HOT TOPICS ON PEANUTS
2006 Georgia Peanut Tour

September 12, 2006

Sponsored by

The Georgia Peanut Commission
And
The Food Product Innovation and Commercialization Center
And
The National Center for Peanut Competitiveness

HOT TOPICS ON PEANUTS

TIME	TOPIC	SPEAKER
3:00-3:05p.m.	Opening Remarks	Dr. Yen-Con Hung
3:05-3:30	Economic prospects and emerging opportunities for global markets for peanuts	Dr. Nathan Smith
3:30-3:55	2006 Georgia peanut crop	Dr. John Beasley
3:55-4:10	Organic/niche market peanuts	Dr. Emily Cantonwine
4:10-4:35	Research on peanut-based products at FoodPIC	FoodPIC faculty
4.35-5:00	Ten years of Health and Nutrition	The Peanut Institute
5:00-	Social	

Improving Shelf Stability of Peanut Butter Tarts and Optimizing Process Development of Peanut-based Pasta

Kay McWatters, Manjeet Chinnan, Yen-Con Hung, and Mark Jarrard, Jr.

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Functionality of peanut flour in production of crackers

Kay McWatters, Sue Ellen McCullough and Sandra Walker

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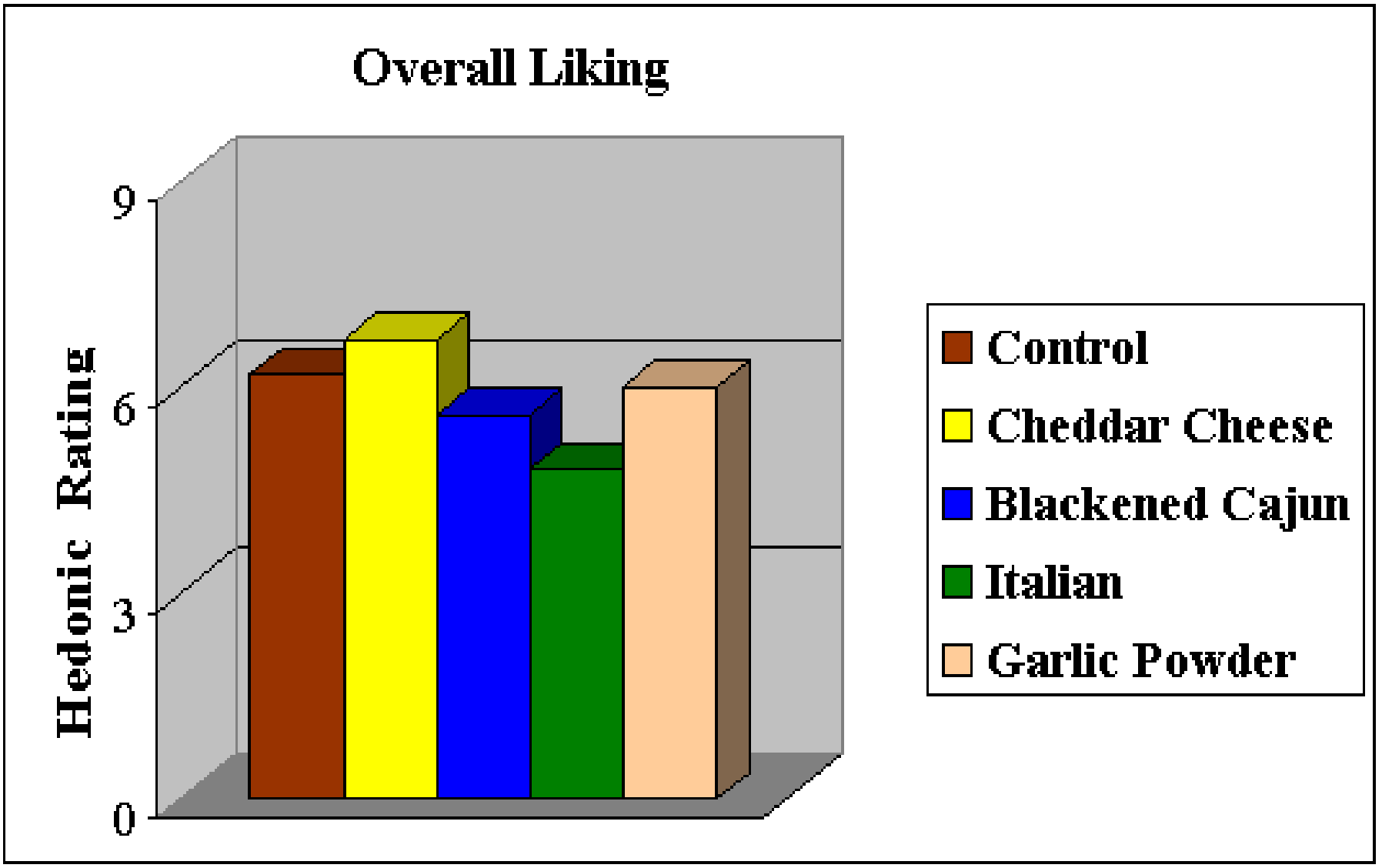
Objectives

- To enhance the flavor of baked peanut flour crackers by formula modification
- To characterize the physical and chemical properties of the modified products
- To determine the consumer acceptance of promising prototypes

Experimental crackers made from light roast peanut flour (50% protein, 12% fat)



Mean ratings for consumer acceptance of peanut flour crackers

Evaluation of peanut flour crackers at the 2005 Georgia Peanut Tour, Columbus, GA

Instrumental color measurements

- Lightness (L*)
  - Experimental crackers: 63 to 68
  - Commercial crackers: 63 to 79
- Chroma (saturation)
  - Experimental crackers: 29 to 45
  - Commercial crackers: 22 to 40
- Hue Angle
  - Experimental crackers: 69 to 79
  - Commercial crackers: 73 to 83

Nutritional data

Per 28 g serving	Experimental	Commercial
Calories	130 to 150	120 to 160
Total fat (g)	5 to 10	3 to 7
Saturated fat (g)	1 to 1.5	0 to 1.5
Trans fat (g)	0	0
Total carbohydrate (g)	11 to 16	18 to 22
Protein (g)	4 to 5	2 to 4

Instrumental texture measurements

- Force (Newtons)
  - Experimental crackers: 6 to 8
  - Commercial crackers: 8 to 14
- Energy (mJoules)
  - Experimental crackers: 1 to 2
  - Commercial crackers: 2 to 9

Conclusions

- Peanut flour functions successfully in production of baked crackers.
- Experimental crackers were acceptable to consumers and compared favorably to commercial crackers in color, texture and nutritional quality.
- Economic viability will be addressed in a future project.

The Effect of Various Peanut Flours on the Quality of Peanut Pasta

Yen-con Hung, Mark Jarrard, Jr., Sandra Walker and Marlon Higgins

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Peanut Pasta
2005

- Objective
  - Improve initial prototypes for an alternative to comparative products available in the commercial market
  - Optimize product formula for maximum nutrient fortification
  - Characterize the physiochemical properties.

Peanut Pasta 2005

White flour
Whole wheat flour
Peanut flour
Xanthan gum
Tap water

Peanut Pasta Sensory

Objectives for 2006

1. Improve textural quality of current peanut pasta prototypes.
2. Identify appropriate drying conditions to produce shelf-stable dried peanut pasta.

Materials and Methods

Light, Medium, and Dark Roast.

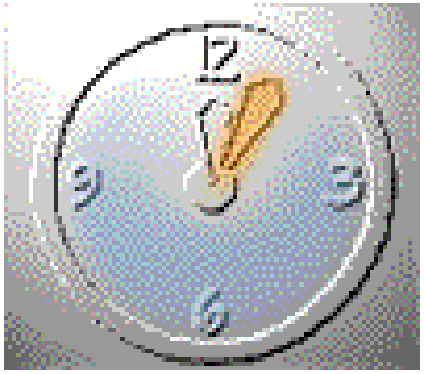
Ingredients	Grams
peanut flour	83.75
corn flour	33.5
wheat flour	217.75
salt	3
water	120
Total	458

Materials and Methods

After the dough was made, it was run through the pasta machine to mix the moisture throughout the pasta.

Materials and Methods

The pasta then rested for 20 minutes.



Materials and Methods

The pasta was then run through the machine again to make the noodle.

Materials and Methods

Noodles cooked in boiling water for 3 minutes.

Noodles were also dried in an oven for 15 minutes.

Materials and Methods

Boiled

Dried

Materials and Methods

Then color and moisture content were measured

Employing High Pressure Processing Technology to Improve Safety of Peanut Beverage and Milling Technology for Producing Shelf-stable Peanut Drink Powder

Yen-Con Hung, Manjeet Chinnan,,
Jinru Chen and Mark Jarrard, Jr.

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SPRI Project - Employing high pressure processing (HPP) technology to improve safety of peanut beverage.

Investigators: Dr. Manjeet Chinnan and Dr. Jinru Chen

- High pressure processing, a relatively new processing technology
- Advantage - Kills microorganisms without raising the product temperature
- Results in maintaining sensory and nutritional quality

HPP – Peanut beverage

- Study HPP technology under various pressure regimes for inactivation of pathogenic microorganism
  - Conduct shelf-life studies for HPP processed beverage
  - Monitor microbial growth
  - Evaluate sensory attributes.

Milling Technology for a Shelf-stable Ready-to-mix Peanut Drink Powder

Yen-Con Hung, Sandra Walker
and Mark Jarrard, Jr.

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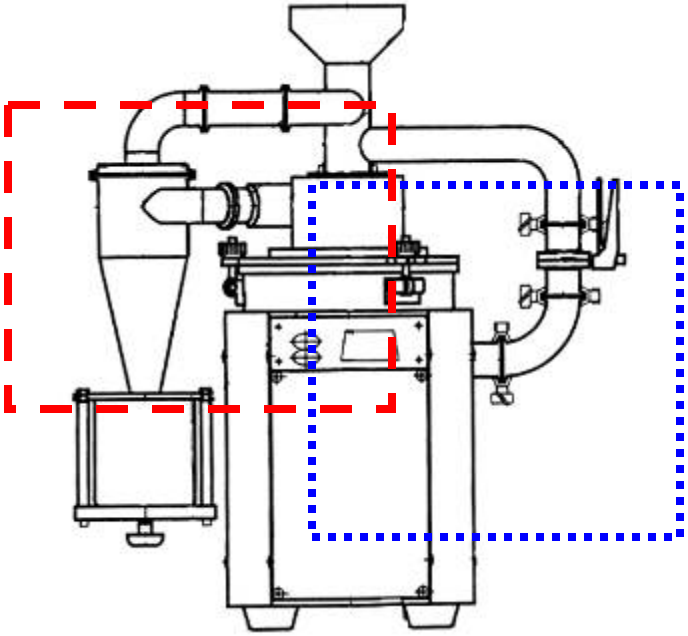
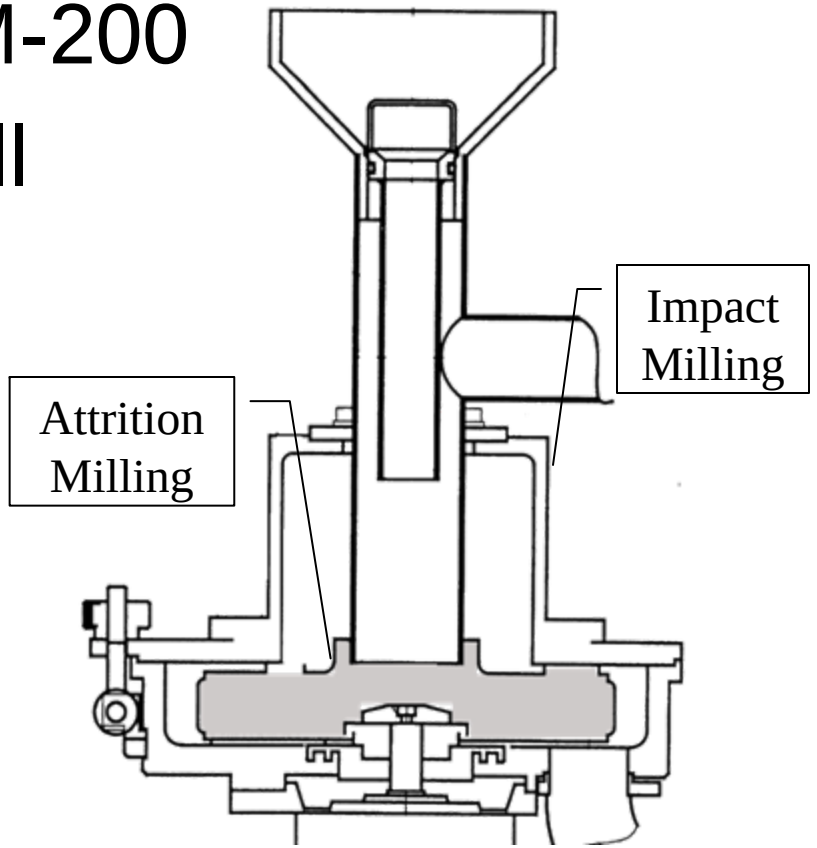
Objectives for 2006

1. To establish processing parameters to yield peanut flour with particle size suitable for a ready-to-mix drink powder.
2. To incorporate flavor and stabilizing compounds to the peanut drink powder.

Cyclone Assisted Attrition Milling

- Super Wing Mill DM-200
- Impact/Attrition Mill





Materials and Methods

Materials and Methods

Materials and Methods

CONSENT FORM

I, _____, agree to participate in peanut research which is being conducted by Y.-C. Hung, Department of Food Science and Technology, University of Georgia, Griffin, GA. I understand that participation is entirely voluntary. I can withdraw my consent at any time and have the results of the participation returned to me, removed from the experimental records, or destroyed.

The following points have been explained to me:

1) The reason for the research is to gather sensory information on consumer opinions of food samples. The benefits that I may expect from the research are a satisfaction that I have contributed to the solution and evaluation of problems relating to such examinations.

2) The evaluation procedures are as follows: Coded samples will be placed in front of me. I will evaluate samples by tasting, swallowing, and rinsing and will record my evaluation on score sheets. All procedures are standard methods as published by the American Society for Testing and Materials. Each evaluation session will take approximately 5 minutes.

3) No discomforts are foreseen.

4) Participation entails the risk of an allergic reaction to the ingredients listed below. The researcher will make every attempt to determine any allergies prior to participation. It is also my responsibility to make known to the investigators any food allergies I may have in general and specifically to peanut flour, milk or common seasonings (salt, sugar).
   Allergies _____ Witness Initials _____

5) In the event of an allergic reaction, emergency services may be obtained by dialing 911. In the event that my participation in this study results in a medical problem, treatment will be made available. My insurance company or I will be billed for the costs of any such treatment. No provision has been made for payment of these costs or to provide me with any other financial compensation.

6) The results of this participation will be confidential and will not be released in any individually identifiable form without my prior consent unless required by law.

7) The investigators will answer any further questions about the research, either now or during the course of the project. Principal Investigator phone number: 770-412-4739.

My signature below indicates that the researchers have answered all of my questions to my satisfaction and that I consent to volunteer for this study. I have been given a copy of this form.

_____ _____

Signature of Principal Investigator
Phone # 770-412-4739
Email: yhung@uga.edu

Signature of Participant

Date: 09/12/06

Witness: _____

PLEASE SIGN BOTH COPIES OF THIS FORM. KEEP ONE AND RETURN THE OTHER TO THE INVESTIGATOR.
Additional questions or problems regarding your rights as a research participant should be addressed to Dr. Chris A. Joseph, Human Subjects Office, University of Georgia, 606A Graduate Studies Research Center, Athens, Georgia, 30602, phone (706) 542-3199, Email: **IRB@uga.edu** (Revised 09/8/06)

Materials and Methods

Peanut Drink Evaluation Form **Date: 9/12/06**

Please **write** the sample **code number** on the space provided. Then evaluate each sample and check the space that best reflects your feeling about the sample. If you wish to comment, you may do so on the space provided.

Sample ___________________

Dislike Extremely	Dislike Very Much	Dislike Moderately	Dislike Slightly	Neither Like Nor Dislike	Like Slightly	Like Moderately	Like Very Much	Like Extremely
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
1	2	3	4	5	6	7	8	9

Comments ____

Sample ___________________

Dislike Extremely	Dislike Very Much	Dislike Moderately	Dislike Slightly	Neither Like Nor Dislike	Like Slightly	Like Moderately	Like Very Much	Like Extremely
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
1	2	3	4	5	6	7	8	9

Comments ____

Sample ___________________

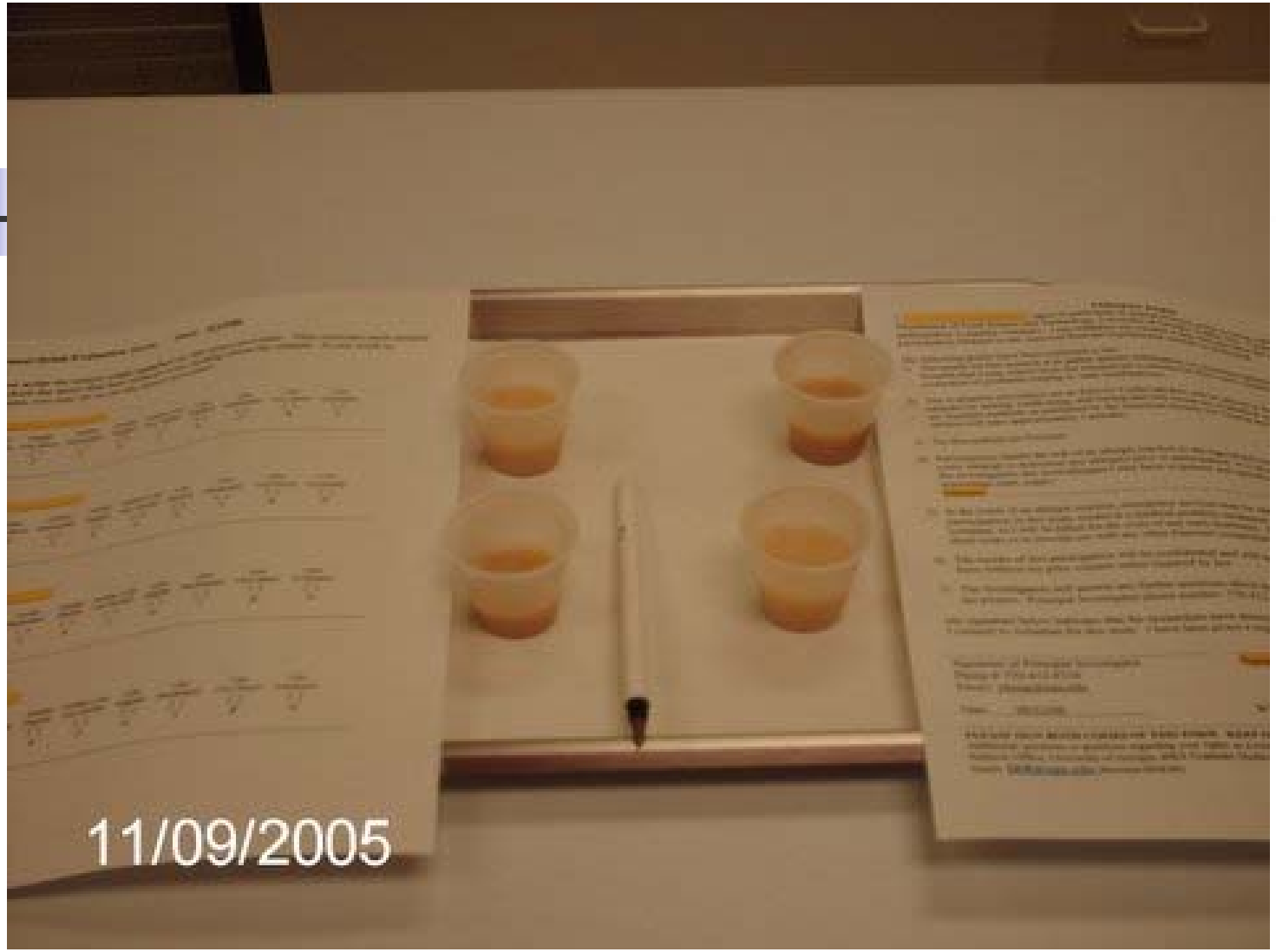
Dislike Extremely	Dislike Very Much	Dislike Moderately	Dislike Slightly	Neither Like Nor Dislike	Like Slightly	Like Moderately	Like Very Much	Like Extremely
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
1	2	3	4	5	6	7	8	9

Comments ____

Sample ___________________

Dislike Extremely	Dislike Very Much	Dislike Moderately	Dislike Slightly	Neither Like Nor Dislike	Like Slightly	Like Moderately	Like Very Much	Like Extremely
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
1	2	3	4	5	6	7	8	9

Comments ____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