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Packing Apples and Peaches

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West Virginia University Agricultural Experiment Station

MORGANTOWN, W. VA.

DEPARTMENT OF HORTICULTURE

Packing Apples and Peaches



W. H. ALDERMAN

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*Packing Apples and Peaches

INTRODUCTION.

When the entire fruit product of a section is disposed of locally the marketing problems are few and comparatively simple, but when the supply exceeds the demand and growers are forced to sell their fruit in distant markets, the problems multiply and become intensely complicated. Packages that will stand rough handling and railway shipment must be used. They must be neat, cheap and attractive, for where the grower is unknown to the buyer both he and his ware are invariably judged by the appearance of the latter. In the keen competition of the open market the well packed box, barrel or basket always sells at the top of the market, while carelessly packed fruit of better quality will bring only an indifferent price.

In order to convey to fruit growers of the state a few suggestions along the line of packing apples and peaches, this bulletin is prepared. It is a fact long since established that West Virginia fruit is excelled by none in quality and appearance, but unfortunately this fact is not always appreciated because of poor packing. A lesson can well be taken from the apple growers of the West; not that all fruit should be packed in boxes but that only good fruit and that of a uniform quality should be packed in any package, whether barrel or box. Nothing is more discouraging than the loss of legitimate profits, or a major portion of them, on a crop of fruit that has been produced at a considerable expense, because unattractively presented to the market. To be sure "clothes do not make the man" but they do make an impression on strangers.

APPLE PACKING.

Proper Picking Essential for Perfect Packing.

It frequently requires a nice judgment to determine the proper time for picking apples. If picked too soon the fruit will be undersized and poorly colored, thus injuring seriously both its quality and appearance in the package. If allowed to hang on too long, its keeping quality is impaired and danger of loss by high winds is multiplied. No definite rule can be laid down as to time of picking. When the fruit, on being twisted one-half around will snap cleanly from the spur without breaking the stem, it should be picked. Red apples are usually picked when they have assumed a normal color, and yellow apples when they have attained the proper size and the seeds become browned. There are great differences, however, between varieties. The Jonathan must be picked as soon as colored or it will not keep in storage, the Red Astrachan becomes mealy and often cracks when left for even a day or two after coloring, the McIntosh will drop unless picked promptly while Rome and some others may be allowed to hang with impunity.

The manner of picking is also important. The picker who through undue haste, carelessness or indifference pulls off leaves and fruit spurs should not be tolerated in the orchard. Not only will the broken twigs break the skin of the fruit and allow free access to rot fungi, but the increased expense required to grade and pack such fruit is an important item. Whether a pail, basket, picking apron or bag is used by the picker is a matter of personal preference and severe bruising of the fruit with any of these is inexcusable,—the mark of a careless and slovenly worker. When pails or baskets are used the greatest danger of bruising comes in pouring the fruit on the packing table, while with the picking bag and apron the danger comes from striking against the ladder while ascending or descending.

Box Versus the Barrel.

There has developed among eastern fruit growers in recent years a decided tendency to adopt the box, the universal apple package of the far West. This movement in the East has resulted in a vigorous controversy regarding the relative advantages of box and barrel.

In the opinion of the writer there should be no argument about a matter in which both sides are right. The barrel for the marketing of the bulk of our fruit presents advantages that make it indispensable. Its cheapness, strength and ease of packing recommended it highly to the man who must handle large quantities of medium grade fruit or who must depend upon inexperienced men for his packers. On the other hand the grower who is producing fancy fruit and growing varieties of well-known high quality finds the barrel not adapted to his needs. His apples are used for dessert purposes. They are tender, fine-grained and delicately colored, consequently their flesh is easily bruised and their appearance marred. He needs a package that will carry each individual apple to its destination without injury and will make an attractive appearance upon opening. For this man the box is decidedly a valuable acquisition.

The question then seems to resolve itself into what varieties are adapted to box packing and what ones ought to be packed in the barrel. The varieties that are primarily cooking apples—lacking the high quality of dessert fruit—should unquestionably be marketed in the barrel. The consumer cannot pay a fancy price for them nor can the grower afford to go to the expense of careful grading, wrapping and packing in boxes. With varieties such as Grimes, Yellow Newtown or Delicious, the producer can well afford to take more care, knowing that the demand for fancy fruit of that kind is constant and the price excellent.

In the following list an attempt is made to classify the varieties into box or barrel stock, the decision in each case being based on the quality and appearance of the fruit. It will be noted that some are adapted to both styles of package.

Box Fruit	Barrel or Box	Barrel
Grimes	Rome	Ben Davis
Jonathan	Arkansas (Mammoth	*York Imperial
Winesap	Black Twig)	Gano
Stayman Winesap	Baldwin	Willow Twig
Delicious	Wealthy	Fallowater
Yellow Newtown	Winter Sweet Paradise	
Yellow Transparent	Oldenburg	
Akin	Northwestern Greening	
McIntosh		

There seems to be an erroneous impression that only the largest and most perfect specimens should be sorted out of a crop to be packed in boxes, thereby considerably reducing the value of the remainder. The requisites for first class fruit are good color, freedom from blemishes and a uniformity in size, be that size large, medium or small. In box packing, the fruit must be carefully graded as to size, a quarter of an inch variation in diameter being the extreme limit.

BARREL PACKING.

The Standard Barrel.

Congress has recently passed a much needed measure regulating the size of apple barrels for all states. It specifies that the length of stave shall be $28\frac{1}{2}$ inches, diameter of head $17\frac{1}{8}$ inches, distance between heads 26 inches and circumference of the bulge 64 inches outside measure. All barrels not coming up to this standard shall be so marked. The act also provides three standard grades of apples with minimum sizes of $2\frac{1}{2}$, $2\frac{1}{4}$, and 2 inches respectively. The fruit in any of these grades must be sound, well colored, and of a normal shape. Any barrel marked "Standard Grade" must also be plainly marked with minimum size of fruit, name of variety, locality grown and name of grower or packer. This act becomes effective July 1, 1913. Nothing is said about the material of which the barrel is made but it should be understood that this ought to be of lumber fairly free of knots and cross-grain. A hard, tough wood like elm makes the best barrels but much latitude is allowed in the choice of material.

*The shape of this variety makes it difficult to pack in boxes.

Packing Table.

The table shown in figure 23 is well adapted for use either in the orchard or packing house. The table in the illustration is 6 feet long by 4 feet wide, sides 8 inches high. Slats in the bottom of the bed are 1 inch square and are spaced



FIG. 23.—A handy packing table.

1 inch apart. The legs at the lower end are 39 inches long, allowing the bottom of the bed to clear the top of the barrel. The legs at the upper end are 45 inches, giving a 6 inch pitch to the table. The apples can easily be inspected as they roll into the apron and imperfect ones thrown out. When the apron is filled it can be slowly lowered into the barrel without bruising the fruit. This packing table may be mounted on wheels for convenience in orchard work or may be built larger with two funnels allowing two barrels to be filled at once.

Facing the Barrel.

To face a barrel properly requires some skill and care in selecting fruit. The object of facing is to give the barrel an attractive appearance when opened and not, as is too often the case, to deceive the purchaser. The fruit used should represent, as far as size is concerned, the general run of the whole barrel. The mistake is too often made of picking out all of the largest apples for facers. These are frequently

poorly colored and do not make as good an appearance as the medium sized, better colored specimens. All the face apples should be of uniform size and well colored. Beginning on the outer edge they should be arranged stem down in concentric circles until the head is covered. Care should be taken to select fruit that will just fill up the circles without leaving any spaces or requiring any to be placed on edge. When the center is reached it should



FIG. 24.—Arrangement of the face when the apples run from three to three and one-eighth inches in diameter.

be filled with either one, three or four apples (figs. 24 and 25.) Never use a large or small apple to fill out the center space as it would spoil the looks of the whole face. By selecting apples measuring three to three and one-eighth inches in diameter the outer circle may be filled with fifteen apples, the second ring by nine and three will fill the center (fig. 24). The next smaller size that can be used measures two and three-quarters to two and seven-eighths inches in diameter. It will take seventeen of these to fill the the outer circle, eleven to fill the second and four to fill the center. (fig. 25). A size of fruit intermediate between these two could not be used. Many growers face all their barrels using only these two sizes.

In case the fruit runs smaller than either of these two sizes one must select that size which will make three circles and leave the center to be filled with one apple. In the case of very large apples like Fallawater they may be arranged in two circles with a space in the center to be filled with one apple. Only one layer of facers is necessary but one should place over the interspaces of this layer a few fruits with their colored sides down. When the barrel is opened a solid mass of color should greet the eye.



FIG. 25.—Arrangement of the face when the fruit measures two and three-quarters to two and seven-eighths inches in diameter.

Filling and Tailing the Barrel.

The filling of the barrel should be accompanied by vigorous shaking after every half-bushel of fruit has been added. This settles the fruit into its permanent place so that there will be no loosening and rattling after the barrel is packed. When the barrel is nearly filled the upper layer must be arranged by hand to form a level surface against which the head may press. This operation is known as "tailing". The barrel should be filled an inch or more above the chime to allow for shrinkage and to tighten the fruit in the barrel when the head is pressed into position.

Papering the Barrel.

A circle of plain or laced white paper placed in the bottom of a barrel before the facers are laid will add greatly to its attractiveness. (fig. 26). If in addition a layer of corrugated paper or an excelsior pad is placed under each head it greatly diminishes bruising. The expense is slight, laced paper costing \$6 per thousand, and corrugated paper \$7, small items that greatly increase the effectiveness of the package.

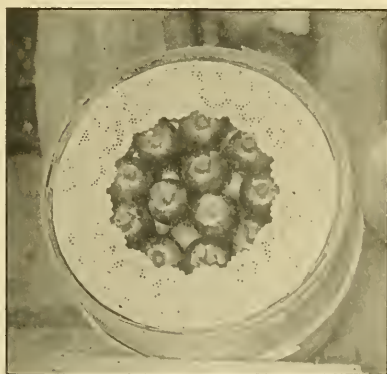


FIG. 26.—A circle of laced paper over the face adds greatly to the attractiveness of the barrel.

Barrel Press.

Several types of screw and lever presses are on the market. The requisites of a good press are strength, durability, power, simplicity and compactness. The lever presses are more rapid to operate than the screw type which is being used less and less. The iron circle used on some presses to force the head



FIG. 27.—A good type of barrel press.

to place is usually in the way of the operator, a single wooden block extending crossways of the head being far more convenient. An excellent press is shown in figure 27. If the press has to be carried about the orchard frequently it may be made much lighter by turning up the bottoms of the iron uprights in the form of a hook to clamp under the edge of the barrel and discarding the heavy base.

Remove the Fruit from the Orchard.

The fruit should be transferred from tree to storage as rapidly as possible. If the packing is to be done in the orchard the fruit should be picked and placed directly upon the packing table. Never place it in piles upon the ground to be packed later. This not only entails extra handling and increased cost but gives the fruit a dull, dead appearance and seriously impairs its keeping qualities. When the packing is done in the storage or packing house the fruit should be hauled directly to the building as soon as picked. In this case it is well to let it cool over night before packing.

BOX PACKING.

Boxes.

With the box unlike the barrel there is no standard size required by law. After experimenting with several shapes and sizes however, the growers have very generally adopted two boxes that seem to answer all purposes. These are the "standard" and the "special" with inside dimensions of $10\frac{1}{2}$ x $11\frac{1}{2}$ x 18 inches and 10 x 11 x 20 inches respectively. In order to pack all sizes of fruit it has been found necessary to use both boxes. It would be impractical to adopt any one size of box and require all apples to be packed in it.

Box Material.

If the box is to be an attractive package it is necessary to get clean, bright lumber, free from knots. Spruce and pine are two common timbers used and make very satisfactory boxes. The best boxes are made of one piece ends $\frac{3}{4}$ inch thick, one piece sides $\frac{3}{8}$ inch thick and two piece tops and bottoms from $\frac{3}{16}$ inch to $\frac{1}{4}$ inch thick, depending upon the strength of the material. A slightly cheaper box and yet a very serviceable one is made of two piece ends and sides, the two parts being united with a Linderman joint and securely glued. If care is taken in setting up the box to see that the joints of sides and ends do not come together it makes a very strong box. All box material should be dressed at least on the outside. Boxes are usually purchased in the knocked-down form and are made up when desired, the price ranging from \$13 to \$18 per hundred. The nails used should be cement coated to prevent pulling out, and of the five-penny or six-penny size. A small cleat is used for nailing down the ends of the tops and bottoms. It is well to soak these cleats before using to prevent splitting. Four nails are used to each cleat and four at each end of the side pieces. (Fig. 32.)

Several boxes made of veneer material are being placed on the market. All that have come under our observation have been inferior in appearance, durability and strength. The greatest objection is in the ends. These are usually composed of a frame of $\frac{3}{4}$ inch material to one side of which is nailed a thin veneer. These frames are too light to hold the nails for the tops, bottoms and sides and will almost invariably split at some point during the nailing. The nails will frequently project through the frame to tear the hands or clothing as the box is being handled. If the box becomes damp the veneering is apt to warp out of shape. As small pieces and waste material are utilized in these boxes they are usually cheaper than those made of sawn lumber.

Lining Paper.

To better protect the fruit and keep it clean the boxes are lined on bottoms, tops and sides with plain white paper of the ordinary news grade. Two papers are used to each box and these vary in size according to the size of the box. For the standard box paper cut $17\frac{3}{4} \times 26$ inches is used and for the special $19\frac{3}{4} \times 26$ inches.

To line the box a paper is placed in it in such a way that it reaches about two-thirds across the bottom, comes up the side and is bent back over the outside of the box. Another paper is placed on the opposite side in a like manner, overlapping the first on the bottom. When the box is packed the two loose ends hanging over the sides are brought together so they over-lap on top of the fruit. When the cover is nailed in place the thin bottom boards spring down (fig. 32). In order to guard against tearing the lining paper a fold or plait is made in it at the lower corners to allow for this bulge. Some packers secure the necessary slack by jamming the paper outward in the crack between bottom and side boards. The cost of lining paper is about \$2.50 per thousand.

Layer Paper.

Layer paper is placed in the bottom and top of the box between the lining paper and the fruit. It is some times used between the layers of fruit when they otherwise do not come quite high enough in the box. It is made of ordinary manila tag board $19\frac{1}{2} \times 10\frac{1}{2}$ inches for the special, and $17\frac{1}{2} \times 11$ inches for the standard boxes. The cost of this paper runs about \$5 per thousand.

Wrapping Paper.

It is advisable to wrap all boxed fruit. The wrapper protects the fruit from bruising, makes it easier to pack, keeps it clean, prevents the spread of decay from one fruit to another and makes a more sanitary package. The additional cost of wrapping is slight in proportion to the advantages derived from it. Unless he wraps his fruit, the beginner will have great difficulty in putting up a firm, tight pack.

The wrapping paper used is of light manila, smooth or glazed on one side and rough on the other. The rough side being next to the fruit readily absorbs any moisture that may appear on the surface and the glazed side more effectually prevents the entrance of moisture, dirt and germs from the outside. The size of the wrapper varies with that of the fruit. For very large fruit 11 x 11 inches is used, for medium to large 10 x 10 inches and for small stock 8 x 8 inches or 9 x 9 inches. Strength and lightness are essential to a good wrapping paper. Some papers are so tender that it is difficult to wrap a fruit without tearing them. A good grade of paper should be purchased for 30 to 50 cents per thousand, depending on the size. Some growers have their name or brand stamped upon each wrapper.

Wrapping the Apple.

To wrap an apple smoothly without the waste of unnecessary time or motion requires considerable practice although the operation in itself is simple. Very few packers use exactly the same movements in wrapping. Some fail to make a smooth well finished wrap through failure to observe some minor details and others fail to acquire speed through failure to reduce lost motion. As an aid to the beginner a detailed description of one method of wrapping is given. This wrap when properly made leaves no loose ends and can be rapidly executed. The entire process of wrapping is graphically shown in the accompanying illustration. As indicated in No. 1 (fig. 28) the paper is held in the left hand with the thumb and little finger pointing towards opposite corners. A rubber thumb stole which can be purchased at almost any drug store is worn on this hand to aid in picking up the paper. The apple is dropped or thrown with some force into the center of the paper (No. 2 fig. 28) and the thumb is brought up as far over the apple as possible bringing in the corner of the paper with it. If the fruit is to be packed on end it should be dropped blossom end down. If dropped stem down the stem would

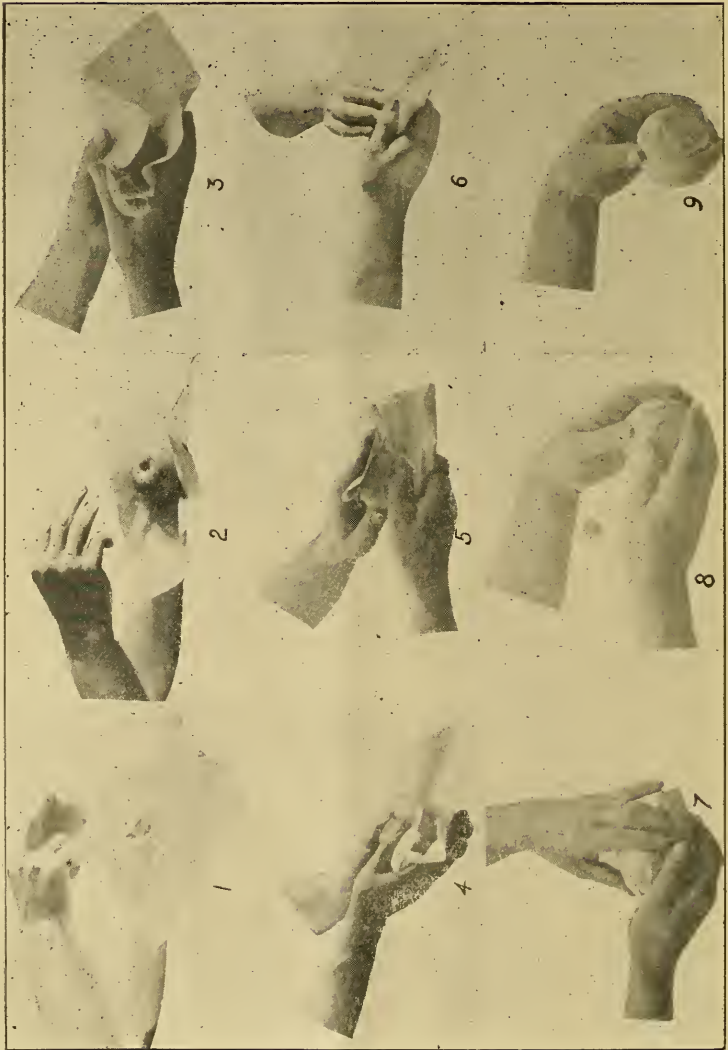


FIG. 28.—Several positions assumed in wrapping an apple.

tear the paper. To be packed on the side it should rest in the hand on its side. The next movement is made with the right hand as it gathers a second corner between the extended thumb and first finger and folds it in with a sliding forward and upward motion of the hand (No. 3 & 4 fig. 28). The fingers of the left hand now sweep upward and backward bringing in a third corner (No. 5 & 6, fig. 28). This last movement (No. 6 fig. 28) leaves the apple firmly gripped in the left hand. This hand should roll the fruit from the packer using the curved palm and fingers of the right hand as a bed (No. 7 & 8, fig. 28). This folds in the fourth and last corner where it is caught and held in place by the fingers of the left hand. The apple is now held between the thumb and first three fingers of the left hand in the exact position in which it should be placed in the box. (No. 9, fig. 28).

The Packing Table.

The most common type of packing table is shown in figure 29. The sides of the bed are made of six inch boards four



FIG. 29.—A packer at work.

feet long. The boards at the ends of the bed project out from the corners one foot to afford rests for the boxes, thus making the actual size of the table three by four feet. Two other boards four feet long are nailed across the bottom and project out one foot completing the rests for the boxes. The legs are three feet in length and should be well braced for orchard work. The top of the bed should be covered with canvas or strong burlap. It is a good plan to use a double layer of canvas and have the upper one fastened only at one side to enable the packer to readily shake off dirt and leaves that will accumulate. The table shown in the cut is designed for right handed packers. A left handed packer would need to have his box rests on the reverse corners.

The position of the packer at work is indicated in figure 29. The paper is conveniently held at his left in a small hook hooked over the edge of the box. The fruit is at his right where it may be selected and picked up in the right hand.

Packing the Box.

In figure 30 are shown two styles of packs, the square and diagonal. Of these two the latter is much to be pre-



FIG. 30.—Method of starting the square and diagonal packs.

ferred. The square pack which was formerly in very general use has been discarded except for an occasional size or shape that will not come out right packed diagonally. The objections to the square pack are that the apples of the second layer are placed directly over those in the first layer and are liable to bruise. The spaces left between the fruits are too large. In the diagonal pack the apples in the second layer fit into the spaces or depressions between the fruits of the first layer making a firm, tight pack with small danger of bruising. The diagonal pack shown at the right of figure 30 is known as the 2-2 pack and the box in center of the cut is called the 3-2 pack, the numbers referring to the number of apples in the cross rows. The packs are further distinguished by the number of apples in the rows running lengthwise. The rows in the 2-2 pack may be of equal length or two of them may contain an apple each more than the other. Thus to more fully describe the pack one would say 2-2, 6-6, or 2-2, 6-7 indicating that in each layer there are in the first instance 4 rows with six apples in each row making a total of 24. In the second pack indicated there are 4 rows two of which contain 6 apples and 2 contain 7 making a total of 26.

To start the 2-2 pack place the first apple in one of the lower corners of the box. The second apple should be placed about midway between the first fruit and the opposite side. The third and fourth fruits are placed in the spaces between the first and second. These first four apples should be carefully packed and the rest of the layer fills easily. In starting the second layer, place the first fruit in the corner space next to apple number two of the first layer. The 3-2 pack is started by placing an apple in each lower corner and one midway between them. In the two spaces between these three apples the fourth and fifth fruits are placed. It is of the utmost importance that the apples in each row be kept tight endways. A good test as to this point is to set the box on end after the first layer is in place. If the fruit falls out it has not been packed tight enough. Care should also be taken to get the rows straight both lengthways and diagonally. A carelessly packed box will rarely sell for enough to pay for the expense of packing, so poor will be its appearance on the market in comparison with well packed fruit. A well packed and a carelessly packed box are contrasted in figure 31.

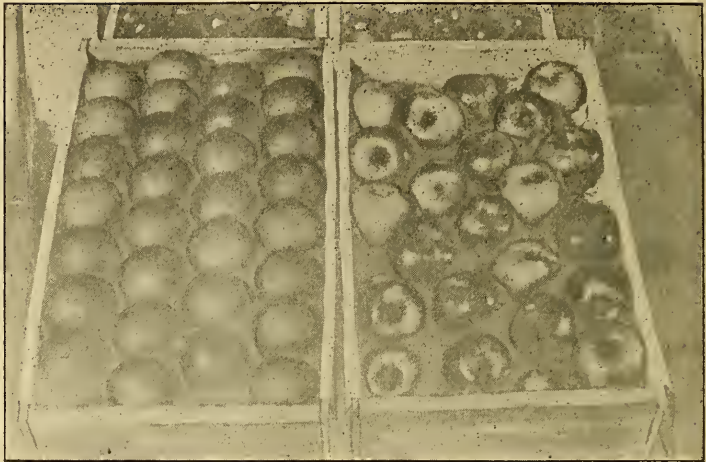


FIG. 31.—Good packing pays. The box on the right is not attractive and will not stand shipment.

Box Packing Table.

Diameter of fruit	Style pack	How packed	No. apples per row	No. layers	No. apples in box	Bo
2 $\frac{5}{8}$ in.	3-2 diag.	flat	7-7	5	175	Speci
2 $\frac{5}{8}$ in.	3-2 "	"	7-6	5	163	Standar
*2 $\frac{3}{4}$ in.	3-2 "	"	6-6	5	150	Standar
*2 $\frac{3}{4}$ in.	3-2 "	"	6-6	5	150	Speci
2 $\frac{7}{8}$ in.	3-2 "	"	5-5	5	125	Standar
†3 in.	2-2 "	side	7-7	4	112	Speci
3 $\frac{1}{8}$ in.	2-2 "	"	7-7	4	112	Speci
3 $\frac{1}{8}$ in.	2-2 "	"	7-6	4	104	Standar
*3 $\frac{1}{4}$ in.	2-2 "	"	6-6	4	96	Standar
*3 $\frac{1}{4}$ in.	2-2 "	flat	6-6	4	96	Standar
3 $\frac{3}{8}$ in.	2-2 "	"	5-5	4	80	Standar
3 $\frac{1}{2}$ in.	2-2 "	"	5-4	4	72	Standar
3 $\frac{5}{8}$ in.	2-2 "	"	4-4	4	64	Standar
3 $\frac{3}{4}$ in.	2-2 "	"	4-3	4	56	Standar
3 $\frac{3}{4}$ in.	3 straight	side	6-6	3	54	Speci
3 $\frac{7}{8}$ in.	3 "	"	5-5	3	45	Standar

In the above table one of the most noticeable features is the division into groups that are packed flat (on end) and on the side, these groups being divided according to size. Apples under three inches in diameter are packed flat, apples from three to three and one-quarter inches are packed on the side, all from three and one-quarter to three and three-quarter

*Standard preferable.

†Pack 4 to 6 apples flat at the alternate ends of each layer.

ers are packed flat, and all above three and three-quarters
 re packed on the side. The three inch apple is an extremely
 awkward size to pack in either box, but if necessary can be
 packed in the special. In practice it is customary to grade
 the fruit with variations up to a quarter of an inch, so the
 three inch fruit may be placed with the $2\frac{7}{8}$ or $3\frac{1}{8}$ grades.
 It will be noticed that the smaller apples may be
 packed in either box but the larger ones will usually pack
 well in only one size. This shows the necessity of having
 both sizes on hand.

The Bulge.

To prevent the fruit becoming loose in the box, it is
 packed an inch and a half higher in the middle than on the
 ends. When the box is placed on the press and the top nailed
 down this inch and a half bulge is distributed between top
 and bottom making three-quarters of an inch bulge on both
 sides. (fig. 31.) It usually troubles beginners to get this
 bulge but if they will remember to keep the pack tight end-
 ways and to keep the ends of the layers down as much as
 possible the bulge
 will usually come
 naturally. In some
 cases it is necessary
 to select fruit of
 slightly different
 shape to raise the
 center, or when pack-
 ing on the side one
 may lay a few flat at
 the opposite ends of
 two or more layers.
 The bulge is more
 difficult to get on
 the square pack than
 on the diagonal.

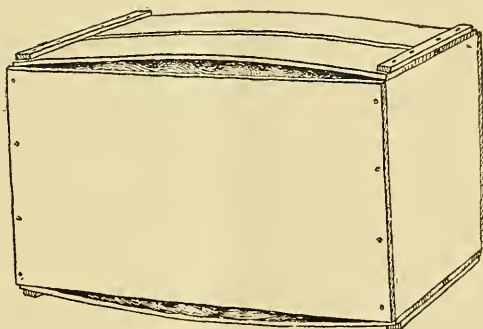


FIG. 32.—Box showing proper bulge. (From Cornell Bulletin 298.)

The Box Press.

After the box is packed it is taken to the press. There
 are several types of presses but the one shown in figures 32
 and 33, is as simple and serviceable as any, and has the added
 advantage of being easily made at home. The four legs are two
 by fours cut two and one-half feet long. The bed piece is a two

inch plank of hard wood four feet long and twelve inches wide. The cross cleats are arranged to accommodate both the standard and special boxes, the two inner cleats being about eighteen inches apart and the two outer twenty. This allows the boxes to project over the cleats three-quarters of an inch at each end. The iron clamps may be made by any blacksmith and should pass through the lower plank to which they are attached by means of an iron pin inserted through

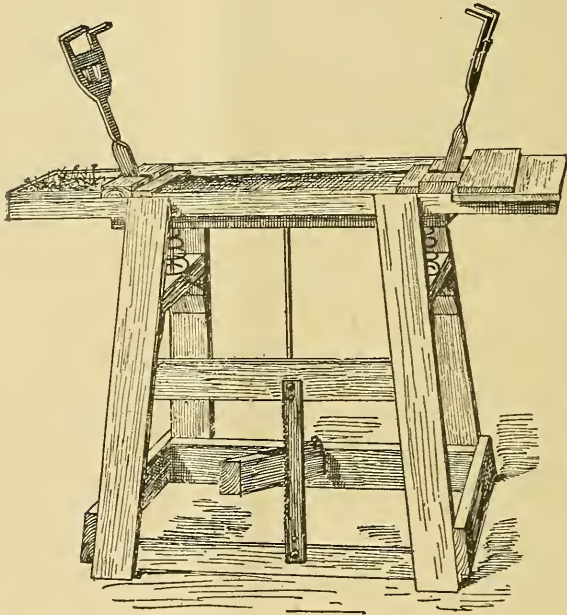


FIG 33.—A serviceable box press. (Adapted from Bulletin 19, Dairy and Cold Storage Commissioner's Series, Ottawa, Canada.)

a hole in the plank and clamp. It is well to have several holes with half inch intervals in the clamps to enable the operator to adjust them to the proper height for any box. The coil springs throw the plank up and loosen the clamps when the pressure is released. When the pressure is applied to the ends of the covers the bulge is distributed about equally between bottom and top. Four nails driven through each cleat are sufficient to hold the cover in place.

Labelling the Box.

An attractive label pasted on the end of the box aids materially in marketing the product and if used persistently becomes a valuable advertising agent. The label should not be of the gaudy circus poster style but should give some in-

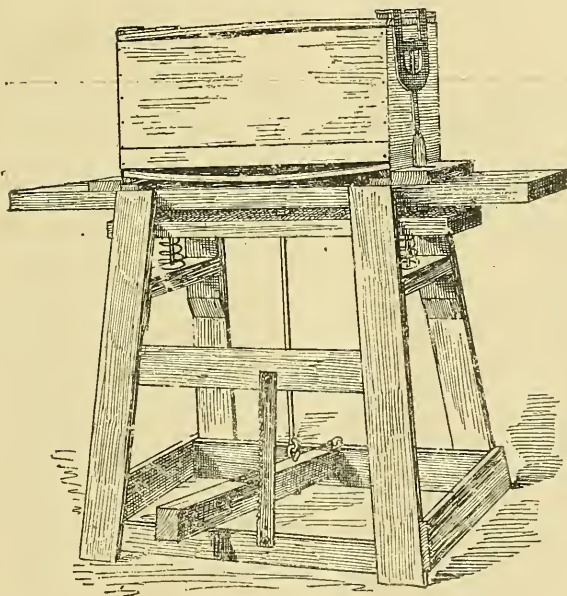


FIG. 34.—Box press with box in position. (Adapted from Bulletin 19, Dairy and Cold Storage Commissioner's Series, Ottawa, Canada.)

formation such as the grower's name, variety of apple and number of fruits in the box. The number of apples in the box should be marked on it by the packer before the cover is nailed on to guard against mistakes.

Peach Packing

Two types of packages have been used in West Virginia for marketing peaches, the Delaware basket and the Georgia carrier. The Delaware basket is shown at the left and the Georgia carrier at the right of figure 35. As both barrel and



FIG. 35.—The Delaware basket and Georgia carrier. The growers should make use of both.

box are necessary to market all grades of apples so these two peach packs are essential for the most economical handling of the peach crop. The carriers should be used for all the first grade and fancy stock, while the Delaware basket is well adapted to the cheaper grades.

Packing Table.

A very convenient packing table is made by building a long bed three feet wide and six inches deep. This should be covered with canvas like the box apple packing table. It should be divided up into three foot sections by running cross pieces from side to side just under the canvas. The

supporting legs should be three feet long. On either side of this table there should be a ten inch shelf about ten inches below the top of the table. This enables the pickers to place their baskets of fruit as it comes from the trees on one shelf where it may be sorted by the graders who place the various grades into different sections of the packing table. The packers work on the opposite side of the table with their empty carriers before them on the shelf on their side of the table.

Packing.

The Delaware basket is so well known and so easy to pack that an account of it would be out of place in this publication. The points to be remembered are, to use a uniform grade of fruit and to fill the basket well up to guard against shaking and bruising of the fruit during transportation.

The Georgia Carrier.

The six basket Georgia carrier is rather more difficult to pack and requires some explanation. As shown in figure 35, this package is only a crate in which six baskets or cups are placed in two tiers, three in a tier. A thin board partition with cleats prevents the upper tier from crushing and bruising the lower baskets. The whole is covered with a light cover making a compact, easily handled, closely packed package. It has an advantage over the Delaware basket in that it may be packed to better advantage in a wagon or car and will stand shipment better.

In packing the individual cups the "diamond" or diagonal pack is used. The square pack--where one fruit lies directly over another causes too much bruising. The principle of the diamond pack lies in the fact that no one peach rests on another but in the depression between two peaches. Figure 36

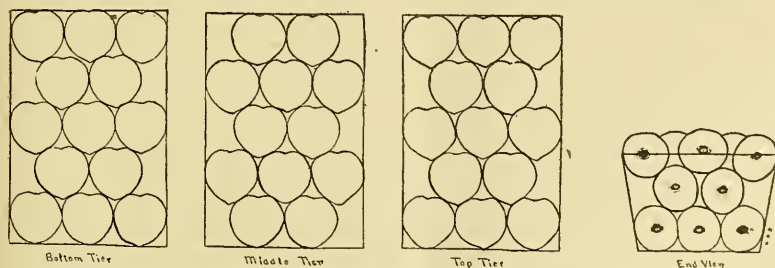


FIG. 36.—3-2 diamond pack for small peaches. (Drawing by W. R. Ballard, Maryland Agricultural Experiment Station.)

shows a diamond pack for small peaches. This is known as the 3-2 pack. Three peaches are placed in the end of the cup, then in the spaces between them two more are placed. This leaves three spaces for the next row. In the second tier two peaches are placed at the end to alternate with the fruit in the first tier. The third tier alternates with the second. Figure 37, shows a medium sized peach packed in

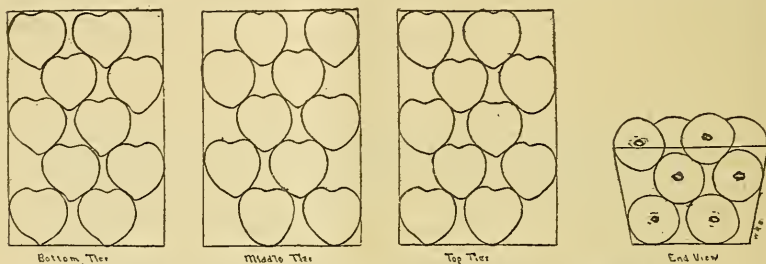


FIG. 37.—2-2 diamond pack for medium sized peaches. (Drawing by W. R. Ballard, Maryland Agricultural Experiment Station.)

the carrier cups. In this case the 2-2 pack is used, two peaches being placed at the end of the basket and two more being put in the spaces left by the first two and so on till the bottom is covered. The second tier alternates with the first and the third with the second. To pack a large sized peach a 2-1 pack is used. Two peaches are placed in the end of the basket, one in each corner. In the space between the two a single peach is placed and on each side of this peach two more are packed and so on till the tier is filled. (fig. 38). Only

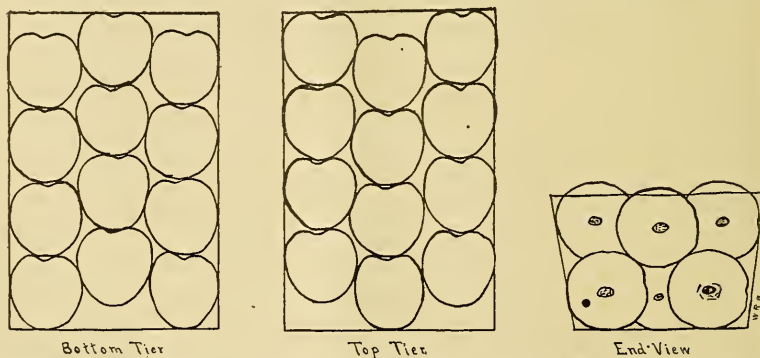


FIG. 38.—2-1 diamond pack for large peaches. (Drawing by W. R. Ballard, Maryland Agricultural Experiment Station.)

two tiers are required to fill the basket with this size stock and the second layer alternates with the first. In each case the peaches should all point the same way.

In all these packs the fruit comes well above the edge of the basket. This is essential to keep a tight pack. When the cover is placed on the carrier it gives a bulge similar to that of an apple pack. This spring in the boards aids in keeping the fruit from shaking about in shipment. Each carrier should be marked with the variety of peach, grade, and the distinctive label of the grower.

For extra fancy stock it might pay to wrap each peach in paper. This adds to the expense of packing but insures the product reaching the market in first class condition. For long shipment it would probably pay well to wrap the fruit.

No matter what style pack is adopted it always pays to use uniform fruit, pack it firmly, and to use a neat attractive label that gives the purchaser information as to what is in the pack and where to send for more of the same kind of fruit.

**LIST OF MANUFACTURERS AND DISTRIBUTERS
OF BOXES, BARRELS, BASKETS, PACKING
PAPERS, LADDERS, PRESSES, ETC.**

General Packing Supplies.

Coles and Company, 109-111 Warren St., New York, N. Y.
 Bacon and Company, Appleton, N. Y.
 G. P. Reed, 199 Duane St., New York, N. Y.
 South Side Mfg. Co., Petersburg, Va.
 Marietta Fruit Package & Lumber Co., Marietta, Ohio.
 Webster Basket Company, Webster, N. Y.

Barrels.

Leon Miller, Williamsport, Pa., and Waynesboro, Va.
 Edwin Bell Company, Pittsburg, Pa.
 Grief Bros. Co., Cleveland, Ohio.
 Shenandoah Lumber Company, Charles Town, W. Va.
 R. S. Newbraugh, Inwood, W. Va.
 P. McKanna's Sons, Honesdale, Pa.

Apple Boxes.

Montgomery Bros. Box Co., Court and Wilkeson St.,
 Buffalo, N. Y.
 Hart-Clohan Lumber Company, Martinsburg, W. Va.

Packing Paper.

George Irish Paper Co., 21-23-25 River St., Buffalo, N. Y.
 Hinde & Dauch Paper Co., Sandusky, Ohio.
 American Paper Products Company, 251 Bremen Ave.,
 St. Louis, Mo.

Ladders.

Bacon and Company, Appleton, N. Y.
 Rothwell and Co., Martinsburg, W. Va.





