

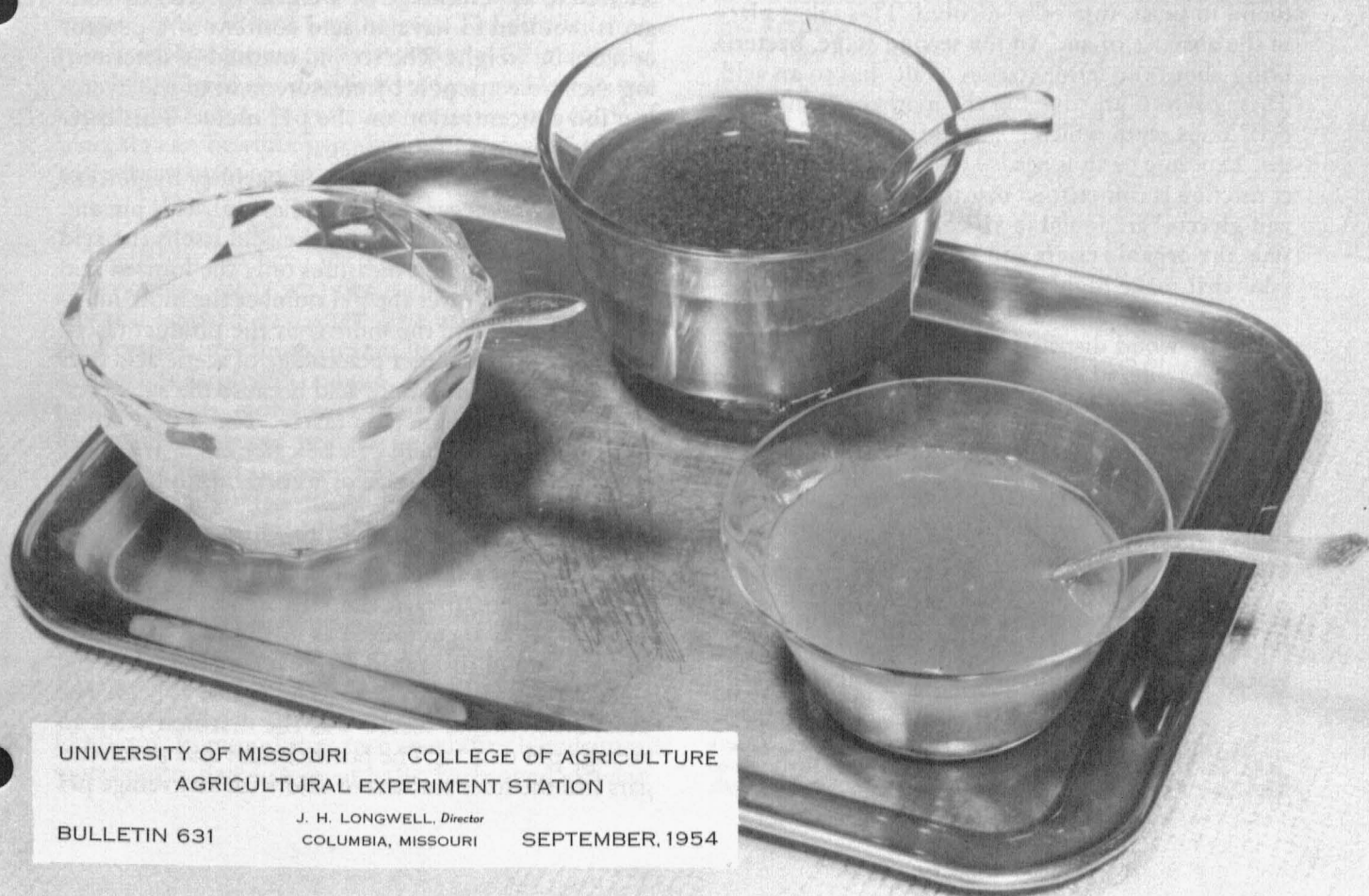
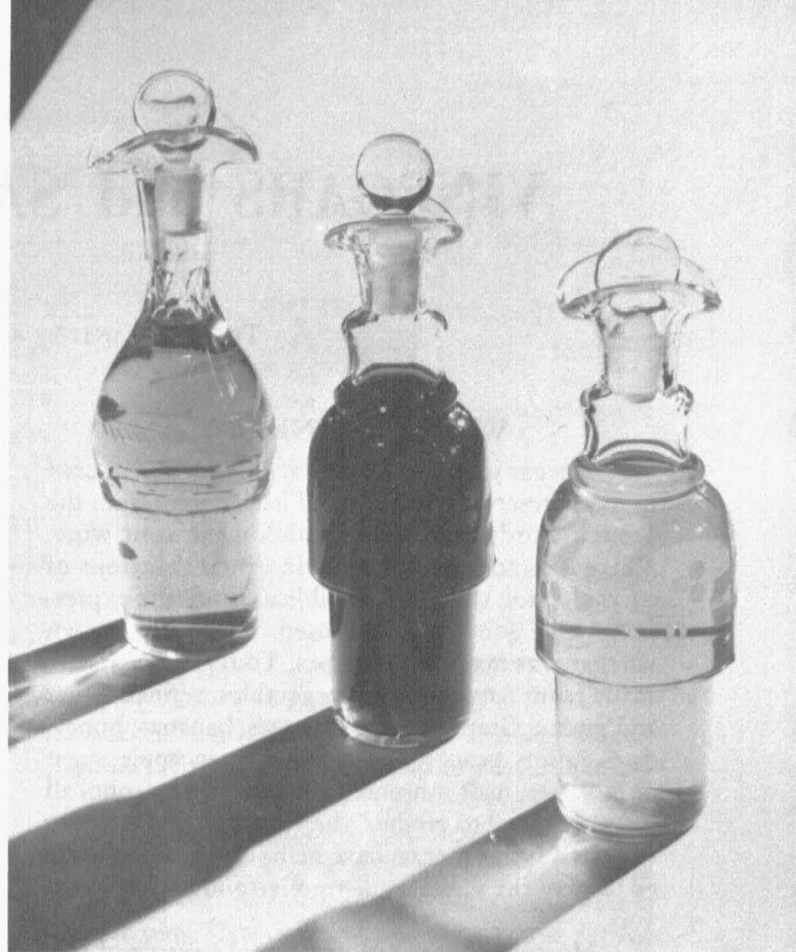
Vinegars

AND

Salad

Dressings

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VINEGARS and SALAD DRESSINGS

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WHAT IS VINEGAR?

Vinegar is one of the first acids which man used in food preservation. The word itself comes from the French words "vin aigre" which mean sour wine. Vinegar generates so readily in dilute solutions of ethyl alcohol, that even in biblical times the expression "wine gone sour" was used. The oldest known vinegar was made from grapes. Today, vinegars are made from natural fruits, vegetables, refined sugar and grains. Grapes, apples, oranges, bananas, honey, dates, raisins, pears, apricots, peaches, pineapple, sugar or molasses, malt infusion and dilute ethyl alcohol all have been used to produce vinegars. In addition, many wine and malt vinegars have herbs or seasonings added to give the vinegars distinctive and desirable flavors.

Most vinegar is produced as the result of two fermentation processes. In the first, the sugar containing solution is fermented, with the aid of enzymes found in yeast, into ethyl alcohol. This takes place in the absence of air. In the second stage, bacteria bring about the fermentation of alcohol to an acid. These bacteria are found in the mother of vinegar, a gelatinous scum which floats on the surface of vinegar. Exposure to air is needed for this reaction. Neither reaction is complete so that traces of sugar, alcohol and glycerol are found in vinegar. These substances plus the organic esters and salts add the flavor and odor that make highly desired vinegars.

Vinegar is also made from ethyl alcohol produced by wood distillation. This process yields an acetic acid content as high as 40 to 50 percent and the product is diluted to produce a vinegar of around 5 percent acetic acid. A distilled or acid vinegar with caramel flavoring added is sold in Missouri. It comes in open barrels and is available only in states which have no laws opposing the sale of compounded vinegars.

Vinegar is about 90 to 95 percent water with about 4 to 6 percent acetic acid. Also present are the organic flavoring and coloring compounds. Because vinegar contains a minimum of 4 percent acetic acid,

the product will not spoil and can be stored at room temperatures. Occasionally vinegars produced and stored in open barrels contain minute round worms which are called vinegar eels. These worms are barely visible to the naked eye but are readily observed under the microscope. Vinegar eels are easily killed by heat or sunlight and even if not destroyed have no detrimental effect on the human body. However, in none of the bottled samples of vinegar that are heated and sealed are these organisms found. Vinegar that has been stored for several years at room temperature does lose some of its moisture and such samples may have an acid content of over 6 percent.

TESTS ON ACIDITY OF VINEGARS

The acidity of vinegar is measured by two methods. The most commonly used method is simple titration with a basic solution and computation of the grams of acid in 100 cubic centimeters. This is usually referred to as percentage by weight. By law, all vinegar is required to have an acid content of 4 percent or more by weight. The second method of determining the acid content is by measurement of the hydrogen ion concentration on the pH meter. This is reported as the pH of the vinegar.

The method of determining acidity by percent acetic acid in vinegar, measures the total acids present. This includes, in addition to the acid itself, the acid salts. The pH method measures only the ionized acid in vinegar. The lower the pH number the more ionized acid present and the more sour the product tastes. A vinegar with a higher percentage of acetic acid does not necessarily taste more acid because the salts present have less influence on taste. The difference in ionized and total acid can be calculated from the known pH and percentage of acetic acid, and reported as acetate.

Table 1 shows the pH and percentage of acetic acid in the many samples of vinegar tested in the Food Research Laboratory at the University of Missouri. The salt present, computed as millimoles of acetate, also is given in this table. The average pH of all the vinegars was 3.05 with a range from 2.64 to 3.25. The most acid vinegar tested was the distilled with an average pH of 2.74. The bottled cider and pear vinegars had the least amount of acid with an average pH

TABLE 1 -- ACIDITY OF VINEGARS

Type of Vinegar	Description	pH		Acetic Acid		Acetate in Millimoles	
		Number of Samples	Average	Number of Samples	Average %	Number of Samples	Average
Cider	Bottled	18	3.25	9	4.4	6	19.6
	Open barrel	8	3.08	5	4.4	5	16.2
	All cider	26	3.19	14	4.4	11	18.1
Wine	Red bottled	6	2.87	6	5.1	6	10.9
	White bottled	3	3.00	3	4.9	3	14.5
	All wine	9	2.91	3	5.0	9	12.1
Malt	Bottled	3	3.07	3	5.3	3	18.2
Peach	Bottled	1	2.98	1	5.4	1	14.9
Pear	Bottled	1	3.25	1	4.4	1	22.5
Apricot	Bottled	1	3.10	1	5.0	1	18.2
Distilled	Regular bottled	5	2.64	4	5.1	4	5.9
	Sugar, open barrel	3	2.80	2	3.6	2	6.5
	All distilled	8	2.74	6	4.6	6	6.1
All Vinegars		49	3.05	35	4.7	32	14.2

of 3.25. All vinegars except four samples of open barrel type met the legal requirement of 4 percent acetic acid. Five of the vinegars had acetic acid contents of 5 percent or more. They were malt, peach, apricot, red wine and bottled distilled. The average of all vinegars tested was 4.7 percent acetic acid. The acetate present in natural fruit or malt vinegars ranged from 10.9 to 2.5 millimoles. The distilled vinegars had a low mean acetate estimate of 6.1 millimoles which indicated the distilled vinegar was low in salt content. Most of the variation in flavor and color of vinegars can be traced to differences in amounts of natural salts present in vinegar.

USES OF VINEGAR

Vinegar has been used since ancient times as a preservative. Today we prize it chiefly for the specific flavor it imparts to dishes. The use of vinegar as a preservative is still recognized in the manufacture of such foods as pickles, catsup, relishes, green olives, pickled onions, cauliflower and other vegetables, and fruits such as spiced peaches and crab apples. Also, vinegar is added to many foods during preparation. These include salad dressings, sauces, gravies, and seasonings for vegetables. Vinegar changes the viscosity of cream or evaporated milk so that it thickens and can be used as sour cream.

The acid property of vinegar aids in tenderizing the connective tissue proteins in meat, such as veal. Vinegar may be used to neutralize hard water and thus aid in lessening the cooking time of vegetables like beans. In meat dishes such as schnitzel, lindstrom, sauerbraten, Swedish meat balls, barbecued, deviled

or pickled meats, vinegar is added chiefly because of the specific flavor it gives to the products. During hard times the early American pioneers often made vinegar pies. Here, vinegar was substituted for the non-available acid fruit. Probably the most universal use of vinegar today is in salad dressings. Other acids might be used but vinegar is prized for both its flavor and keeping quality.

Cider vinegar is the most widely used of all vinegars. It is usually sold as a fairly standard bottled product. Tests made on cider vinegar in open barrels showed wide variation in acidity. Cider vinegar is very acceptable because of its desirable flavor and odor. Distilled or white vinegar is cheaply made from a solution of ethyl alcohol. There is no flavor except the acid and this vinegar is colorless. Food manufacturers who prefer an inexpensive acid almost always use this type of vinegar.

Grapes are used in the production of wine vinegar. Red wine vinegar is made by allowing dark colored grapes to ferment. Yellow or white wine vinegar is made by removing the skins or using white grapes. Many types of herbs and seasonings are added to wine vinegars on the market today. Malt vinegar is a dark, heavy, lemon-like flavored vinegar. Often it has tarragon seasoning added. It is used for fish sauces and chicken salads and can be used instead of lemon in many dishes. Pear vinegar is quite dark yet similar in flavor and use to cider vinegar. Peach, apricot and pineapple vinegars are pale yellow in color and are excellent in dressings for fruit salads.

In the south, a vinegar made from the by-products of the sugar refining industry is made and sold

as sugar vinegar. It resembles cider vinegar in color, but lacks some of the natural flavor. It is used for the same purposes as cider vinegar.

MAKE YOUR OWN HERB VINEGARS

You can make your own herb vinegars inexpensively and easily. Bring to the boiling point one pint of cider vinegar and pour it over one of the following:

- ½ teaspoon of dried herbs
 - rosemary
 - basil
 - tarragon
 - dill seed
- 2 tablespoons of fresh herbs
 - rosemary
 - sage
 - sorrel
- ½ cup of chopped mint leaves
 - chives
- 1 head dill seed
- 1 small clove garlic (slashed)

Some prefer a mixed spice herb vinegar. Here is one combination. For 1 quart of boiling clear vinegar add:

- ½ teaspoon clove buds
- ½ teaspoon peppercorn
- 1 stick cinnamon
- 1 small clove garlic, slashed

Let the above infusion stand for about 10 days, then strain and store covered or bottled for future use.

The uses of herb vinegars are listed in Table 2.

TABLE 2 -- USES OF HERB VINEGARS

Flavor of Vinegar	Suggested Uses
Basil	Bean or tomato salad, meat loaf, Italian or Mexican dishes.
Chive	Green or vegetable salads
Dill	Fish, poultry, cole slaw, potato salad
Garlic	All salads, except fruit, stews and sauces
Marjoram	Greens
Mint	Fruit salads, lamb dishes
Rosemary	Fruit salads
Sage	Meat and egg salads
Sorrel	Creamed egg
Thyme	Fruit salad, split pea soup
Mixed herb vinegars	Green or vegetable salads

SALAD DRESSINGS

Kinds and Uses

Salads make a real contribution to the nutritive value and variety of meals, therefore, every effort should be made to make them taste as good as they

look. Dressings used in preparing salads should make these foods taste even better.

The history of salad making in Europe began with the early Romans who used a blend of olive oil and lemon juice on greens. The French chefs added egg and mustard to French dressing and made mayonnaise. The American housewife invented the cooked salad dressing. In use today are dressings of two groups, cooked and uncooked. The uncooked dressings include simple mixtures of vinegar, cream or fat and seasoning, French dressing and mayonnaise. The cooked dressings are made with either a starch base or a true custard in which eggs are used as the thickening agent.

Commercial salad dressings are mainly of three types: French, mayonnaise and salad dressing which has a cooked starch base. Some of the French dressings have stabilizers (spices, pectins, algin or moss derivatives) added to keep the ingredients in suspension. By law, French dressing must be not less than 35 percent oil by weight. The stabilizer must not exceed 0.75 percent by weight of the finished dressing. Commercial mayonnaise is usually stiffer and milder in flavor than salad dressing. It must contain 65 percent oil by weight compared to the 30 percent oil in salad dressings. Commercial salad dressing often has more seasoning added than mayonnaise.

I. Uncooked Salad Dressings

Simple Mixtures. Vinegar, bacon fat or oil, and seasonings may be mixed to produce a simple dressing. A mixture of cream (sweet or sour), vinegar and seasoning may be used in a variety of salads. Condensed or evaporated milk may be substituted for cream.

French Dressing. French dressing is a mixture of oil, acid and seasoning. This dressing may be a temporary emulsion that needs to be shaken or mixed before using, or it may be an emulsified viscous fluid. The color of French dressing is often orange due to the addition of paprika or some tomato product. A clear French dressing is sometimes made as a dressing for fruit salads. Extra seasonings (chili, catsup, pickles, onions, cheese, spices, etc.) may be added to the basic French dressing. Variations for French dressings are listed in Table 3.

French dressings are used for lighter, green vegetable or fruit salads. These dressings are also used to marinate or season such foods as potatoes, starchy vegetables or meats. French dressings may be used to prevent discoloration of such foods as bananas and avocados. Some sauce recipes use French dressing as their basic flavor ingredient. Home prepared French

TABLE 3 -- FRENCH DRESSING VARIATIONS

Kind	Amount of Dressing	Suggested Additions	Suggested Uses
Cocktail Sauce	1 cup	1 cup chili sauce	Fish sauce
Russian	1 cup	2 T. chili sauce 1 T. chopped onion	Green or vegetable salads
Red	1 cup	2 T. tomato catsup 2 T. chopped olives or pickles Sweeten if desired	Green salads Sauces
Roquefort	1 cup	2 to 4 T. crumbled Roquefort or blue cheese Few drops Worcestershire sauce	Green salads
Martinique	1 cup	2 T. chopped parsley 2 T. green pepper	Green salads
Chiffonade	1 cup	2 T. chopped olives 1 T. chopped green pepper 1 T. chopped onion 1 chopped hard cooked egg	Lettuce or greens
Creamy	1 cup	2-3 T. cream (shake well)	Greens
Sweet French	1 cup	4 T. confectioners Sugar or 4 T. honey	Fruit salads

dressings are easy and inexpensive to make. One recipe in this bulletin has a pectin stabilizer added to prevent separation of the oil and vinegar.

Mayonnaise. This dressing is a semi-solid emulsion of edible vegetable oil, egg, vinegar or lemon juice and spices. It is essential that mayonnaise remain in permanent emulsion. Mayonnaise should be stored covered at refrigerator but not freezing temperatures. Improper mixing, freezing or drying may cause the dressing to separate. The emulsion may be reformed by beating gradually into a fresh egg yolk. Many of the variations which can be made from the standard mayonnaise are listed in Table 4.

II. Cooked Salad Dressing

Custard Base. Since the egg thickens the liquid (milk, water, fruit juice or vinegar), this type of dressing may be prepared in a double boiler. Often a fruit juice salad dressing is made and combined with whipped cream for use on fruit salads.

Starch Base. This dressing usually is prepared in the double boiler and is an inexpensive mixture of milk or water, vinegar or fruit juice, starch and seasonings. Often some egg is added. This type of dressing keeps well and is most often used to bind heavy or starchy ingredients together, as potatoes, beans, macaroni or meat for salads. Commercial starch base salad dressing is less expensive and more widely used than mayonnaise.

Recipes*

The basic ingredients used in preparing salad dressings are the oil, acid and seasonings. These ingredients should be varied to suit family preferences. Olive oil has a distinctive flavor which is popular for

*In all recipes T stands for tablespoon, and t for teaspoon. All measurements are level.

TABLE 4 -- COMMERCIAL SALAD DRESSING OR MAYONNAISE VARIATIONS

Kind	Amount of Dressing	Suggested Additions	Suggested Uses
Appetizer	1 cup	1 cup French dressing	Vegetable salads
Thousand Island	1 cup	1/3 cup chili sauce 1 T. chopped olives 1 T. chopped pickles 1 chopped hard cooked egg	Lettuce
Russian	1 cup	2 T. chili sauce 1 t. sugar	Lettuce Greens
Roquefort	1 cup	2 T. mashed Roquefort cheese 1 T. lemon juice	Lettuce or Greens
Cream	1 cup	1/3 cup cream or canned milk 1 T. sugar 1/2 t. salt	All types vegetables
Herb	1 cup	2 T. chopped chive 1 T. chopped parsley 2 T. milk	Fish Meat Cabbage
Tart	1 cup	2 T. horseradish 1 T. prepared mustard	Potato or starchy vegetable salads
Red	1 cup	4 T. tomato paste Sugar) to taste Salt)	Fish Salad or sauces
Fluffy	1 cup	2 T. sugar 1/2 cup cream, whipped	Fruit or sweet salads
Fruit	1 cup	1/4 cup fruit juice 1/2 cup cream, whipped	Fruit
Party	1 cup	2 T. Maraschino cherry sirup 4 T. Maraschino cherries 1/4 cup cream, whipped	Fruit
Hawaiian	1 cup	1/2 cup crushed pineapple (slightly drained)	Fruit
Cranberry	1 cup	1/2 cup cranberry jelly 1/4 cup cream, whipped	Turkey, chicken, banana salads
Peanut Butter	1 cup	1/3 cup peanut butter 1 T. sugar 3 T. cream	Apple or fruit
Gelatin	1 cup	1/2 cup stiff gelatin - beaten 2 T. sugar	Fruit or gelatin salads
Cream cheese	1 cup	6 oz. cream cheese 1 T. sugar 1/2 t. salt	Fruit or gelatin salads (excellent as spread)

use by some in preparing salad dressings. Other edible, but more bland salad oils are from corn, cottonseed, or soybeans. In the south peanut oil is used. Butter or bacon fat may be used to give a desired flavor to cooked dressings. The acid in salad dressings may be a plain cider vinegar or any of the many types of vinegars discussed in the first part of this bulletin. The juice of such fruits as lemons, limes, or grapefruit is sometimes used in place of mild vinegar. Sugar and honey add interest to fruit dressings. Herbs, either fresh or dried, may be added directly to the salads or the dressing. Because of the amount of oil or fat present, salad dressings should be stored in a covered container in a cool place.

I. Uncooked Salad Dressings

Simple Mixtures

SOUR CREAM DRESSING

1 cup cream
2 T. vinegar & 1 T. lemon juice or
3 T. vinegar

1 T. sugar
1 t. salt

Mix the dry ingredients and add the acid. Add the cream. Stir thoroughly. Store in the refrigerator.



Salads may be used as appetizers, a main course, accompaniment to main course and dessert.

until thick. Cool. Combine with an equal quantity of whipped cream just before using. Refrigerate.

Starch base

COOKED DRESSING

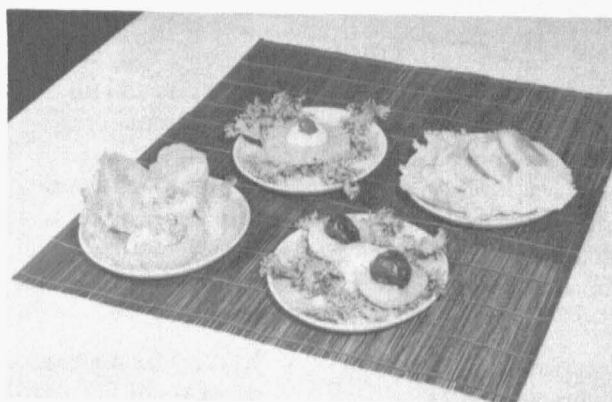
2 T. fat	1 egg
2 1/3 T. flour	3/4 t. salt
2 1/3 T. sugar	3/4 t. dry mustard
1/2 cup water	1/8 t. paprika
1/2 cup milk	3 T. vinegar

Melt the fat in the top of the double boiler. Add the flour, and mix. Add the milk and water and cook in the double boiler for 10 minutes. Beat egg. Add to the starch mixture and cook until thickened. Remove from heat. Add spices and vinegar. Refrigerate.

USE SALADS IN MANY WAYS

The four main uses of salads are: appetizers; the main course of the meal; an accompaniment to the main course and dessert. Most appetizer salads are of fruit with a tart dressing. A salad that accompanies the main course usually is a light salad composed of greens, vegetables or fruits. It may be molded. This type salad may be used to add flavor, color or crispness to the course with which it is served. Main course salads are popular in the summer time. These salads are usually made with some protein-rich food as fish, chicken, meat, eggs or cheese or a starchy food such as potatoes, beans, peas, or macaroni. Dessert salads are more or less sweet and may be a simple or elaborate combination of fruit used alone or with gelatin, custard base or whipped cream. Also, dessert salads may be frozen.

Crisp, well chilled ingredients are important in salad making. The food should be bite size and served in a simple attractive manner. Fruit, meat or vegetables should be well drained. Use just enough dressing to coat and season the food.



Combinations of fruits with a suitable dressing make delicious salads.

Suggested Salad Combinations

Vegetable Salad Combinations

1. Shredded cabbage, carrots, and chopped nuts.
2. Shredded cabbage, carrots, and chopped raisins.
3. Shredded carrots and coconut.
4. Asparagus spears and sliced hard cooked eggs.
5. Asparagus spears marinated in French dressing.
6. Cabbage, cucumber and tomato.
7. Cabbage, and red apple.
8. Cabbage, celery, onion, and green pepper.
9. Shredded cabbage, dates, nuts with sour cream dressing.
10. Raw spinach, cauliflower, shredded lettuce, onion.
11. Ground peanuts, shredded carrots and, if desired, onion juice
12. Salad green with crisp chopped bacon.
13. Salad green and hard cooked egg with cream dressing.
14. Salad green, scallions, carrots, and radish slices.
15. Raw cauliflower, carrots, lettuce and radishes.
16. Red cabbage and pineapple.
17. Tomato, asparagus spears and green pepper.
18. Cucumber and radish.
19. Tossed green salads, using a variety of greens (lettuce, endive, romaine, spinach, cabbage, watercress, escarole, parsley, etc.) and add any of these: carrots, radish, cauliflowerlets, celery, cheese, cucumber, onion, pepper, tomato, cooked meat, cooked egg, cooked vegetables.

Fruit Salad Combinations

1. Grapefruit and orange sections and avocado slices.
2. Orange, pineapple, marshmallows, and nuts.
3. Apples, carrots, and raisins.
4. Tokay grapes, chopped apples, celery and nuts.
5. Banana halved, rolled in dressing and in ground nuts or crumbled corn flakes.

6. Apples, diced with chopped celery and dates, with peanut butter, salad dressing.
7. Cherries, pineapple, bananas, apples and nuts.
8. Orange and Bermuda onion and date slices.
9. Assorted melon balls with fresh strawberries.
10. Orange and Bermuda onion slices.
11. Prunes stuffed with cream cheese blended with nuts.
12. Frozen fruit—cherries, diced pineapple and sliced bananas, fruit salad dressing and whipped cream.

Meat, Fish, Egg, Cheese or Starchy Salad Combinations

1. Tuna fish, celery, onions, and a salad green.
2. Diced cooked pork or ham, celery, pickles with mayonnaise.
3. Chopped meat, celery, cucumber and pimiento.
4. Salmon, celery, and chopped green pepper or olives.
5. Salmon, celery, and hard-cooked egg.
6. Salmon, cooked macaroni, celery and sweet pickles.
7. Shrimp, celery, stuffed olives with French dressing.
8. Chicken, celery, olives, and hard-cooked egg.
9. Crab meat or lobster may be substituted for the shrimp.
10. Red kidney beans, celery, onion, chopped egg and pickle relish.
11. Cooked peas, cheese, diced celery and sweet pickle.
12. Cooked macaroni, sweet pickle and chopped pimiento.
13. Potato, sweet pickle, chopped egg, celery. Optional—onion, green pepper, celery seed, chopped parsley.
14. Potato, cooked carrot, dill pickle and onion.
15. Cottage cheese with green or red pepper.
16. Deviled eggs and lettuce.
17. Green pepper, stuffed with cheese, chilled and sliced.
18. Sharp cheese, shredded lettuce, and onions with French dressing.
19. Cottage cheese, crushed pineapple, sliced radishes, and chopped olives.
20. Hard-cooked eggs, diced celery, olives.
21. Scooped-out cucumber stuffed with cream cheese, sliced.

Molded Salads

1. Shredded carrots, celery, and apple in lime gelatin.
2. Asparagus and sliced hard-cooked egg in tomato gelatin.

3. Chopped cucumber and crushed pineapple in lime gelatin.
4. Cooked cranberry sauce, shredded cabbage, celery, nuts in unflavored gelatin.
5. Cream cheese, marshmallows and crushed pineapple folded into whipped cream and chilled until firm.
6. Tomato juice cocktail, and lemon flavored gelatin, plain or with celery, carrots, green peppers and onions.
7. Jellied chicken, crab meat or lobster, celery, pimientos and olives.

Fruit Salad Platters

1. Apple sections, orange slices, banana wedges, grape clusters, pineapple chunks, garnished with dates and cream cheese balls.
2. Apricot halves stuffed with cottage cheese, ring of peach slices with maraschino cherry cluster, grapefruit sections with avocado pear slices.
3. Blue plums surrounded with pineapple rings cut into halves, pears filled with cream cheese and nuts, orange sections and dates.
4. Pineapple wedges, whole strawberries and frosted grape clusters.

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