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Post-Harvest Loss Reduction

**KANSAS STATE UNIVERSITY**

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**Nebraska**  
Lincoln



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# Production Guide

TRAINING GUIDE FOCUSED ON SMALLHOLDER  
FARMERS IN WESTERN HONDURAS







# In Summary

To avoid health problems related to mycotoxins:

- ✓ **Check** the corn quality in the field;
- ✓ Perform a corn **selection** prior to drying;
- ✓ **Dry** corn to adequate levels of moisture to avoid losses due to mold and pests;
- ✓ Use **appropriate storage methods** to store the corn; and
- ✓ Perform kernel selection **prior** to cooking.

Also...

- ✓ **Hygiene** in food preparation reduces the risk of illness in your family; and
- ✓ The **sale of corn surplus** generates income that can help diversify your diet.



# Preface

Corn has a cultural and historical significance in Honduras. Additionally, it is considered the staple crop of the Honduran population, particularly for families in the rural area of the country. AS a matter of fact, this commodity occupies the largest planting and harvesting area in the country.

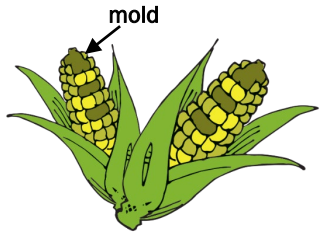
As you will see in this guide, there are many practices that are recommended to maintain the quality of corn after harvest, and maintain the health of consumers.



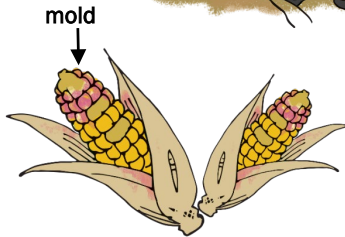
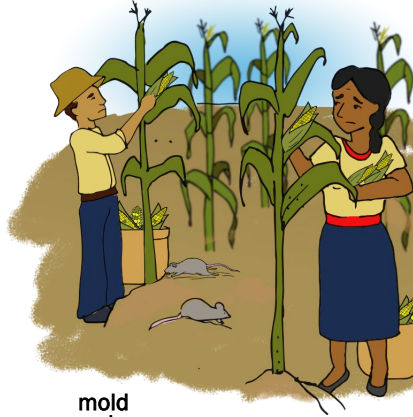


# Corn Harvest

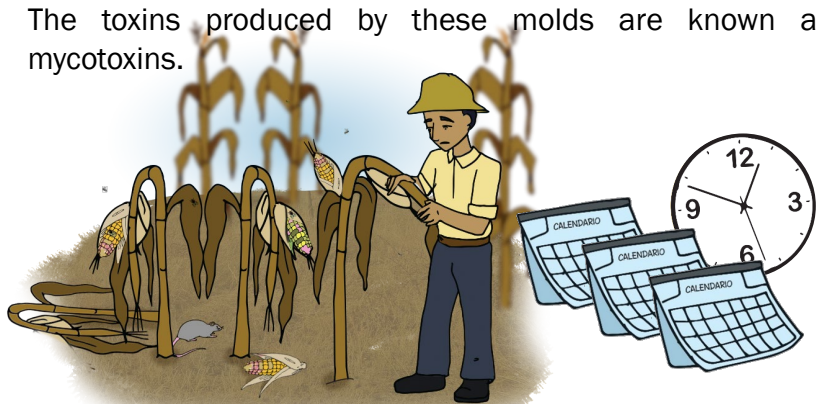
Corn should not be harvested early. Corn harvested before maturity leads to reduced yield and is more difficult to dry before storage.



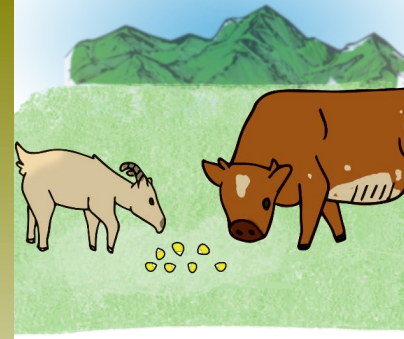
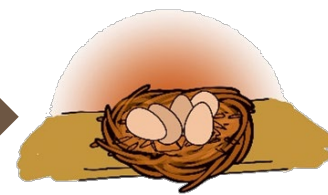
The bending of the corn stalks in the field helps with the drying of the plant. However once this is done, you should not leave the corn in the field for an extended period of time. Always be careful to reduce the risk of grain exposure to molds, birds and rain.



Many molds can produce toxins that cause disease. Examples include those that grow in grains, nuts and fruits. The toxins produced by these molds are known as mycotoxins.

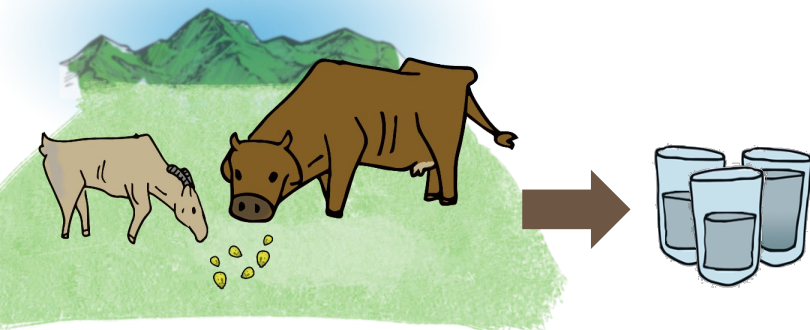
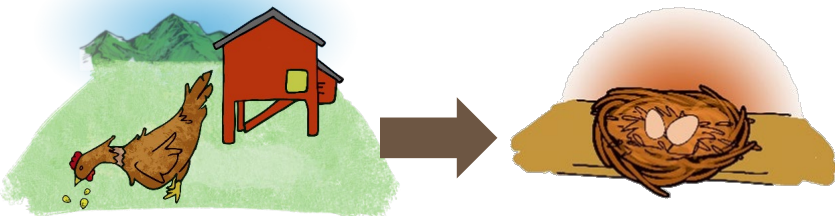


# Animal Welfare



Animals fed with good quality corn remain healthy, and provide more animal products (i.e. milk, eggs), producing enough food for your family.

# Animal Welfare

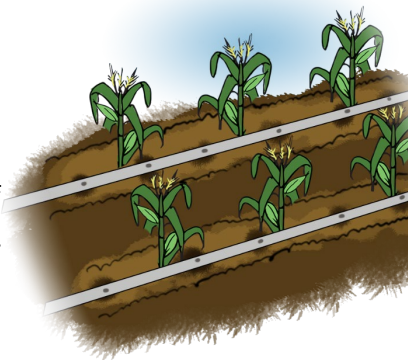


Animals fed with corn of poor quality, possibly contaminated with mycotoxins, have lower productivity, producing less food for your family.

In addition, mycotoxins may reach fresh milk when a cow/goat has consumed contaminated food.

# Corn Harvest

If possible, use a drip irrigation system or similar to improve crop growth and yield, make efficient use of water, and reduce nutrient leaching loss.



The optimum time of harvest depends on the corn variety. In general, it is expected that the plants have completed their cycle, which coincides with the appearance of a black dot on the base of each kernel.



The bending of corn is recommended for a faster drying in the field, and decreasing bird damage. It also facilitates shelling and drying for later storage. The bending should be done when the husks are white and the black dot of the grain is visible. Depending on the region, corn may remain bent from 30 to 45 days; consult with field technicians in your area.

# Drying Practices

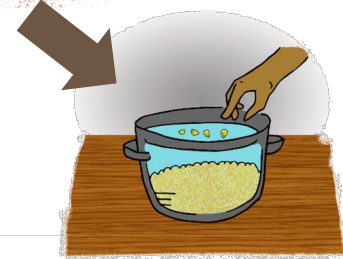


During drying, if corn is placed directly on the ground or near animals, it can get contaminated with bacteria and molds. In addition, if corn is not sufficiently dried, molds that produce toxins can grow during storage.



The consumption of spoiled corn puts your family's health at risk. Mycotoxin poisoning can be aggravated if the person who ingests contaminated food is already ill or malnourished.

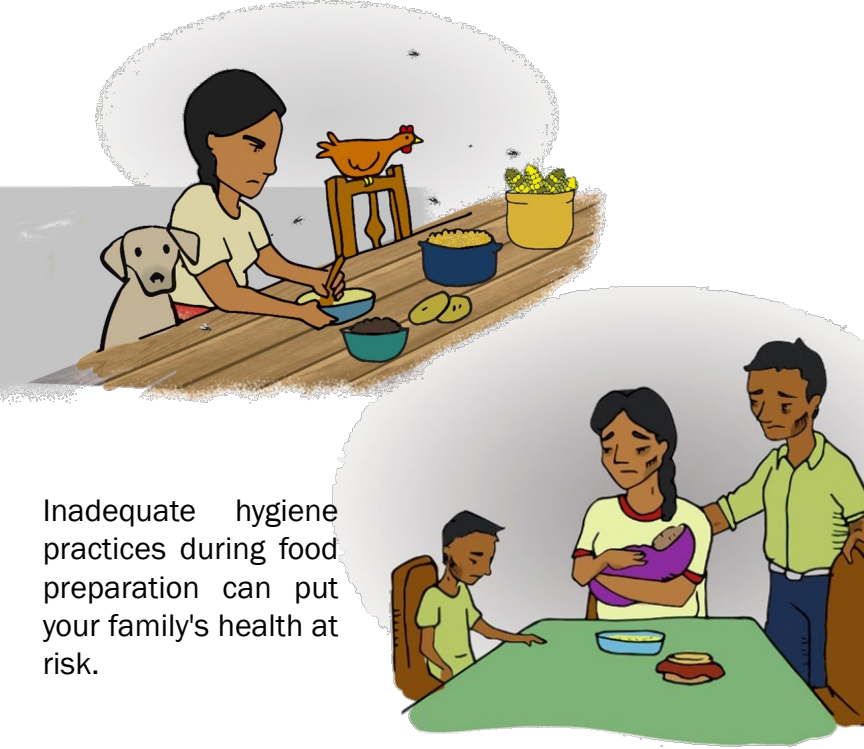
# Consumption Practices



At the household level, a selection of the grain before its consumption, along with a varied well-balanced diet, reduces the risk of disease in your family.



# Consumption Practices



Inadequate hygiene practices during food preparation can put your family's health at risk.

In addition, a diet consisting mostly of corn and corn-derived products increases the chances of exposure to mycotoxins.



# Drying Practices



In the field, a timely bending of the corn stalks, followed by an appropriate selection of harvested and dried grain, reduces the risk of disease in your family.



After harvest, an important practice is to separate the good corn from the one that is visibly damaged or moldy.

If possible, use methods that dry corn more efficiently and faster, such as using solar dryers.



# Storage Practices



During storage, if the storage space is not clean and organized, and if the storage structures (i.e. silo, drums) are not in good condition, the corn may be exposed to pests and deterioration.



Corn that was not properly selected or dried, and that is not stored properly, may be vulnerable to pests, and also be harmful to your family as it may be contaminated with mycotoxins.

# Storage Practices



It is important to perform grain quality checks. Take into account humidity, temperature, the level of insect infestation, molds, foreign matter, and rodents and birds droppings.



Corn that was previously selected, dried after harvest and properly stored, reduces the risk of disease in your family.