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# Principles of Jelly Making

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## INTRODUCTION.

Since the process of jelly making in the home is so often attended by uncertain and disappointing results, it would seem desirable that every housewife who makes her own jelly, should give some thought to the principles involved.

Jelly cannot be made "by rule of thumb," yet there are some essential points which, when recognized by the housewife, enable her to work more intelligently with fruit juice.

## PRINCIPLES OF JELLY MAKING.

### CHARACTERISTICS OF GOOD JELLY.

A fruit jelly should be of a good color, a transparent mass which will quiver, not flow, when taken from the mould, with texture so tender that it may be cut easily with a spoon, and yet so firm that the angles produced by cutting retain their shape.

### ESSENTIAL CONSTITUENTS.

To make jelly it is necessary, according to Miss N. E. Goldthwaite, research assistant at the University of Illinois, to have fruit juice containing both acid and pectin. Pectin, a substance resembling starch, is contained in almost all fruits, but in some, like the pear, there is so little that good jelly cannot be made from them under ordinary household methods of treatment. The amount of pectin in fruit varies with the stage of maturity, under-ripe fruit rather than over-ripe being best for jelly-making. Although found throughout the fruit, pectin is more abundant in the peel, and for this reason it is better not to pare the fruit. Fruits deficient in acid, such as peach and sweet apple, do not yield good jelly without the addition of acid.

### PROPORTION OF SUGAR TO JUICE.

Jelly can be made without adding sugar to the fruit juice, but it requires about six times as much juice for the same amount of jelly as when sugar is used, and the product is tough and unpalatable. From the standpoint of both economy and palatability, therefore, sugar is a very desirable accessory.

The correct proportion of sugar for fruit juices that are rich in pectin and fairly acid, usually varies from three fourths as much sugar as juice to equal parts. Cur-

rants, loganberries and grapes generally make the best jellies when equal amounts of sugar and juice are used. For apples, red raspberries, blackberries, crabapples, and cranberries, three-fourths as much sugar as juice is more likely to be the correct proportion.

### PROCESS.

Juices for jelly making should be extracted by cooking with a small quantity of water. If fruit is very juicy, as currants and raspberries, add just enough water to prevent burning and mash the fruit as it is heated. If the fruit is less juicy, as apples and quinces, wash, cut in small pieces, almost cover with water, and proceed as with the more juicy fruits.

When well cooked, transfer to a jelly bag or square of double cheese cloth, which has been wrung out of hot water, hang up and allow to drain. A second extraction of juice may be made thus: Place the pulp in a pan, cover with water, bring slowly to a boil, and drain as before. With grapes this may be done still another time. The second and third extractions may make better jelly than the first, because they will be free from the acid potassium tartrate crystals that so often appear in the jelly made from the first extraction of grape juice.

It has been found by experiments that the best results are obtained if the sugar is heated and added to the boiling juice after it has boiled about one-half of the entire length of time. To test the juice, allow it to drop from the stirring spoon. When the drops jell and break off, remove the juice at once. This method is better than the old one of taking out a portion in a saucer and allowing it to cool; for while it is cooling the juice in the saucepan may become overcooked. Scum that appears on

the surface should be removed. When the liquid foams, it should be watched carefully, as it will soon be done. Boiling should not be allowed to proceed too rapidly; neither should the juice simmer for a long time, as both methods have a tendency to destroy the gelatinizing power of the pectin.

It is better not to cook too much juice at one time—not more than enough for four or six glasses. When boiled enough, pour immediately into sterilized jelly glasses and cover with hot paraffin. Keep in a cool, dry place.

When poor jelly results, it may be due to one of several causes, the wrong proportion of sugar, overcooking, undercooking, lack of pectin or lack of acid. It is better to err on the side of too little, rather than too much sugar. If too much sugar has been used so that the juice will not give a good jelly, the remedy is to boil the product with more juice.

When a failure is made, the housewife should try to analyze the situation to determine the cause. If the product is a thin juice and not syrupy, she may rightly attribute the failure to undercooking, lack of pectin or lack of acid. If the product is syrupy, it has probably been overcooked or too much syrup in proportion to juice has been used, or the fruit has lacked acid or pectin.

If the mixture has cooked for a long period of time, it is quite probable that it has been overcooked; if the fruit was over-ripe, there may have been a lack of acid and pectin; and if the cores and parings were removed before cooking, there may be merely a lack of pectin. If too small an amount of sugar has been used, the product may be tough.

A good jelly may be made from an over-cooked product by combining it with more

fresh juice and by adding more sugar in proportion to the amount of fresh juice.

The remedy for undercooked jelly is, of course, to bring it to a boil again, watching carefully and testing frequently. If juice will not coagulate because of lack of acid, it may be combined either with the juice of sour fruit or with some organic acid, such as citric acid found in lemon juice or tartaric acid. A fair rule is to add enough of the acids to make the juice about as acid to the taste as sour apples.

If the juice is deficient in pectin, it should be combined with the juice of some fruit very rich in pectin, such as unripe apples or quinces.

Score card for judging jelly.

Flavor .....	35
Texture—	
Tenderness .....	15
Consistency .....	20
Color .....	15
Clearness .....	10
Surface .....	5

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