

---

Mary Ellen Kozak  
Field and Forest  
Products, Inc.  
Rt. 2, P.O. Box 41  
Peshtigo, WI 54157

## DEVELOPING AND MARKETING “MEAL-IN-A-BAG” SHIITAKE PRODUCTS FOR SMALL SHIITAKE GROWERS

### Advantages of Dried Shiitake

Shiitake mushroom growers are fortunate that their crop is valuable in the dried form. High quality dried shiitake mushrooms can be produced in geographically remote areas that are an unacceptable distance from distribution centers that use fresh mushrooms. They can also be produced from fresh mushrooms that are lower quality or that are unsalable because of overproduction or other predicaments. Drying is an ideal form of preservation for small growers as it is low cost and shelf life is more or less indefinite if the mushrooms are dried properly. This enables growers to build supply and ship over long distances cheaply and irregularly.

Dried shiitake have an ever increasing consumer base with the developing culinary interest in mushrooms. Unfortunately, dried shiitake mushrooms grown in the USA usually must compete with extremely competitively priced imports, which can discourage growers from even considering drying shiitake at all.

Because the majority of shiitake growers in Wisconsin are small and located in rural areas, many have concluded they could benefit from drying their mushrooms if prices were attractive. With low prices for whole dried mushrooms and relatively low consumer awareness compared to other vegetables, growers in Wisconsin are challenged to proceed with marketing their dried product. In 1992 the Shiitake Growers Association of Wisconsin (SHIIGAW) was awarded a state grant to attempt to overcome some of these disadvantages.

### The Concept: Meal-in-a-Bag

The first obstacle was to decide if mushrooms should be packaged as “Dried Shiitake” or in another form. Because SHIIGAW considers consumer education of the culinary uses of shiitake key to the success of small producers in Wisconsin, three “meal-in-a-bag” preparations were designed to contain dried shiitake yet provide a complete dish without much more preparation than putting them in a pan. These items were intended to appeal to consumers that enjoyed gourmet convenience foods, and would enhance the value of the

---

---

---

mushroom. Higher quality dried shiitake packaged alone was intended to be the fourth product in the product line.

Food scientists at the University of Wisconsin put together the dry mix concepts of "Shiitake Barley and Rice Bake," "Shiitake Wild Rice Risotto" and "Pilaf of Shiitake and Barley." A recipe for shiitake mushroom steak sauce was also created. SHIIGAW members gathered the ingredients and set forth to assemble the prototypes.

**Getting Started:  
Problems  
encountered  
assembling  
"Meal-in-a-Bag"  
prototypes**

Putting together the four products was a learning experience. Some of the problems members faced as they worked with the dried mixes are as follows:

- While ordering the ingredients, it became clear that large cash outlays were necessary in comparison to preparing fresh mushrooms for sale. Ingredients had to be ordered in bulk, often in very large quantity. For example, the specified beef bullion required by the recipe developers had to be ordered in 100 pound minimums, enough to make about 650 pilafs.
  - The dried mix recipes were developed for fast re-hydration; therefore, either freeze dried mushrooms or sliced dry mushrooms had to be used. Since lyophilizing equipment is very expensive, sliced dried mushrooms were used.
  - If sliced dried mushrooms were to be used, every grower must slice his mushrooms before drying. Overwhelmingly time consuming to do by hand, alternative slicers were put to the test. Smallish, bit and piece yet recognizable slices can be achieved with the use of a food processor. Some electric mixers have vegetable slicer attachments that work well. Kitchen Aid mixers are popular appliances that have these attachments available. To obtain a larger, definite slice, industrial meat slicers work well. These are often very expensive when purchased new.
  - Several ways were tried to streamline the process. Mixing up large volumes of product and then weighing out individual bags would have been a fast way to measure the ingredients. The problem was settling and inaccurate mixing of the smaller, potent items such as salt, herbs and bullion as they were poured together into the individual bags. The final decision was to measure each ingredient separately and then combine in the bag. The large ingredients were measured by volume. The smaller ingredients were measured by increments of a teaspoon or weighed. A small scale accurate to the gram is essential for this task.
-

---

---

- Because of the strong color and granular, hygroscopic characteristics of the bullions, those items as well as other flavorings were added to an individual "flavor pack" so as not to color, stain or cement together the bulk ingredients, which might give the entire pack an unappealing appearance. These packs were simply the same bags used for the meal pack only trimmed down, sealed and inserted in the back. Parsley was left in the bulk pack to add color.

- A product theme, labels and attractive packaging had to be designed within a limited budget. SHIIGAW chose an attractive, art deco design printed in black ink on recycled, textured paper stock with the theme "Chef's Secret." Labels were folded over the package with space for a punch hole for hanging at the top.

## State Required Safety Regulations

In order to sell dried mushrooms in Wisconsin and to assemble these mixes, it is necessary to obtain a food processing license, or to have the operation take place where there is an existing license, such as working out an arrangement with a local restaurant. If a grower wishes to obtain a license, he needs the following:

- A clean room.
- Access to a bathroom.
- Protected lights.
- Double sink in good condition.
- \$40.00 for the fee.

Call an inspector before remodeling to find out what he or she may specifically require. They will help direct you before incorrectly investing any money on a food grade facility. To find a local inspector, call the nearest Regional Food Division Office under the State listing.

Because pressure canning a product requires more regulation, the pH of the product must be calculated to assess the level of acidity and hence investment required to safely can the product. If the pH is less than 4.7, the additional level of investment to achieve a license will be minimal. State Departments of Agriculture in the Food Safety Division have available specific requirements and regulations.

If the pH is 4.7 and above, the product is considered a hazardous food and the cost of installing high pressure processing equipment and associated safety features is considerable. In addition, this is the domain of the FDA.

## Labeling

Any food package for sale in Wisconsin must state the product identity, contents, the net weight or numerical count,

---

the name and place of business of the manufacturer or distributor and the list of ingredients in order of decreasing predominance by weight. A package **must** weigh what it says. Accurate weighing is essential.

The Nutrition Labeling & Education Act of 1990 effective May 8, 1994, requires all packaged foods to have nutritional information under the provisions of the act. At this time, as the law is currently being interpreted, a small project such as this one falls under the Small Business Exemption. Sales must be less than \$25,000 annually and no health or nutritional claims can be used. Full interpretation of the law should be available by 1994.

### Marketing

The goal of this project was to supply small growers with the information on how to successfully market dried shiitake. Ingredients and packaging materials could be bought by SHIIGAW and dispersed to individuals, each supplying their own shiitake. Marketing to local gift shops and specialty grocers would be left to the individual. Alternatively, growers could sell dried shiitake to a food processor hired by the Association or a member, where marketing would be carried out by that individual. These and other options are currently being explored.

### Cost of a "Meal-in-a-Bag"

Total cost per bag of the three dry mixes were based on ingredient cost per package. Labor was included at a cost of 48 cents per bag based on 12.5 bags filled per hour per person, assuming each person was paid \$6.00 per hour in cash. Workers in the timing study were fairly inept and the process could be streamlined with practice. Costs only reflect putting the product together in the pilot effort.

#### Shiitake Barley and Rice Bake

Cost of ingredients	\$ 1.55
Labels, bags & miscellaneous	.10
Labor	<u>.48</u>
Total Cost	\$ 2.13

#### Pilaf of Shiitake and Barley

Cost of ingredients	\$ 1.78
Labels, bags, miscellaneous	.10
Labor	<u>.48</u>
Total Cost	\$ 2.36

#### Shiitake Wild Rice Risotto

Cost of ingredients	\$ 1.76
Labels, bags, miscellaneous	.10
Labor	<u>.48</u>
Total Cost	\$ 2.34

---

---

**Conclusion**

Shiitake can be sliced, dried and put into a 2 x 4 x 4 inch clear plastic bag with other ingredients to create a delicious, unusual, visually appealing side dish or light meal that even a child can prepare. These "meals" can be compiled "on the farm" with minimal investment, stored indefinitely, and sold locally or wholesaled with other growers. Whether a grower considers the project profitable or not will depend on the individual's own expectations and what other sales opportunities he or she has with both fresh and whole dried shiitake.

A booklet is currently being compiled by SHIIGAW that has the recipes, materials and methods, ingredient sources, taste test results and marketing suggestions all for the cost of a membership to SHIIGAW. For membership information, contact SHIIGAW, 1040 Dearborn Dr., Neshkoro, WI 54960.

## QUESTION & ANSWER SESSION: MARY ELLEN KOZAK

**Q:** *How many responses did you get to your questionnaires?*

**A:** Approximately 50 - 60.

**Q:** *For your cost of 5-6 cents each, how many labels did you have printed?*

**A:** About 300 for each type of bag.

**Q:** *At what point and level of comments will or would you change a recipe?*

**A:** We will leave that to anyone who wants to read the questionnaires and modify the product.

---