into a site, evaluate the impact to make sure the crops and soil are safe and then take the right actions.
- If there are government instructions, use them to take care of crops that were affected by contaminated water.
- Write down the results of your evaluation and the action taken to fix the problem, if any.

Identify the cause if you exceed regulatory limit requirements and implement actions to restore a safe level



Why

If your product exceeds the MRLs (Maximum Residues Limits) or if an unauthorized substance was detected, you need to find the cause to avoid repetition. If you don't identify why it happened and if you don't implement corrective actions, the risk is that it can happen again. The cause is still present so the consequences will be the same. More than the harmful effect that your product will have on human health, you also have a financial risk. Indeed, if the same problem happens repeatedly and no actions are implemented, you will lose your customers' trust, and it can affect your business.

How

- If chemical residues in excess of maximum residue limits (MRL) and/or unauthorized substances are detected where the product is traded or exported, stop selling the product, inform who need to know and investigate the cause(s) of contamination.
- Take actions to make sure it doesn't happen again and write down what happened and what you did to fix it.

React if your fertilizers are contaminated

Why

If the analysis shows contamination of your fertilizers and you still use them, the contaminant will be spread in your field. The crops will absorb it, and they will no longer be safe to use for consumption.

How

- If the fertilizers (chemical or natural) are found to have heavy metals or other chemicals and their levels are higher than the maximum levels allowed, don't use them.
- Investigate the cause(s) to prevent recurrence.
- Inform your supplier about the issue met with its fertilizers.

References

During the development of this guide a number of other standards and guidelines were used to develop the mesure, helping to ensure allignemnet and avoding dublication actoss other exsiting best practice documents. Although these are not referred to in the guide, it is important to take note of them.

1. A scheme and training manual on Good Agricultural Practices (GAP) for Fruits and Vegetables (FAO)
2. Guidelines “Good Agricultural Practices for Family Agriculture” (FAO)
3. A guide to good agricultural practices for commercial production of ginger under field conditions in Jamaica (FAO)
4. Code of Hygienic practice for low-moisture foods CXC 75-2015 (CODEX)
5. General Principles of Food Hygiene CXC 1-1969 (CODEX)
6. Guía de buenas practicas de higiene y agrícolas para la producción primaria, acondicionamiento, almacenamiento y transporte de productos aromáticos (SENASA)
7. ISO 22002-3. : Farming
8. GlobalGAP Integrated Farm Assurance Smart for Fruit and Vegetable
9. CANADA GAP food safety
10. Asia GAP for Fruit and Vegetable
11. General guidelines for good agricultural practices on spices & culinary herbs (IOSTA)
12. Freshcare Quality and Food safety standard
13. Minimizing microbial contamination in primary production (Nestlé)
14. GFSI Global Markets Programme - Primary production Programme (Basic & Intermediate)
15. Guides des bonnes pratiques d’hygiène de la filière vanille
16. Guide de bonnes pratiques d’hygiène de la filière de production et de transformation des clous de girofle

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