



**USAID**  
FROM THE AMERICAN PEOPLE



Indian Kishmish Khana Design  
May 2005  
Kabul, Afghanistan  
Prepared by J. D. Zach Lea, PhD

## Indian Kishmish Khana

Green, shade-dried raisins from Afghanistan are highly valued for their fresh, sweet flavor and typically sell for two to three times the price of sun-dried raisins made from the same fresh grapes. Afghans have traditionally produced green raisins in mudbrick drying houses or *kishmish khanas*. This publication describes the technology now in use in India for green raisin production. Afghans may wish to test this technology as an alternative to their traditional practice.

### Reducing the Drying period

Indians and Australians dip fresh grapes in a solution made from potassium carbonate and an Australian dipping oil. This reduces the drying time by one half. Indians report that drying time is reduced from 30 days to 10-13 days. This reduction in drying time allows the kishmish khana to be used to produce approximately twice the amount of green raisins produced without the treatment.

### Dipping Solution Mixture

400 gm of potassium carbonate plus 500ml of dipping oil per 100 liters of water.

### Washing Grapes Prior to Dipping

Grapes for production of green raisins should be washed prior to dipping in the chemical treatment solution. One Indian producer advises that the grapes should be placed in a tank of water for 15 minutes and then hand-washed under clean running water, then dipped into the treatment solution, then spread out over the drying beds in the kishmish khana.

### Indian Kishmish Khana

The Indian kishmish khanas are constructed with an open wood or steel structure which allows a great deal more circulation of air than the traditional mudbrick kishmish khanas. Afghans may find these Indian-style kishmish khanas are more economical to build than their traditional mudbrick kishmish khanas. The following pictures show how the Indian kishmish khanas are built. For drying, Indians generally load these drying racks with 10kg – 15kg of fresh grapes per square meter.



Inside an Indian Kishmish Khana. Note roof vent to allow escape of hot air. Note curtains of sacking material to provide shade. Note walkway space between the stacks of drying beds.



Construction detail showing joining of vertical and horizontal structural members. Note the plastic mesh supporting the grapes. Note also there are strong wires running underneath the plastic mesh to prevent sagging of the mesh and crowding of the drying grapes.



This close-up view shows use of fish netting to hold grapes. This allows grapes to hang so that exposure to air is enhanced. The view below shows more structural detail and clusters of grapes hung from the heavy wire running the length of the drying bed.





View of the side of the kishmish khana. Note curtain of sack material to provide shade. Note overhanging roof and position of curtain allows easy access to both sides of the drying beds. Note that heavy horizontal structural member is placed only on every fourth level.