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PRODUCT DESCRIPTION LANGUAGE - PEARS

WHAT IS A PRODUCT DESCRIPTION LANGUAGE ?

A Product Description Language (PDL) is a set of photographs and definitions used to describe a product. It focuses on the key quality characteristics of a product and describes them in a way that is readily measured. In this way a PDL can be used by growers, packers, processors, wholesalers, exporters and retail customers to identify what quality attributes are important to them. It also gives the opportunity to specify and negotiate what style of blemish, colour, shape, sweetness or other parameter is available to supply or acceptable to purchase.

WHAT IS THIS REFERENCE GUIDE ?

First, it is worth noting that the Export Control Orders Schedule 12 for pears is no longer enforceable.

Second, quality systems of the type that many pear packers are implementing require a clear understanding of what the customer wants, and a clear knowledge of your ability to supply. To do this requires a language to describe the product so that the specifications are understood by all parties and are measurable, like equipment or spare parts catalogues for example.

This Reference Guide contains photographs and definitions that specifically relate to the quality of pears. It is designed for use by growers, packers, marketers and buyers of pears to negotiate or to report on quality of pears. It is not intended to replace any existing grades or standards that are used by packers and marketers of pears.

Pears packed under this system can be labelled under any grade standards that may be required such as Codex Alimentarius or OECD agreements so long as the fruit meets these standards.

HOW TO USE THIS LANGUAGE

The Reference Guide sets out and defines quality parameters applicable to pears such as shape, colour, blemish, etc. It then suggests some options within each parameter. The options are at three levels (A, B and C) and each level is termed a style. When buyers order, they negotiate the quality parameter types and styles and the percentages of each they require. When packing fruit, packers are given the quality parameters of the fruit and the percentage of each style which is required in the finished pack.

In simple terms this Product Description Language for Pears does the following:

- 1** Describes the quality parameters of pears.
- 2** Specifies styles of each quality parameter.
- 3** Provides some guidance and suggested documents for use of the language by packers, their suppliers and their customers.

Basic Quality Expectations

In this Reference Guide, pears are assumed to be packed for domestic and export fresh fruit markets. It is acknowledged that substantial quantities of pears are processed each season, and that styles of product not depicted in this guide may be necessary for this purpose. Irrespective of the destination of the product, there are some basic attributes which should be met.

1. Intact: pears should be free of major injury or spoilage.
2. Sound: pears should not be overripe, soft or wilted, they should be free of foreign odours and foreign tastes, and free of injury and blemish which is likely to affect keeping quality.
3. Clean: pears must be free of dirt, dust, unacceptable chemical residues and other foreign matter.
4. Palatable: pears must be of a variety and in a condition which is acceptable to consumers.

Pear Quality Parameters

There are two types of quality attributes of pears, namely those which are a function of the natural process of fruit growth (“general parameters”) and those which are the result of undesirable interference (“defects”).

The general parameters are:

- shape
- colour
- blush
- russet
- maturity
- lenticel spotting

Defects included in this guide are:

- misshape
- skin marks
- sunburn
- hail damage
- bruising
- broken stems

MAKING IT WORK

Any language which helps define a product depends on the ability to measure or assess the fruit to see how it meets the specification. The idea is to minimise the use of words like “reasonably”, “practically”, “usually”, “almost”, “not many” and “few”. These words have many interpretations. They lead to disputes between packers and their customers because both parties have different interpretations of what they mean. The use of photographs assists greatly with interpretation.

By measuring blemish by square centimetres for example, the room for error and subsequent dispute is minimised. However, the process of packing pears to a specification relies on having adequate procedures for sampling product and recording the results.

Some draft documents for customer specifications and checking packed pears are included following this section, as well as suggested procedures for using the documents. There are other documents currently in use by pear packers, and anyone wishing to set up their own product specification sheet and quality check sheet should not encounter any difficulty obtaining ideas from others.

Packers should be aware that there are other aspects to a customer's specification for pears. Issues that need to be taken into account include:

- Labelling
- Carton size, shape and materials
- Pallet dimensions
- Strapping
- Corner pieces
- Time and mode of delivery
- Temperature management

These wider issues are included in the Australian United Fresh Product Description Matrix, with which this document integrates and provides the detail of the matrix options.

In addition to this Reference Guide, a set of colour plates of each individual style has been produced. The purpose of this additional resource is to assist packinghouse staff on a day-to-day basis by indicating the allowable styles for a particular order. Sets of the colour plates can be ordered from the Australian Horticultural Corporation Bookshop (Phone 02 357 7000).

Packers and growers should also read "Guide to Quality Management - Apples" published by the Australian Horticultural Corporation, Sydney and also available from the AHC Sydney office. This publication has been produced for companies in the Australian apple industry wishing to implement a quality management system but it is also relevant to those growing and packing pears. It provides practical advice on quality management options, specifications, procedures and records, and managing quality both in the orchard and postharvest.

Another useful reference is “Pears - A quality product manual” produced by the AHC, Department of Agriculture Victoria and Northern Victoria Fruitgrowers Association Ltd. Copies are available from the NVFA Ltd office (Phone 058 215 844).

The AHC has a number of other more general publications and videos to assist horticultural businesses implement quality management systems and can provide advice on training, consultants and funding assistance.

ACKNOWLEDGMENTS

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Mr Jon Durham (President) and executive members of the Australian Apple & Pear Growers Association.

This project was funded by the Australian Horticultural Corporation, the Australian Apple & Pear Growers Association and the Horticultural Research & Development Corporation.

PROCEDURES FOR USING THE SYSTEM

There are two documents recommended for use with the system

1. **PACKINGHOUSE ANALYSIS SHEET**
2. **MARKET SPECIFICATIONS FORM**

The **PACKINGHOUSE ANALYSIS SHEET** is used in the packinghouse to monitor and analyse the fruit being packed for market. The **MARKET SPECIFICATIONS FORM** is used by sellers and buyers of pears to specify the product they wish to buy or sell.

PACKINGHOUSE ANALYSIS SHEET PROCEDURE

The Product Description Language requires objective assessment of the fruit for it to work most effectively. It is ideal for those with a quality management system which ensures correct procedures are followed. The following are recommended sampling procedures.

STEP 1. A representative sample of each line of fruit should be taken as soon as practical after fruit is delivered to the packinghouse. Take a sample of 100 fruit as this makes calculating percentages easy.

Examine each fruit individually for each quality parameter type and style. Remember, each fruit may have a number of defects and all should be counted. Record each fruit's attributes in the appropriate box by using dots or crosses. After each fruit has been assessed, count the numbers of each style, calculate the percentage and write this in the percentage box.

This information can be provided to the grower or orchard manager to indicate a profile of the fruit supplied. It can also be used by the packhouse manager to decide whether to store fruit long term or short term or pack for export or domestic markets.

STEP 2. Take a sample of 100 fruit from the line immediately after the sorting table. Take the sample at or soon after the start of packing for the session. Take further samples as required such as after a change of growers or orchard blocks or after an elapsed time such as 30 minutes.

Write down the percentage of the required styles in the appropriate box on the **PACKINGHOUSE ANALYSIS SHEET**. Examine each fruit and record results as described above. Calculate the percentages and compare what you have with what is required. Advise the sorters to modify their sorting if the analysis shows the fruit does not conform with the product specifications required.

STEP 3. Take a sample carton of packed fruit and go through the same procedure. Sample cartons at about one carton every two pallets, or according to requirements.

Examine the **PACKINGHOUSE ANALYSIS SHEETS** closely over time to build up a profile of the fruit. The trends in quality parameters can then be established for a packinghouse and linked to market requirements. It is expected that a packinghouse will develop a range of combinations of quality parameters and styles that will become their market benchmarks.

MARKET SPECIFICATIONS FORM PROCEDURE

For the buyer:

Select each quality parameter required and specify the percentage required of each style (A, B, C). Write the percentage in the appropriate box. If it does not matter what style is required, tick the **ANY STYLE** box for that quality parameter type. If any quality parameter type is not required to be specified, cross it out.

For the packer:

Use the information from the **PACKINGHOUSE ANALYSIS SHEETS** to write in the **MARKET SPECIFICATIONS FORM** what is available. The information can also be used to deliver feedback to grower suppliers.

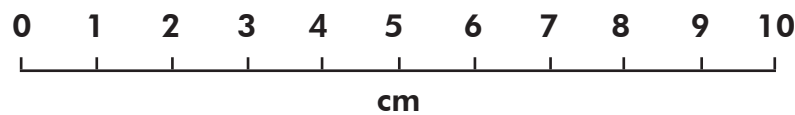
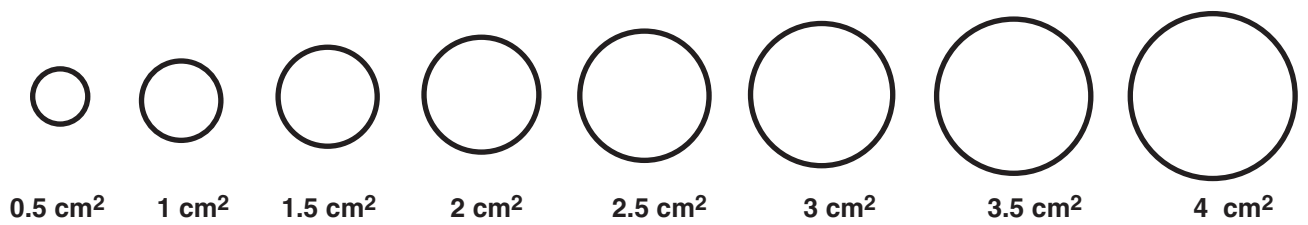
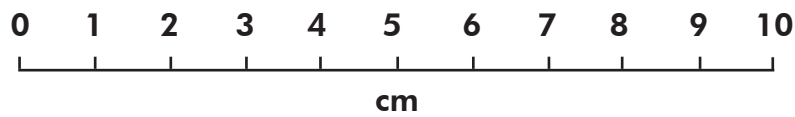
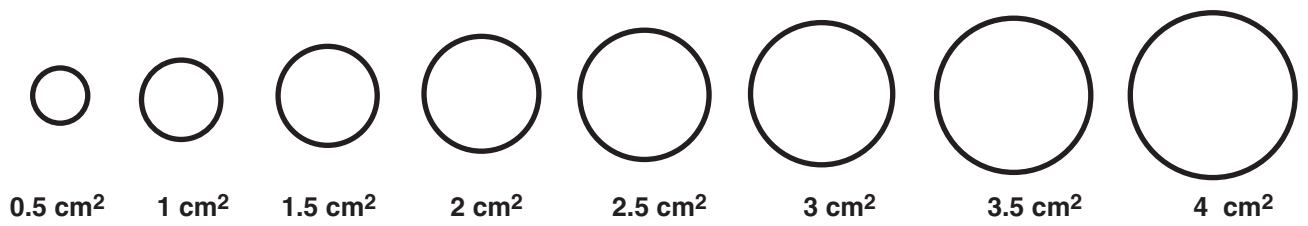
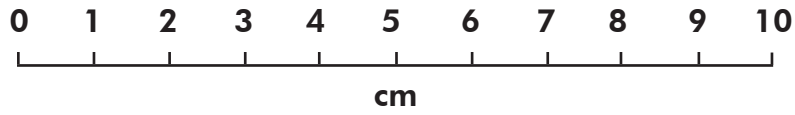
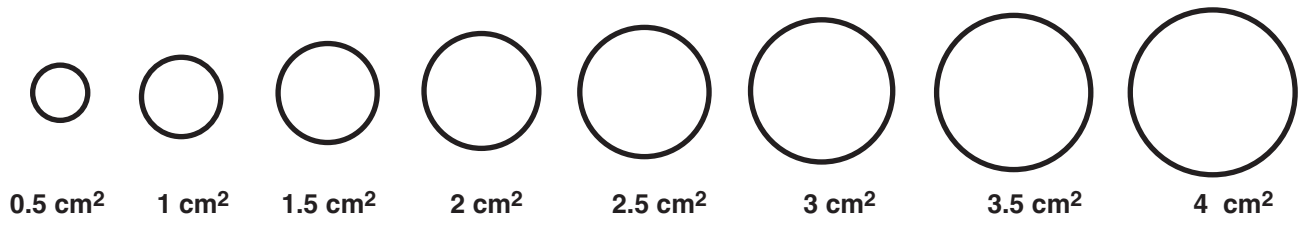
These are only suggested procedures. Packers, marketers and customers should evolve procedures which best suit their own needs, with documents to match.

MARKET SPECIFICATIONS FORM - PEARS

VARIETY:				
COUNT:				
ADDITIONAL REQUIREMENTS:				
QUALITY PARAMETERS	STYLE A Write tolerance percentage or tick for 100 %	STYLE B Write tolerance percentage or tick for 100 %	STYLE C Write tolerance percentage or tick for 100 %	ANY STYLE Tick if style does not matter
SHAPE				
MISSHAPE				
COLOUR				
BLUSH				
RUSSET				
MATURITY				
LENTICEL SPOTTING				
SKIN MARKS				
SUNBURN				
HAIL DAMAGE				
BRUISING				
STEMS				
(total blemishes)				
PRESSURE				

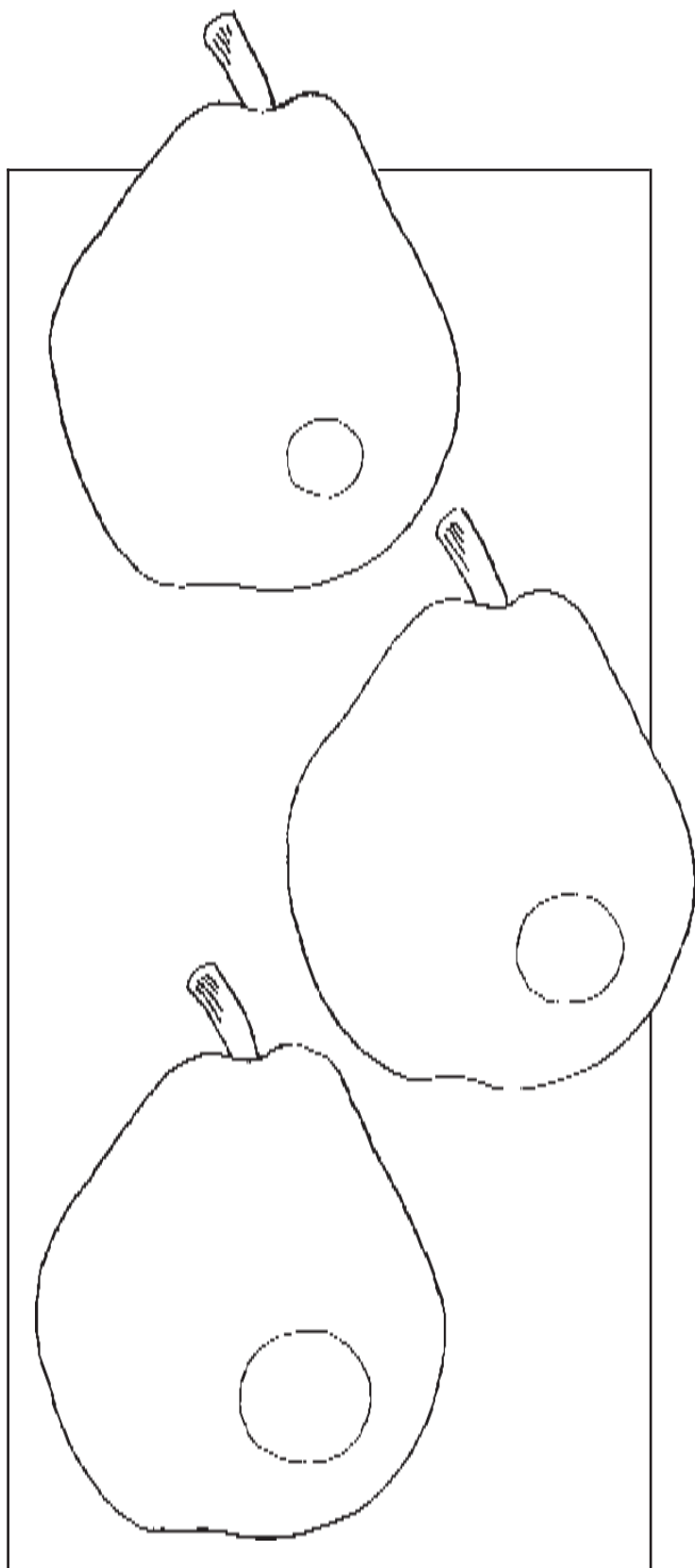
PACKINGHOUSE ANALYSIS SHEET - PEARS

DATE:	TIME:	IDENTIFICATION:		COUNT		
QUALITY PARAMETRES	STYLE A		STYLE B		STYLE C	
	REQUIRED%	ACTUAL %	REQUIRED%	ACTUAL %	REQUIRED%	ACTUAL %
Shape		%		%		%
Colour		%		%		%
Blush		%		%		%
Russet		%		%		%
Maturity		%		%		%
Lenticel Spotting		%		%		%
Misshape		%		%		%
Skin Marks		%		%		%
Sunburn		%		%		%
Hail Damage		%		%		%
Bruising		%		%		%
Stems		%		%		%
TOTAL/ SUMMARY						



BRUISING

Bruising results from pressure on the pear to the point where it compresses the flesh. The result is a flat or sunken area on the skin, often darker than the true colour as a result of discoloured flesh beneath. Bruising mostly occurs at harvest but can occur at any stage if fruit is handled without care.



STYLE A

Less than 1 square cm.

STYLE B

Less than 2 square cm.

STYLE C

Less than 3 square cm.

SHAPE

Shape means the evenness of the surface. Shape may be more bumpy after cool growing seasons or with light crops of larger fruit.

STYLE A

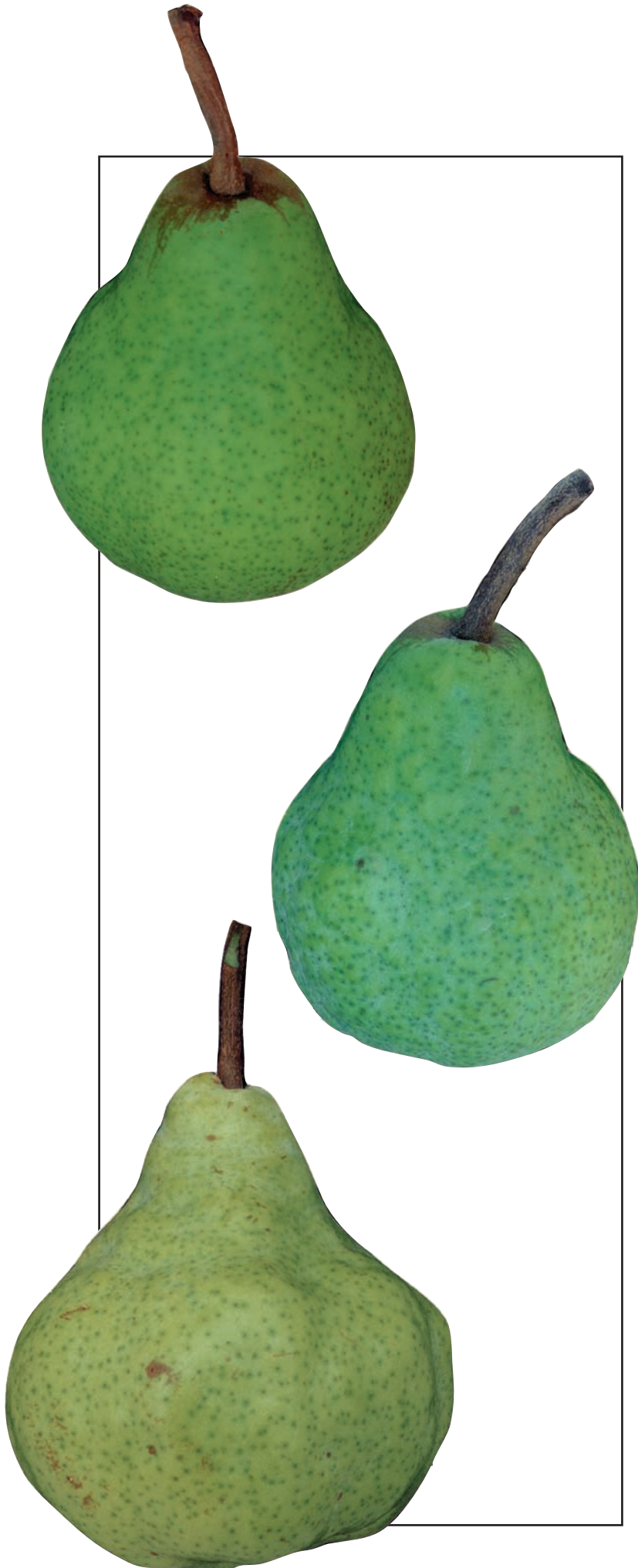
Typical of smooth surface

STYLE B

Typical of less smooth

STYLE C

Typical of bumpy surface.



MISSHAPE

(PACKHAM)

Misshapen fruit is usually due to poor pollination at flowering. It is also associated with light crops, or when the pear is damaged early in the growing season by frost, hail insects, etc

STYLE A

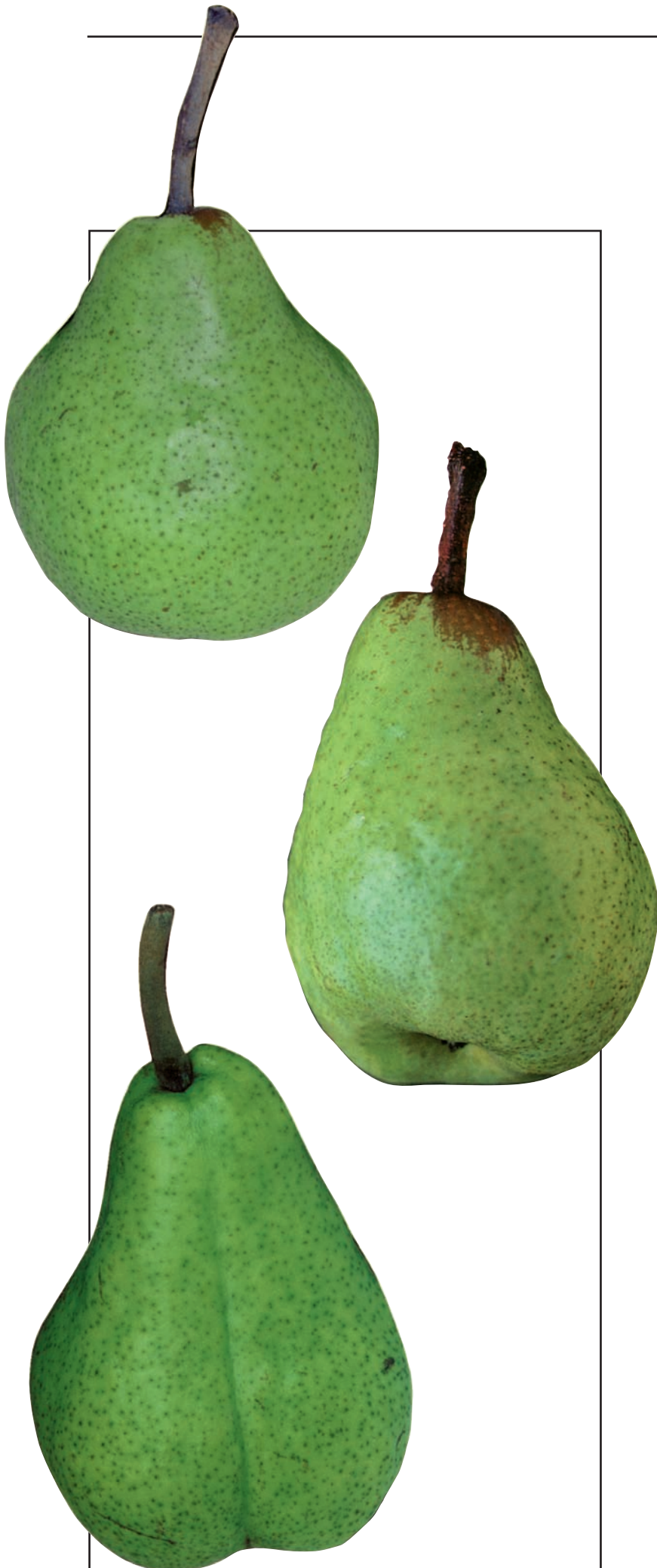
No misshape permitted.

STYLE B

Slight degree of irregularity in shape is permitted.

STYLE C

Moderate degree of irregularity in shape is permitted.



MISSHAPE

(WBC)

Misshapen fruit is usually due to poor pollination at flowering. It is also associated with light crops, or when the pear is damaged early in the growing season by frost, hail insects, etc.

STYLE A

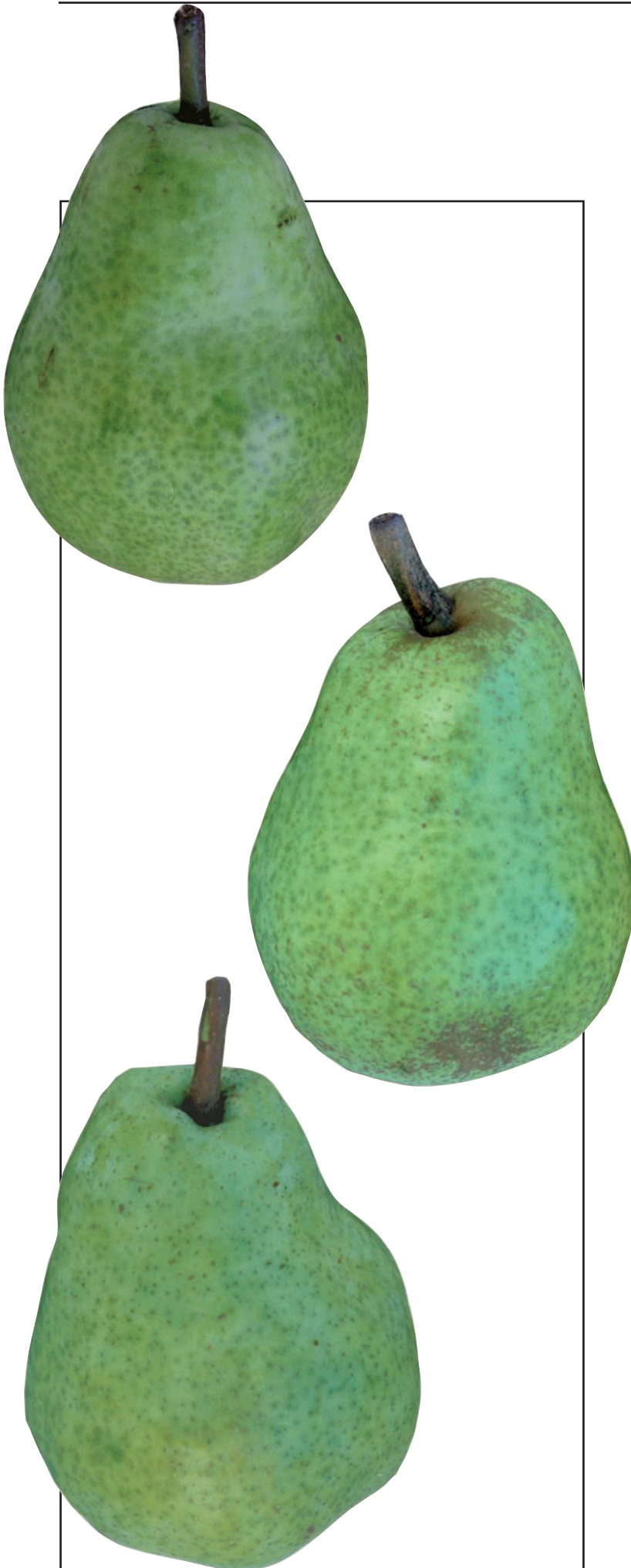
No misshapen permitted

STYLE B

Slight degree of irregularity in shape is permitted.

STYLE C

Moderate degree of irregularity in shape is permitted.



COLOUR

Colour is the combination of the natural pigments in the skin of the fruit. Colour in this guide refers to the main foreground colour which characterises the variety, not blush or any other influences on skin colour.

STYLE A

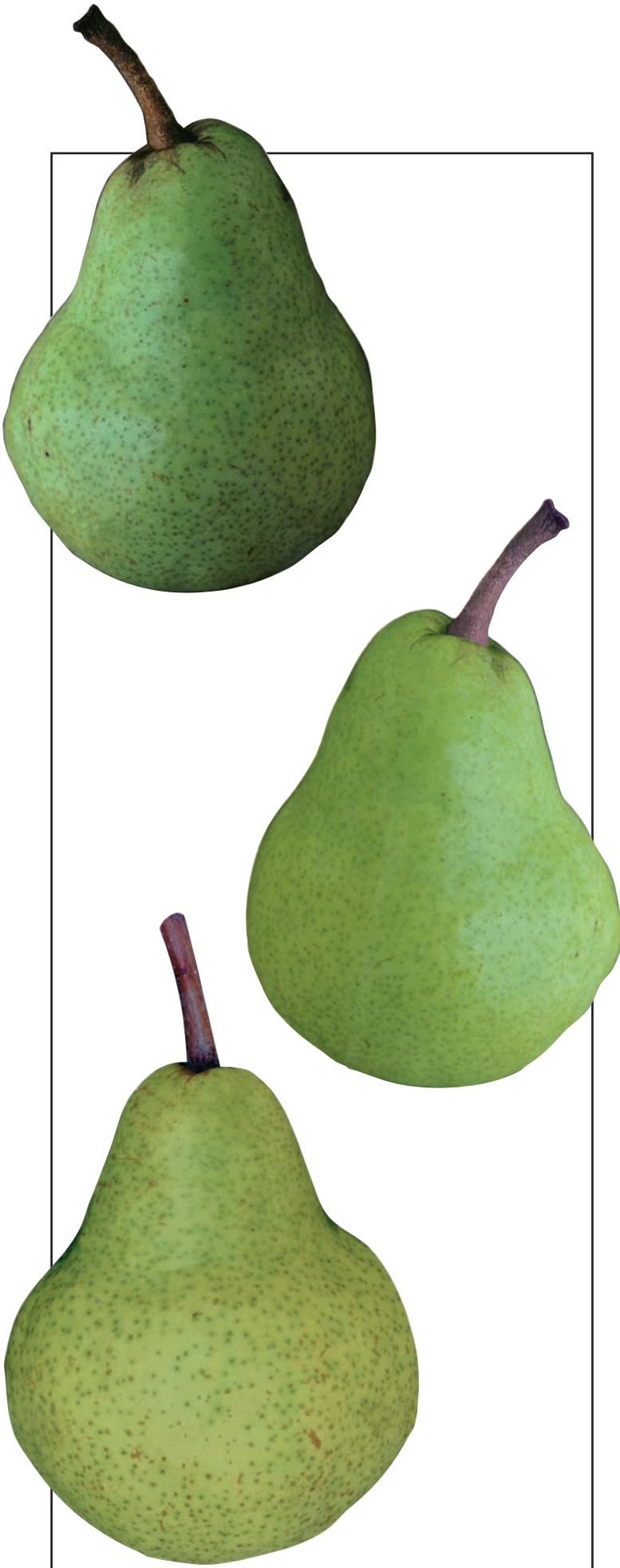
Dark green.

STYLE B

Mid green.

STYLE C

Light green.



SKIN MARKS

Skin marks have numerous causes, most commonly healed limb rub, cuts, punctures and pest damage, and mechanical damage which occurs during the harvesting and packing processes.

STYLE A

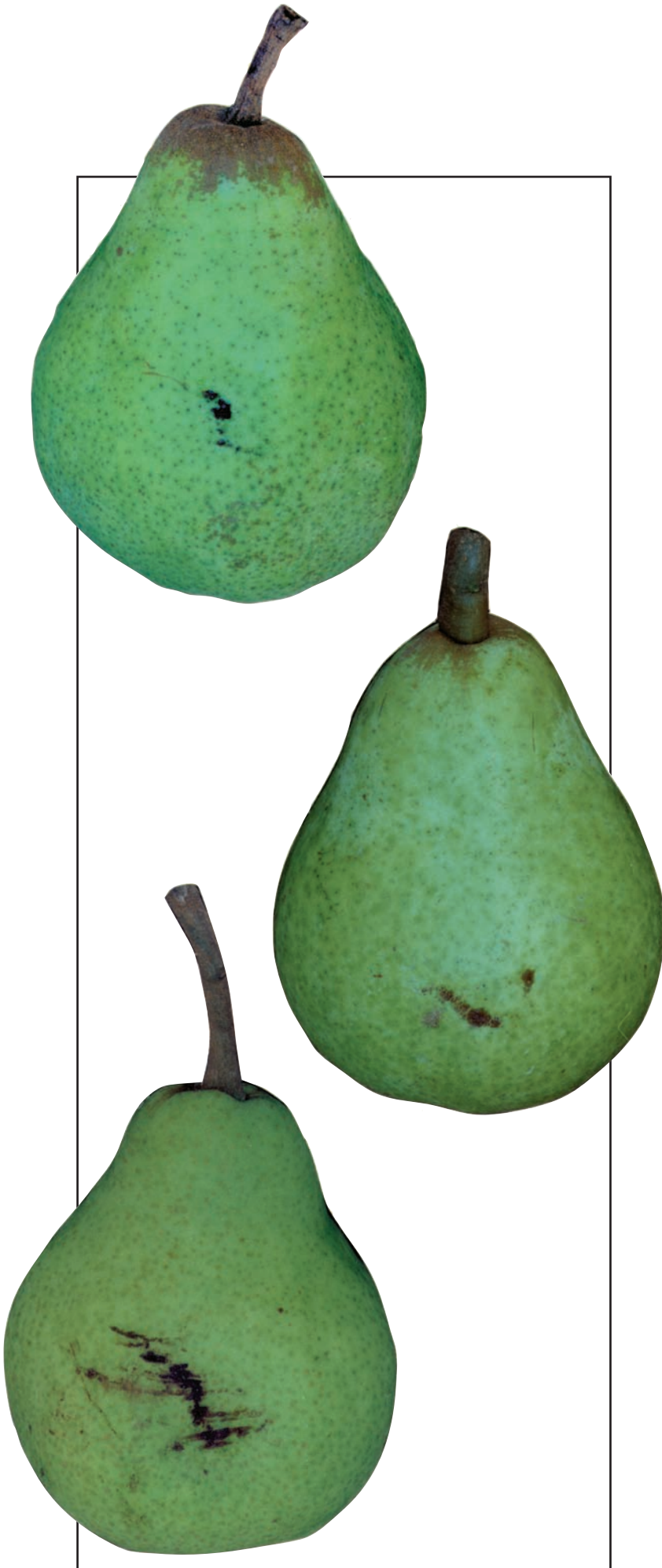
Less than 1 square cm in area, no more than 1 cm in length.

STYLE B

Less than 1 square cm in area, no more than 2 cm in length.

STYLE C

Less than 2.0 square cm.



RUSSET

Russet is scar tissue on the skin of pears which has various causes such as frost. Varieties differ in their susceptibility to russet, and some varieties have russet which is characteristic of the variety.

This page refers to all green-skinned pear varieties.

STYLE A

Less than 0.5 square cm is permitted.

STYLE B

Less than 1.5 square cm is permitted.

STYLE C

Less than 2.5 square cm is permitted.



SUNBURN

Excessive exposure to direct sunlight can damage pears. The level of damage depends on the duration, frequency and intensity of sunlight, and the susceptibility of the variety. Light sunburn leads only to slight skin discolouration. Severe sunburn also damages the flesh of the fruit directly beneath more severe skin discolouration.

STYLE A

No Sunburn Permitted.

STYLE B

Light superficial sunburn permitted.

STYLE C

Moderate discolouration is permitted.



HAIL DAMAGE

Hail damage usually shows as healed damage in a depression of the skin. The severity of the blemish is related to the size, number, shape and impact of the hail, and when in the growing season the damage occurred. Unhealed hail damage should never be packed.

STYLE A

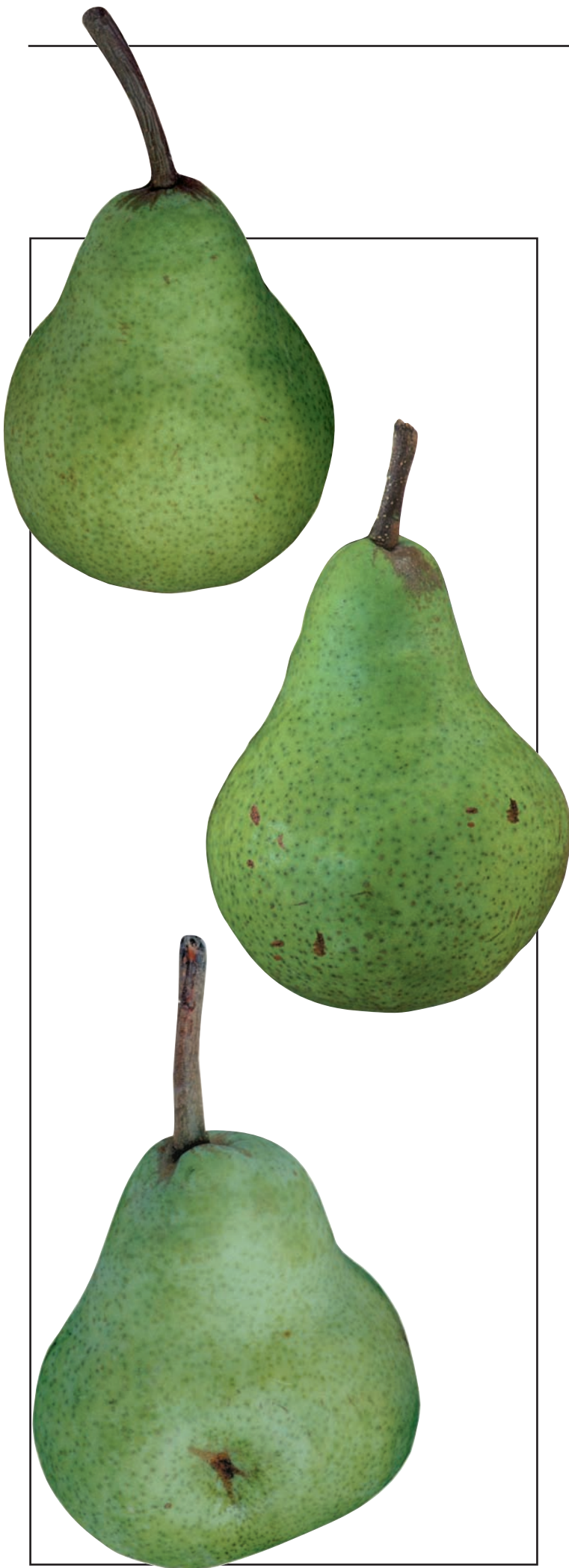
No hail marks are permitted.

STYLE B

Hail marks less than 0.5 cm at maximum diameter, and no more than 1 square cm in aggregate are permitted

STYLE C

Healed marks no more than 2 square cm in total.



LENTICEL SPOTTING

Lenticels are small spots on the surface of pears. They are form of russet which develops in response to delayed harvest.

STYLE A

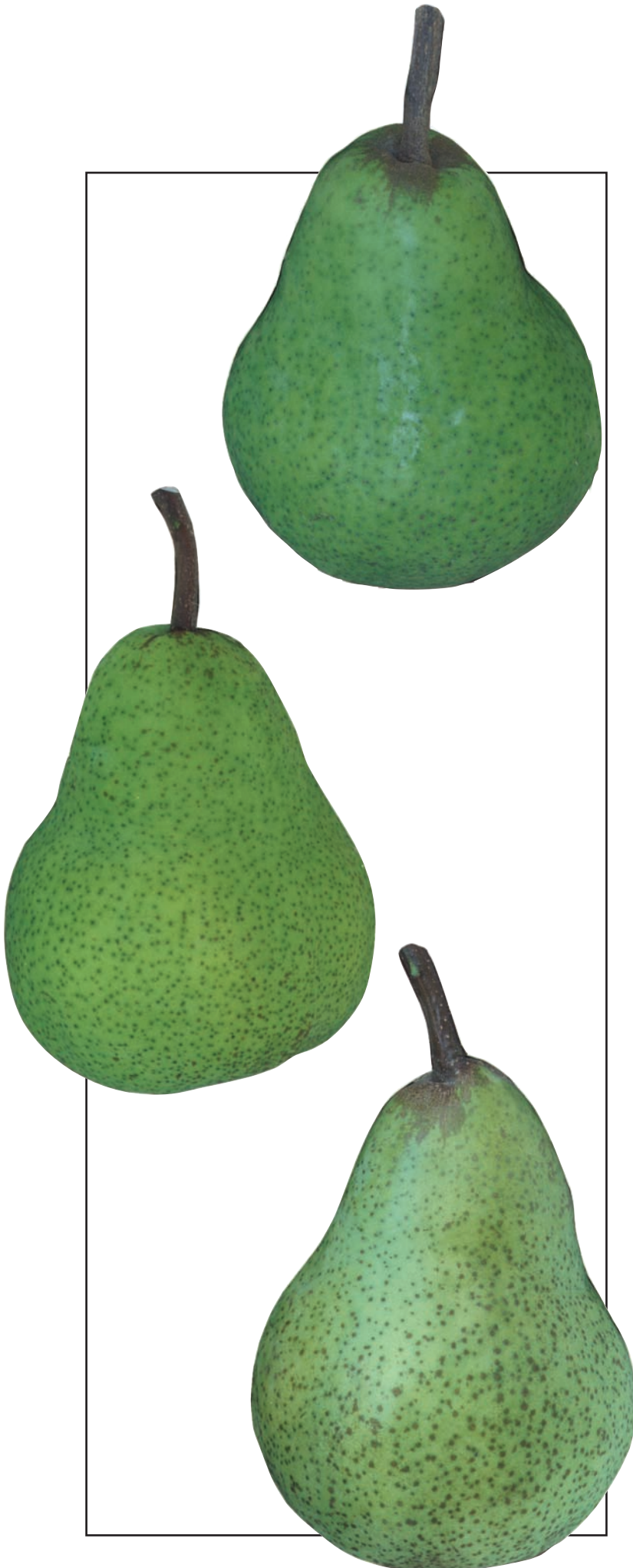
Free from prominent lenticels

STYLE B

Lenticels obvious but not raised, coarse or prominent

STYLE C

Prominent lenticels



DAMAGED STEMS

Stems can be broken by poor fruit handling at any stage prior to packing, but damage usually occurs during harvest. Severely damaged stems also break the skin at the point of contact and such fruit should never be packed.

STYLE A

Stem intact, no damage

STYLE B

Stem broken, but at least 12mm
(1/2 inch) remains

STYLE C

Stem may be completely
missing but skin is not
broken

