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# Waste to Worth: Sustainable Processing Solutions



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# AGRICULTURAL RESEARCH SERVICE MISSION

**ARS conducts research to develop and transfer solutions to agricultural problems of high national priority and provides information access and dissemination to:**

- **Ensure high-quality, safe food and other agricultural products,**
- **Assess the nutritional needs of Americans,**
- **Sustain a competitive agricultural economy,**
- **Enhance the natural resource base and the environment, and**
- **Provide economic opportunities for rural citizens, communities, and society as a whole.**



# WASTE TO WORTH

**National Program Leader: Dr. Gene Lester**

**NP306: Quality and Utilization of Agricultural Products**

- **Add Value to Lower Grade Agricultural Products**
- **Utilize Agricultural Co-Products**
- **Enhance Sustainability of Food Supply**
- **Develop Novel Health Promoting Foods**
- **Provide Economic Opportunities for Rural Communities**
- **Reduce Food Insecurity**

**Processing Solutions Result in Novel Food and Nonfood Products**

# FOOD WASTE

**Undersized or Blemished Produce**



**Convert to Puree and Process into Healthy Foods**

# Forming Technology





# 100% Fruit Bars



# 100% Fruit Bars



- Sell Just Fruit bars and other labels annually
- Amounts to half million pounds of fresh fruit annually
- Sold around globe – Iran, Japan, Mexico, Canada, Peru, etc.



# Casting Technology



# Fruit and Vegetable Edible Films



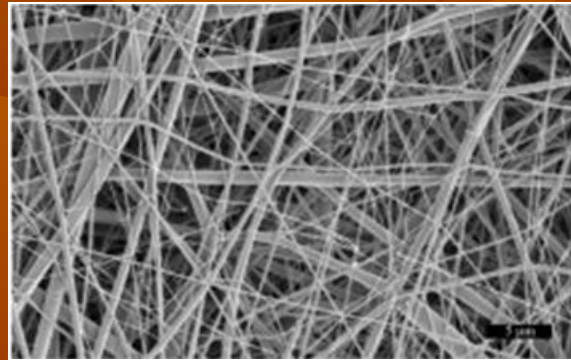
# **FOOD WASTE**

## **Fish Processing Co-Products**



**Extract Gelatin and Process into Value Added Products**

# Fish Gelatin Films and Nanofibers



**HPFR and BRU, Albany, CA**

# FOOD WASTE

Potato Skins



Rice Hulls



Process into Bioproducts



# Biodegradable Plates and Utensils



Lin Shu Liu, Wyndmore, PA  
Bill Orts, Albany, CA



# FOOD WASTE

**Wine Grape Pomace**



**Olive Pomace**



**Process into Healthy Food Ingredients**



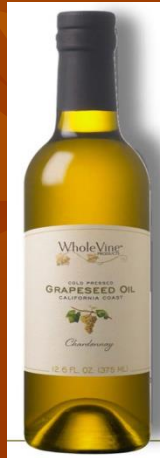
# WholeVine™ Products



Grape Skin  
and Seed Flours



Crackers



Grape Seed Oil



Cookies

## Wine Grape Pomace

# The Washington Post

# I'll have the chardonnay

By Lenny Bernstein Updated: April 25 at 7:00 am



## Olive Pomace, Leaves and Water



# McEVOY RANCH



UC Davis Olive Center  
at the Robert Mondavi Institute



**Turning Waste into Worth  
Through Innovation**

**Thank you.**