



United States
Department of
Agriculture

Agricultural
Marketing
Service

Fruit and
Vegetable
Division

Fresh Products
Branch

Washington, D.C.

ORNAMENTAL CROPS

Market Inspection Instructions

March 1974

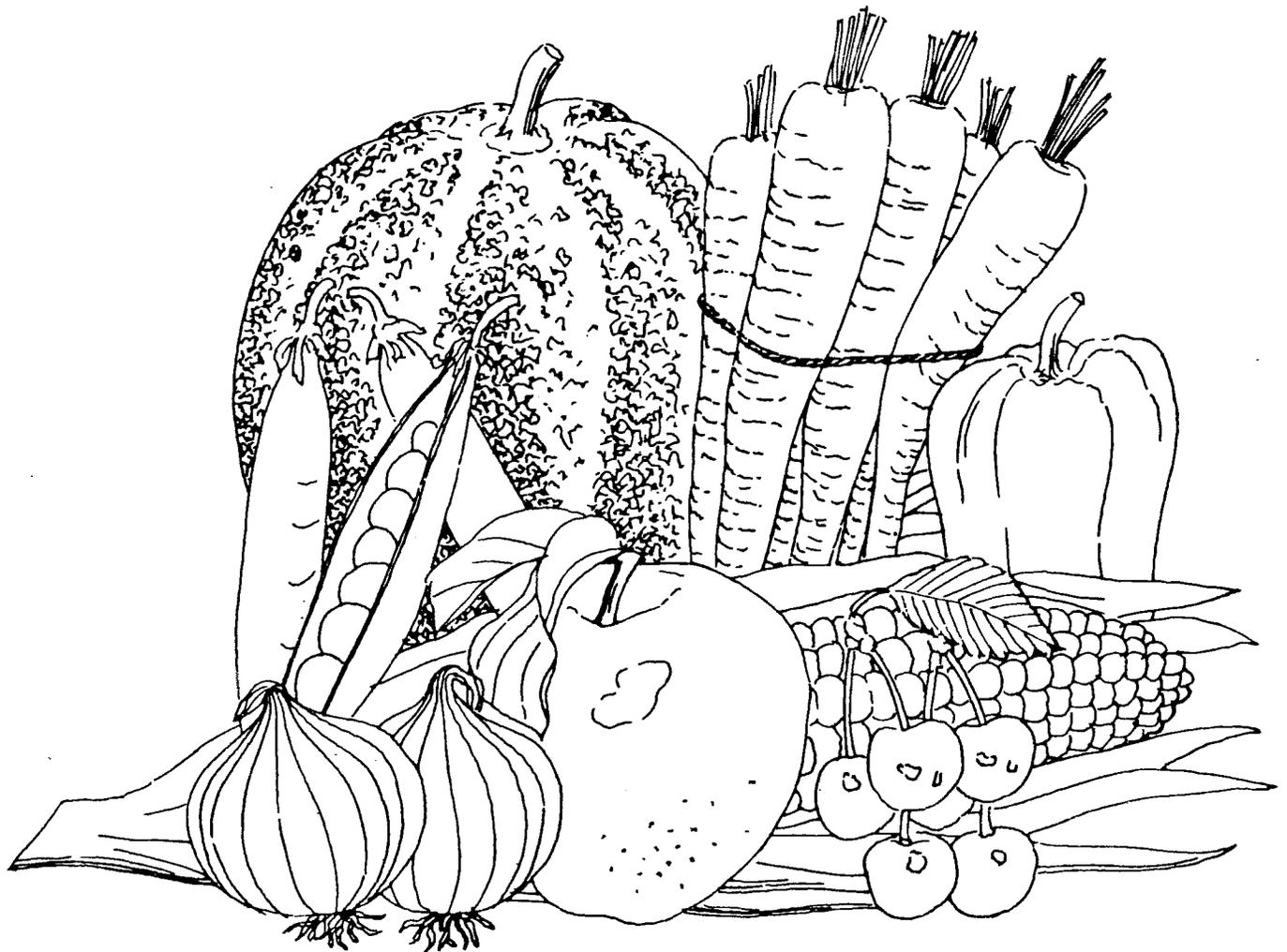


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Reprinted December 1976 to include
Supplemental Instructions dated
April 1975.

REPRINTED FEBRUARY 2009

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
FRUIT AND VEGETABLE DIVISION
FRESH PRODUCTS BRANCH

MARKET INSPECTION

INSTRUCTIONS

ORNAMENTAL CROPS

GENERAL

Since the advent of market news reports on ornamental crops there has (1)
been an increased interest by the industry in the quality of products
flowing through trade channels. This has resulted in increased calls
for inspection in terminal markets on various plants, flowers and other
ornamentals.

Flowers and plants deteriorate in many of the same ways as fruits and (2)
vegetables.

- Through normal respiration;
- By postharvest diseases;
- Normal maturation (aging);
- Excessive loss of moisture (wilting);
- Careless handling (bruising);
- Holding at temperatures too high (heating); and,
- Holding at temperatures too low (chilling or freezing).

These instructions have been prepared to assist market inspectors in (3)
making condition inspections on ornamental crops, issuing dumps and writing

certificates. General instructions are given which can and should be followed on all crops. More specific information is given on the "bread and butter" items, i.e. the cut flowers - - Carnations, Chrysanthemums, Gladioli and Roses.

SAMPLING

- (4) As with other commodities, representative sampling is necessary in order that all segments of the lot are looked at and the facts shown on the certificate are truly indicative of the over-all quality of the lot.
- (5) The inspector should strive to examine a minimum of 20 percent of the lot when making the inspection. On small lots this could be increased without too much difficulty. Regardless of the lot size, the inspector should examine sufficient quantities to satisfy himself that his results give a complete and accurate picture of the conditions present.

PRODUCTS INSPECTED AND DISTINGUISHING MARKS

- (6) PRODUCT. An exact statement should be made as to type of flower/plant and whether it is cut or a plant. If in bunches this fact should also be shown. If a plant the diameter of the pot should be shown. This measurement should be made at the top of the pot.

CONTAINER. The majority of the ornamental crops will be packed in fiberboard containers of varying dimensions. (7)

DISTINGUISHING MARKS. All pertinent marks should be shown on the certificate. This includes brand names, shipper's name and address, counts, etc. When possible show the airline flight number if it is available. (8)

MANIFEST. Give either as applicant's count; manifest; or Inspector's count. This should show both the number of master containers and the number of flowers, bunches or pots (plants). Care must be exercised to assure that the proper count is given on the certificate and that it covers only that part of the lot which was inspected. (9)

EXAMPLES: (10)

CHRYSANTHEMUM plants in 6-inch pots packed in fiberboard master containers printed "Live Plants, Floral Acres, Inc., Del Ray Beach, Fla., This box contains potted mums". Applicant's count 200 cartons (1600 plants).

Cut Standard CARNATIONS in bunches packed in fiberboard cartons labeled "Niedens Hillside Floral, Inc., Encinitas, Calif., TO: Houston Flower Market, Houston, Tex." and marked "National Airlines Air Bill Number 37, SAN 21658392 IAH, Date 3/17." Manifested as 6 cartons (316 bunches).

Cut Standard CHRYSANTHEMUMS packed in fiberboard cartons labeled "Inter-American Floral Products, Stuard, Florida, TO: William J. Mahoney, Inc., 540 Albany St., Boston, Mass." and printed "132 per case". Inspector's count 3 cartons.

(11) In those instances where the inspector is unable to identify the type of flower or plant, a general description should be given and the type identified as "Manifested as . . ."

(12) EXAMPLES:

Cut FLOWERS in bunches in fiberboard cartons printed ". . .
" Manifested as 3 cartons (248 bunches) Amazon Lilies.

FOLIAGE PLANTS in 3-inch pots packed in fiberboard cartons printed
 "." Inspector's count 10 cartons. Manifested as
 500 plants (100 each) Sansevieria, Ficus, Neanthe Bella Palm, Podo-
 carpus and Philodendron.

CONDITION OF PACK

(13) Under this heading mention all pertinent information concerning the packing of the product.

(14) TIGHTNESS OF PACK. One of the following terms should be used to describe the tightness.

(15) Excessively tight - means too tightly packed for best results and usually results in bruising or crushing of the product.

(16) Tight - this is the optimum condition which prevents movement of the product within the container.

Fairly tight - some slight movement of the product is possible (17)
but not a sufficient amount to cause bruising.

Slack - product is so loosely packed as to allow free movement (18)
of the product within the container.

LINERS - CLEATS. On roses, carnations and chrysanthemums at least one (19)
and often two pair of cleats are used to hold the bunches in place and
prevent movement. Most containers for cut flowers are lined with either
newspaper or foam sheets for insulation purposes.

PLASTIC SLEEVES. Fuji chrysanthemums, carnations (both miniature and (20)
standard) and other flowers often have a film (plastic)sleeve placed
over the blooms in the bunch. Roses are usually wrapped in a waxed
paper strip covering the buds. These should be mentioned on the cer-
tificate.

SIZE

Occasionally requests may be received to determine size. This request (21)
could be for either the length of stem; size of bloom; count per bunch;
or, weight per bunch. Do not determine any aspect of size unless you
have received a specific request from the applicant. When a request
has been made make sure that you understand exactly what type of infor-
mation the applicant is seeking.

- (22) LENGTH OF STEM. Length of stem shall be measured from the top of the bloom to the base or cut end of the stem. Report the range and the mostly to the nearest whole inch without rounding upward. In other words, 17-1/2 to 24-1/2 inches should be reported as 17 to 24 inches.
- (23) DIAMETER OF BLOOM. The diameter of bloom shall be reported to the nearest 1/4 inch with the measurement being the largest diameter following the natural outline of the petals. If only one or two petals extend beyond the natural outline they should not be considered in taking the measurement.
- (24) WEIGHT PER BUNCH. Some flowers are packed to meet a certain weight per bunch. Pompon chrysanthemums, for instance, are often packed to a weight of anywhere from 10 to 16 ounces, depending upon the point of origin. Accurate scales must be used when certifying weight. Report weight per bunch to the nearest ounce.
- (25) If the applicant states a certain length, diameter or weight was to be the minimum, the certificate should show not only the range and mostly (or average), but also the percent of stems, blooms or bunches under the minimum (stated) factor.

CONDITION

- (26) As a general policy, only those condition factors which are serious enough to affect the salability of the product should be reported on

the certificate. Certain exceptions may be made from time to time but it should be clearly understood that minor condition factors which do not affect the commercial value or which are not readily apparent shall not be reported unless specifically requested by the applicant.

Generally, for cut flowers or for flowering plants, the freshness and color of the foliage and the freshness of the bloom (petals) should be reported. On foliage plants, both freshness and color of the foliage should be shown. (27)

The terms fresh, slightly wilted, and wilted can be used to describe the majority of the lots inspected. (28)

Fresh - means of normal succulence, brightness, firmness, color, etc. (29)

Slightly wilted - means the normal aging process has begun but the lot is not to the point where it can be classed as wilted. (30)

Wilted - means drooping, weak, lacking turgidity. Usually caused by rapid transpiration. (31)

When considering the color of the foliage it must be remembered that the foliage of tinted flowers will take on a cast similar to the tint used. This is especially true on those flowers tinted through absorp- (32)

tion. This condition is normal and accepted by the trade and should not be reported on the certificate.

- (33) Foliage color may also vary according to varieties. The foliage on carnations, for example, may range from a pale green to blue-green to deep green and still be considered as healthy color.
- (34) **CONDITION FACTORS.** The more common condition factors are: Bruising, discoloration, and decay.
- (35) Bruising. In describing show the extent to which the blooms/ foliage/plants are affected and, if still in the containers, the location in the container(s) where the bruising occurs.
- (36) Discoloration. As with bruising, show the extent to which the blooms/ foliage/plants are affected and the color or color range involved. It will not be necessary to state the cause for the discoloration, whether it be from a disease, freezing, high temperatures or other factors.
- (37) Decay. Again show the extent affected and the location on the flower or plant. The trade uses the term "Botrytis" to cover a multitude of sins. DO NOT NAME THE DECAY, DESCRIBE IT.

It must be remembered that since U. S. standards do not exist on ornamental crops (with the exception of Cut Peonies in the Bud and Asparagus Plumosis) "damage" and "serious damage", as such, cannot be described. Describe the condition as "affected by" or "shows". For example: "Most plants have lower 3 to 5 leaves affected by brown to black discoloration, some plants have occasional leaves showing brown discoloration around leaf margins." (38)

WRITING CERTIFICATES

In writing the certificate for ornamental crops there are certain procedures or policies to be followed which differ from those for fruits and vegetables. On the majority of our certificates we express the amount of damage, serious damage, etc. in exact percentages. This is done because we are able to define exactly what constitutes damage or serious damage. (39)

On ornamental crops we will follow the procedures used on fruits and vegetables in describing factors which do not affect the appearance or quality to the extent they are considered damage. By this we mean the use of general terms. (40)

For defects other than decay - when the product is bunched - use general terms as well as the number of flowers affected. For example: (41)

- (42) "Most bunches have 1 to 4 flowers, some bunches have 5 to 8 flowers showing"
- (43) If the product is not bunched show in general terms considering the container. For example: "In most cartons many flowers show"
- REMEMBER: DO NOT SHOW AN AVERAGE PERCENT OF DEFECTS PRESENT.
- (44) When decay is involved, the same procedures will be followed with the exception that the average percent of decay will be shown. For example: "Many bunches have 2 to 6 flowers showing decay, many none, average 4%, generally affecting"

ISSUING DUMP CERTIFICATES

- (45) It is important to remember that when a dump certificate is issued you are saying that the lot "has no commercial value".

The general policy to be followed is:

- (46) Bunched lots. When in bunches, the dump must be issued on a bunch basis. As a general rule, when 70 percent or more of either the blooms or foliage (or any combination thereof) in the bunch is bad, the bunch can be considered to have no commercial value. Issue the dump only on the bad bunches. These should first be segregated by the applicant.

Loose lots. When flowers are packed loose (not in bunches) the (47)
condition of the majority of the flowers in the container must
be considered. The dump should be made on a container basis and
not on the individual flowers.

Potted plants. Dumps must be issued on the basis of the individ- (48)
ual plants. The plants which are considered to be of no further
commercial value must first be segregated by the applicant.

PART II

The basic procedures outlined on the previous pages of the instructions (49)
will also apply to the "bread and butter" items, the six principal
cut flower crops. Slightly more detail is given on these on the
following pages, especially in the naming of more specific problems
which can occur.

Standard CARNATION

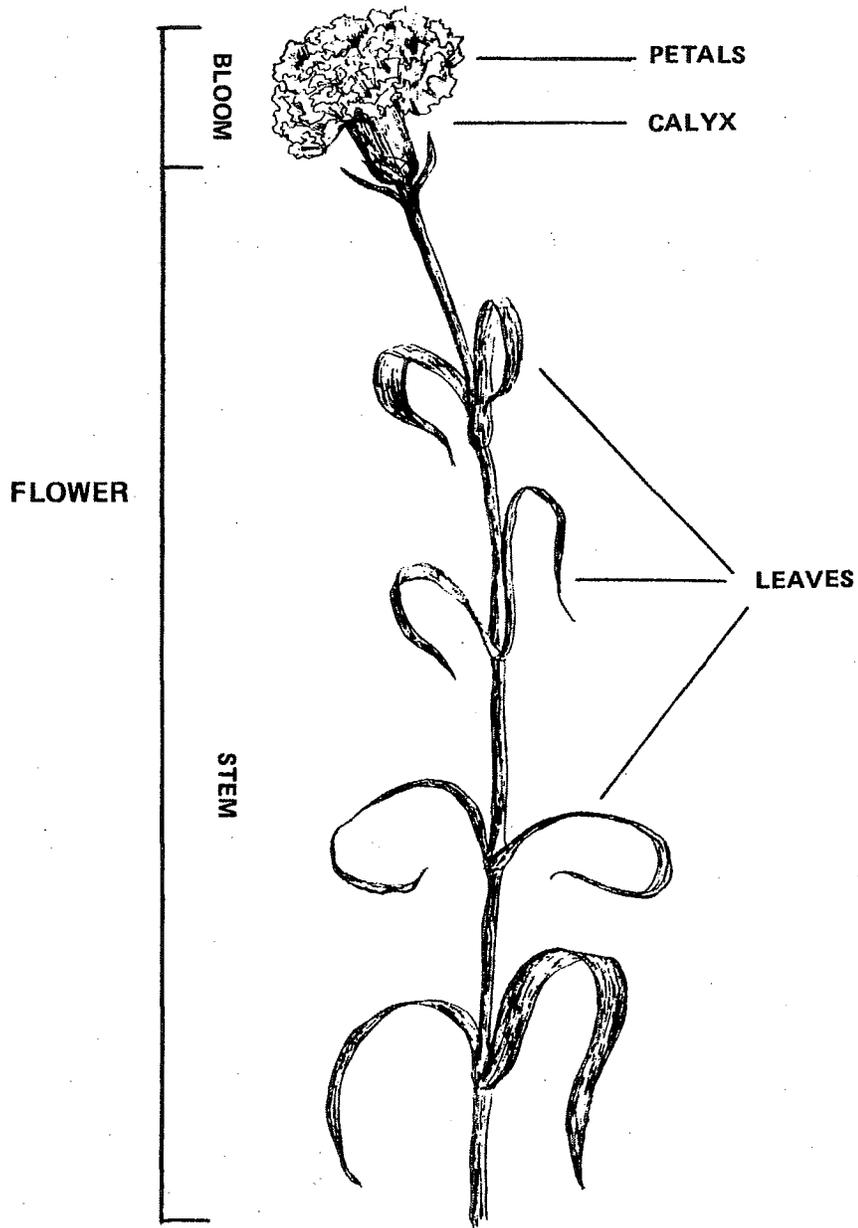


Figure (1)

Standard CARNATIONS

Carnations are generally sold in bunches of 25. They are usually (50)
packed in fiberboard cartons with approximately 24 to 30 bunches to
the carton. The bunches may or may not have plastic sleeves covering
the blooms. Coming into more and more prominence in recent years is
the consumer bunch consisting of anywhere from 8 to 12 flowers.

REPORT:

Freshness and color of stems and foliage. Also, the freshness of the (51)
petals. Remember that the normal color of the foliage may vary from
a pale green to blue-green to deep green and still be considered as a
healthy color, depending upon the variety. Keep in mind when consider-
ing the freshness of the petals that the flowers generally will not,
have been in water for a period of 24 to 48 hours and have experienced
some dehydration.

The leaves of the carnation may vary from straight to a tight curl.
Growing conditions account for the variance. Either is acceptable
and need not be reported on the certificate.

CONDITION FACTORS. Following is a list of the more common condition (52)
factors that will be found in carnations. It does not contain all
possible factors which can be found.

- (53) Broken Stems. The stems, especially when cool, are subject to snapping or breaking during rough handling. When the break is within 4 inches of the bloom, report as "broken heads." When the break is more than 4 inches from the bloom, report as "broken stems."
- (54) Bruising. Bruising affecting the foliage is not usually a factor in carnations. Generally the petals become slightly matted during transit but these will fill out and open after several hours in water. Creasing of the petals, where a sharp fold or crease is involved, is harmful in that the flow of water to the outer edges of the petals is cut off and these outer edges will soon discolor. Report all bruising present but make sure the degree and number of petals affected is mentioned. Seldom will there be sufficient bruising present to say a lot no longer has commercial value.
- (55) Blown Heads. This term is used by the trade to indicate that the flower (bloom) has opened fully and is considered "overmature". The petals at the center are no longer tight and the calyx is very soft and has an empty feeling.
- (56) Sleepy. One of the more important condition defects to be concerned with in carnations. The flower(s) affected are not salable and should be considered as such regardless of the severity. This

factor is usually easy to distinguish in that the tips of the petals, particularly the inner ones, curve inward rather than folding outward as in a normal healthy flower.

Wilting. Ideally the foliage and bloom should be fresh. Any (57)
amount of obvious wilting affecting either should be reported.

Discoloration. Discoloration of the foliage will not generally (58)
be a problem unless the stems have been allowed to dry out or the lot is getting old. Discoloration of the petals may occur for various reasons - - age, bruising, heating, freezing, etc. When encountered, describe the intensity or severity as well as the color and location.

Decay. Decay may be found in various stages. Generally it is (59)
not a problem on the foliage. On the petals it appears as a tan or light brown patch with a somewhat watersoaked appearance. Advanced stages are usually accompanied by a light growth of gray spore masses. The location of the decay (foliage, calyx or petals) as well as the severity should be described. The trade usually refers to all decay as "Botrytis". DO NOT NAME THE DECAY.

GENERAL EXAMPLES

- Pack:** Tight in cartons. Cartons paper lined. Cleats across stems in center portion of cartons. Film sleeves over blooms in each bunch.
- Size:** Stems generally range from 22 to 28, mostly 24 to 26 inches in length. Average 3% under 22 inches. Diameter of bloom ranges from 2-1/2 to 3-1/4, mostly 2-3/4 to 3 inches.
- Condition:** Stems and foliage fresh and green. Petals generally fresh, few slightly wilted. In most bunches none, in some bunches from 1 to 4 flowers have 3 or 4 outer petals affected by bruising. Many bunches have 6 to 10 flowers showing tan to dark brown discoloration affecting edges of outer petals. No decay.
- Condition:** Stems and foliage fresh and green. Petals mostly fresh, some slightly wilted, few badly wilted. In most bunches none, in some bunches 3 or 4 flowers have blown heads. In most bunches no decay, in some 1 to 3 flowers, average 2% decay, mostly affecting 1 to 3 outer petals, some affecting calyxes. Decay is -----(describe color and mold growth, if any).
- Remarks:** Length of stem and diameter of bloom determined at applicant's request. Applicant states above lot purchased as 22 inch minimum length.

Miniature CARNATION

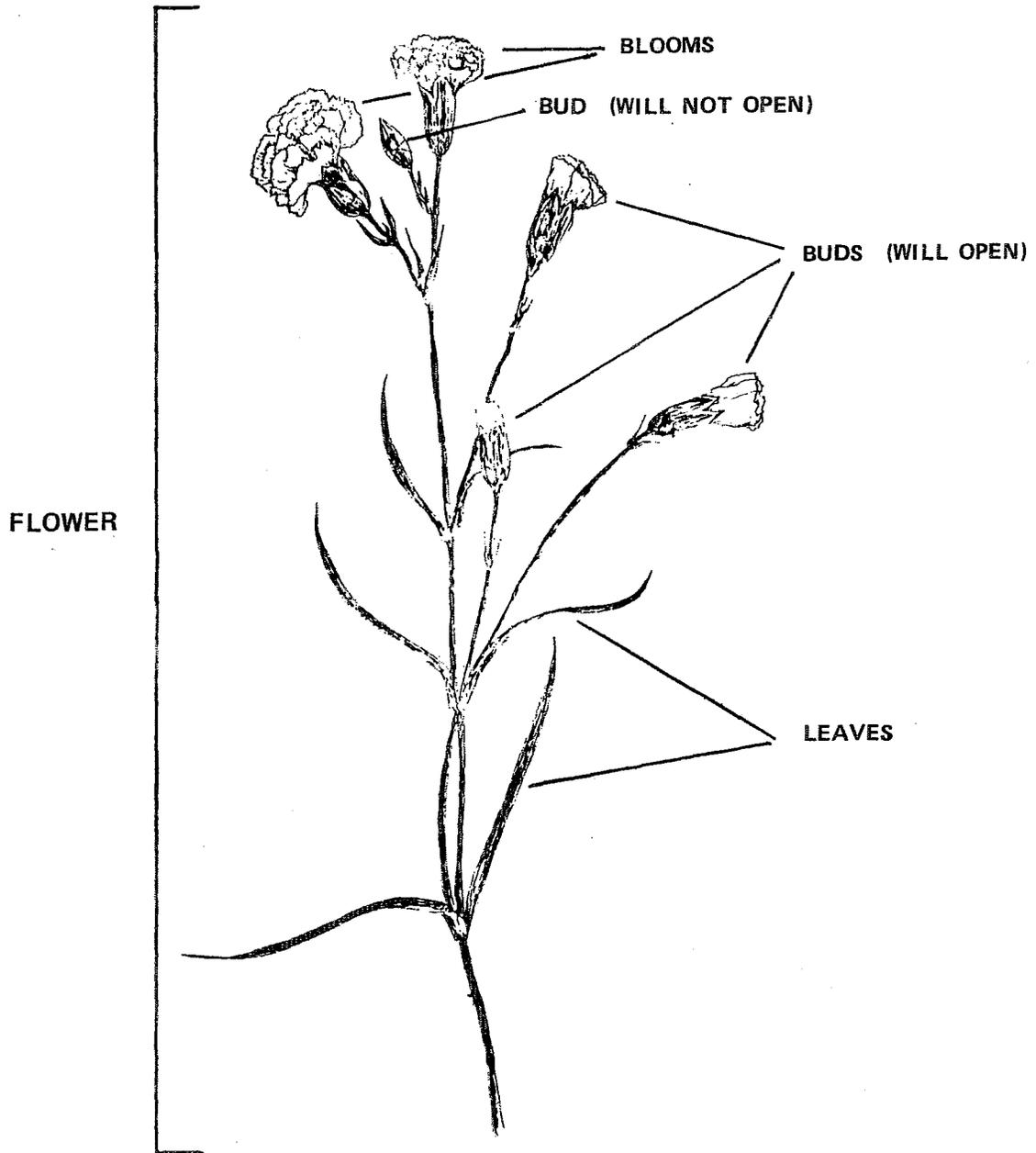


Figure (2)

Miniature CARNATIONS

- (60) Unlike most pompon chrysanthemums which are usually bunched on the basis of weight, miniature carnations are bunched so there will be anywhere from 25 to 35 open blooms or buds showing sufficient color to indicate that they will open (about 1/4 inch). The number depends, to a great extent, on the individual grower/shipper and the point or origin. It will not be necessary to report the number of open blooms or buds unless this is a specific complaint of the applicant.

REPORT:

- (61) The factors affecting standard carnations will also be found in the miniatures. However, broken stems will not usually be a problem.

Standard CHRYSANTHEMUM

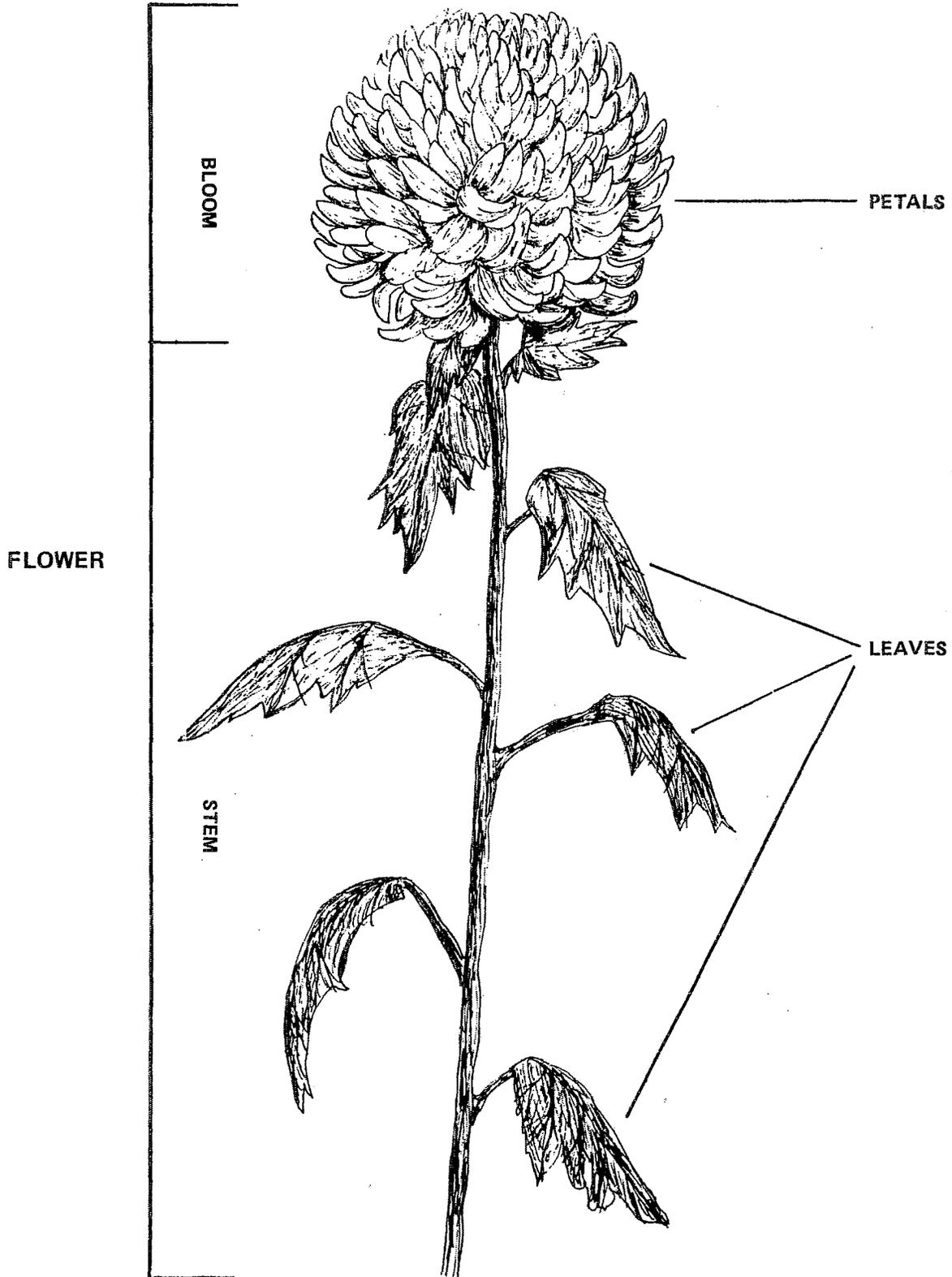


Figure (3)

Fuji CHRYSANTHEMUM

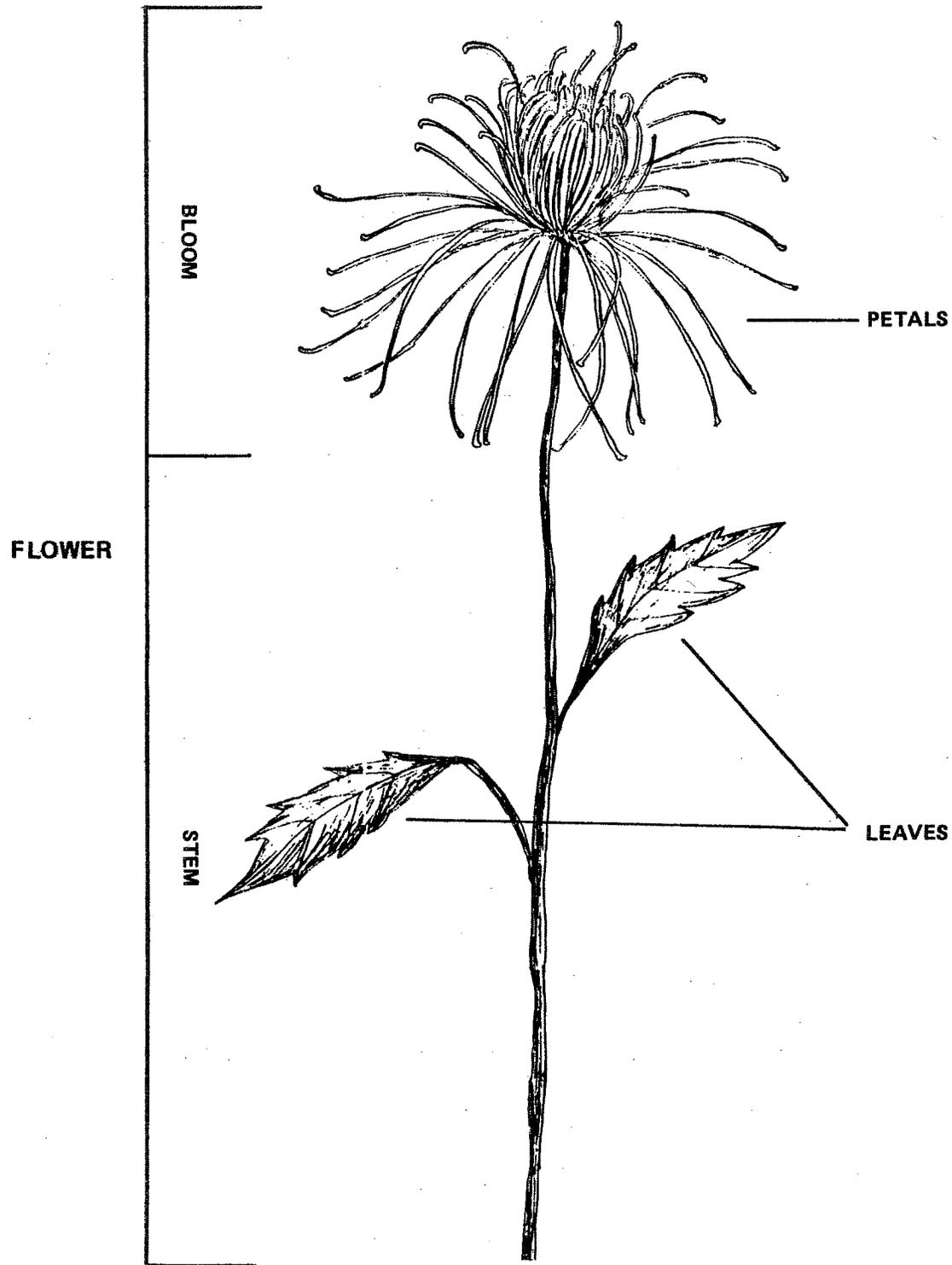


Figure (4)

Standard CHRYSANTHEMUMS

The standard chrysanthemum is normally one of two types, the incurved (62) mum (commonly called the football mum and often mistakenly called a pompon) and the Fuji (Spider) mum.

The standard incurved mum is not bunched but packed loose (separately (63) or singly) while the Fuji is generally packed 12 to a bunch with a plastic sleeve protecting the blooms.

REPORT:

Freshness and color of the stems and foliage. Also, the freshness of (64) the petals.

CONDITION FACTORS. The following condition factors are the ones that (65) will most likely be encountered when inspecting chrysanthemums. They are not only ones that can be found.

Bruising. Bruising affecting the petals is more likely to occur (66) on the delicate Fuji mum than on the incurved mum where it is not usually a factor. It is not too often that bruising will be a factor affecting the foliage. Report all bruising making sure that the severity is described.

Discoloration. Discoloration affecting either the foliage or the (67) bloom should be reported. It is not considered as being very

critical when affecting only the foliage. Describe the color or colors involved, location (leaves, petals, etc.) and the severity or degree.

- (68) Shattering. As the flower starts to age the petals have a tendency to shatter upon handling. This condition should be noted describing the ease of shattering. For example: "Some slight shattering of petals noted." or "Most flowers have petals which shatter readily upon handling."
- (69) Decay. Unlike carnations, decay will frequently be found on the foliage of chrysanthemums. Report location (foliage, petals) and the severity. DO NOT NAME THE DECAY.

GENERAL EXAMPLES

- Pack: Tight in cartons. Cartons paper lined. Cleats across stems in center portion of carton.
- Size: Stems generally range from 26 to 32, mostly 28 to 30 inches in length. Average 5% under 26 inches. Diameter of bloom ranges from 4-1/2 to 7, mostly 5 to 6 inches.
- Condition: Stems and foliage fresh and green. Petals generally fresh, few slightly wilted. In most bunches none, in (Fuji) some bunches 2 to 4 flowers have 4 to 10 petals affected by bruising. Many bunches have 1 to 3 flowers showing dark brown discoloration affecting 4 to 6 outer petals. No decay.
- Condition: Stems and foliage mostly fresh and green, some foliage (incurved) turning yellow and slightly wilted. Some flowers petals shatter readily upon handling. Average 4% decay affecting petals. Decay is ----- (describe color and mold growth, if any).

Pompon CHRYSANTHEMUM

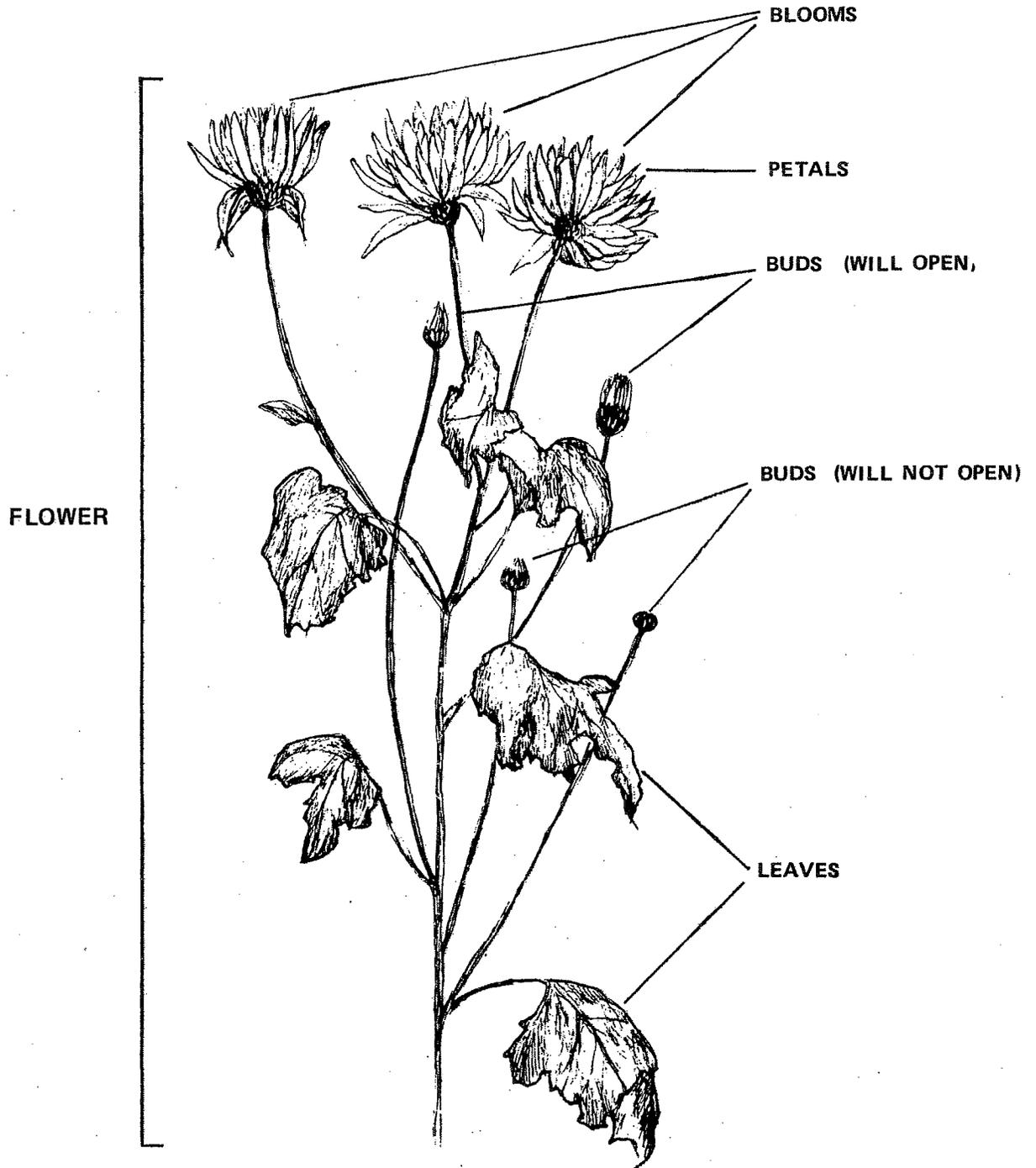


Figure (5)

Pompon CHRYSANTHEMUMS

Pompon chrysanthemums are usually bunches on a weight basis and not (70)
on the number of stems or blooms/buds. Weight may vary from 10 to 16
ounces with about 12 ounces being the average. This will generally
be 5 or more stems. Report neither the number of stems nor the number
of blooms/buds unless specifically requested to do so by the applicant.

REPORT:

As with standard chrysanthemums, report freshness and color of stems (71)
and foliage and the freshness of the blooms (petals). Otherwise, the
factors affecting pompons are basically the same as with the standard
chrysanthemums.

CONDITION FACTORS. One particular problem occurs with some regularity (72)
on pompons. When they are harvested while damp, the foliage will turn
yellow and the blooms brown much more rapidly than through the normal
aging process. Breakdown frequently follows or is associated with
this, affecting all portions of the flowers.

Discoloration. Discoloration affecting the foliage is much more (73)
critical on the pompon chrysanthemum than it is on the standards.

GLADIOLUS

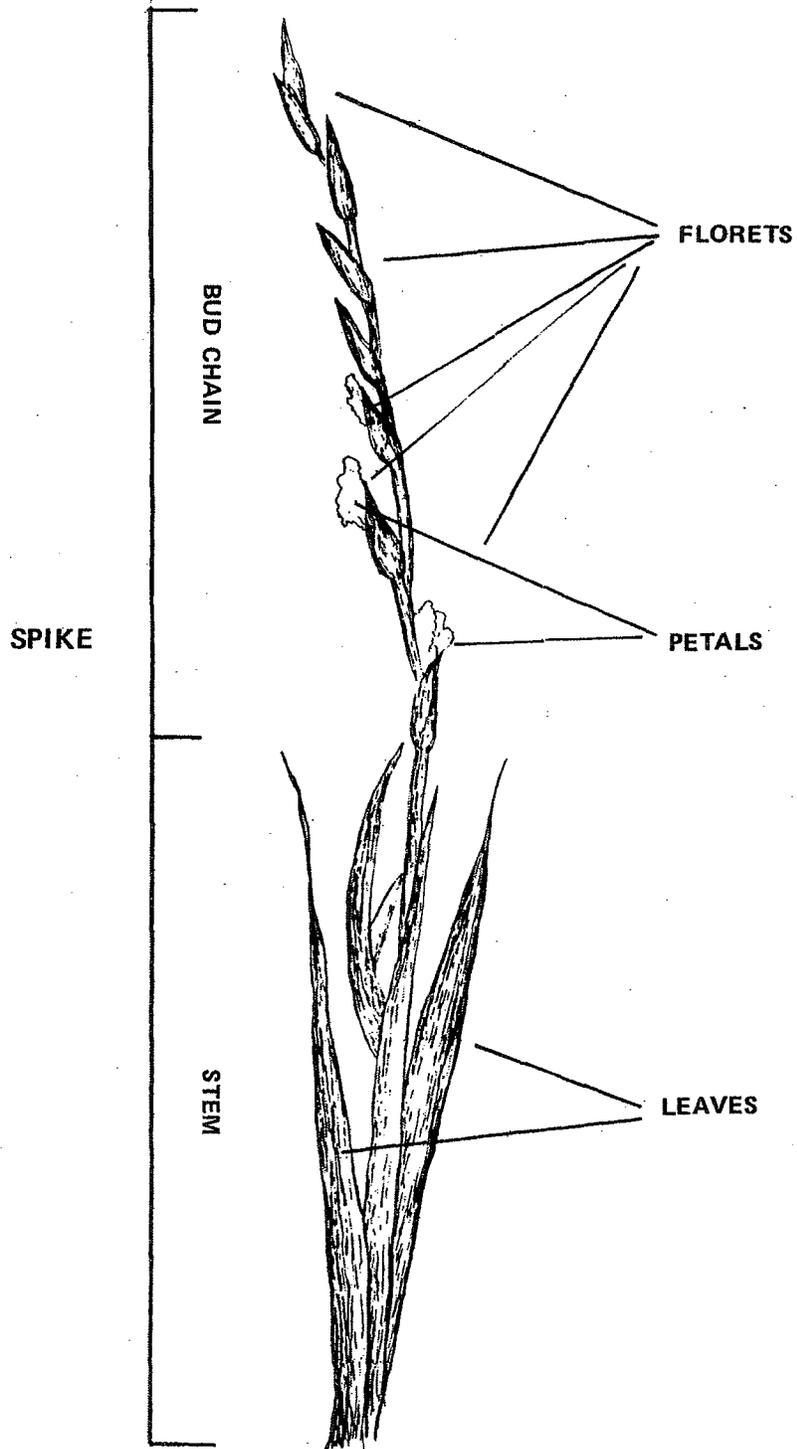


Figure (6)

GLADIOLI

Gladioli are normally shipped in a container called a hamper. They (74)
are always shipped upright. The normal bunch consists of 10 spikes.

REPORT:

The freshness and color of the foliage and the freshness of the petals. (75)
The most desirous condition of the spikes upon arrival is to have the
lower 3 or 4 florets showing color. After the lower florets have open-
ed it becomes increasingly difficult to merchandise the product. The
condition (openness) of the florets therefore should be described on
the certificate. Always do this using general terms (number of spikes)
and exact figures (number of florets). For example: "Most spikes have
1 or 2 open florets with 4 to 5 florets tight and showing 1/4 to 3/4
inch of color, some spikes have 3 to 5 open florets with remainder show-
ing 1/4 to 1 inch of color."

CONDITION FACTORS. There are not too many problems that will occur on (76)
gladioli. Most complaints will be one the openness of the florets.

Discoloration. Discoloration of the foliage is not often a prob- (77)
lem in gladioli. When it does occur it will usually be in the
form of yellowing due to age. Occasionally some discoloration
will be found which has been caused by a disease.

Discoloration affecting the petals is more common. It will usually affect the tips of the petals on those florets which have opened. Although it often appears to have been caused by bruising, this is not usually the case.

Report all discoloration, describing the color and the area or part of the spike affected. This should be done in general terms.

(78) Decay. Not usually a problem in gladioli. Follow the procedures outlined for the other crops.

GENERAL EXAMPLES

- Pack: Tight in hampers.
- Size: Spike length ranges from 40 to 48, mostly 43 to 45 inches.
Bud chain length ranges from 17 to 23, mostly 19 to 21 inches.
- Condition: Foliage fresh and green. Petals fresh. Most spikes have lower 3 or 4 florets open with remaining florets showing 1/4 to 3/4 inch of color, some spike have 1 or 2 lower florets open remaining florets showing no color to 1/2 inch or color, few spike have lower 3 or 4 florets showing 1/4 to 1/2 inch of color, remaining florets showing no color. No decay.
- Condition: Foliage generally fresh and green. Few turning yellow. Spikes generally have 2 or 3 lower florets showing 1/4 to 1/2 inch color, remaining of florets show no color. Few spikes have 3 or 4 lower florets open, remainder showing 1/4 to 1/2 inch color. Petals of open florets have light to dark brown discoloration affecting outer edges. No decay.



ROSE

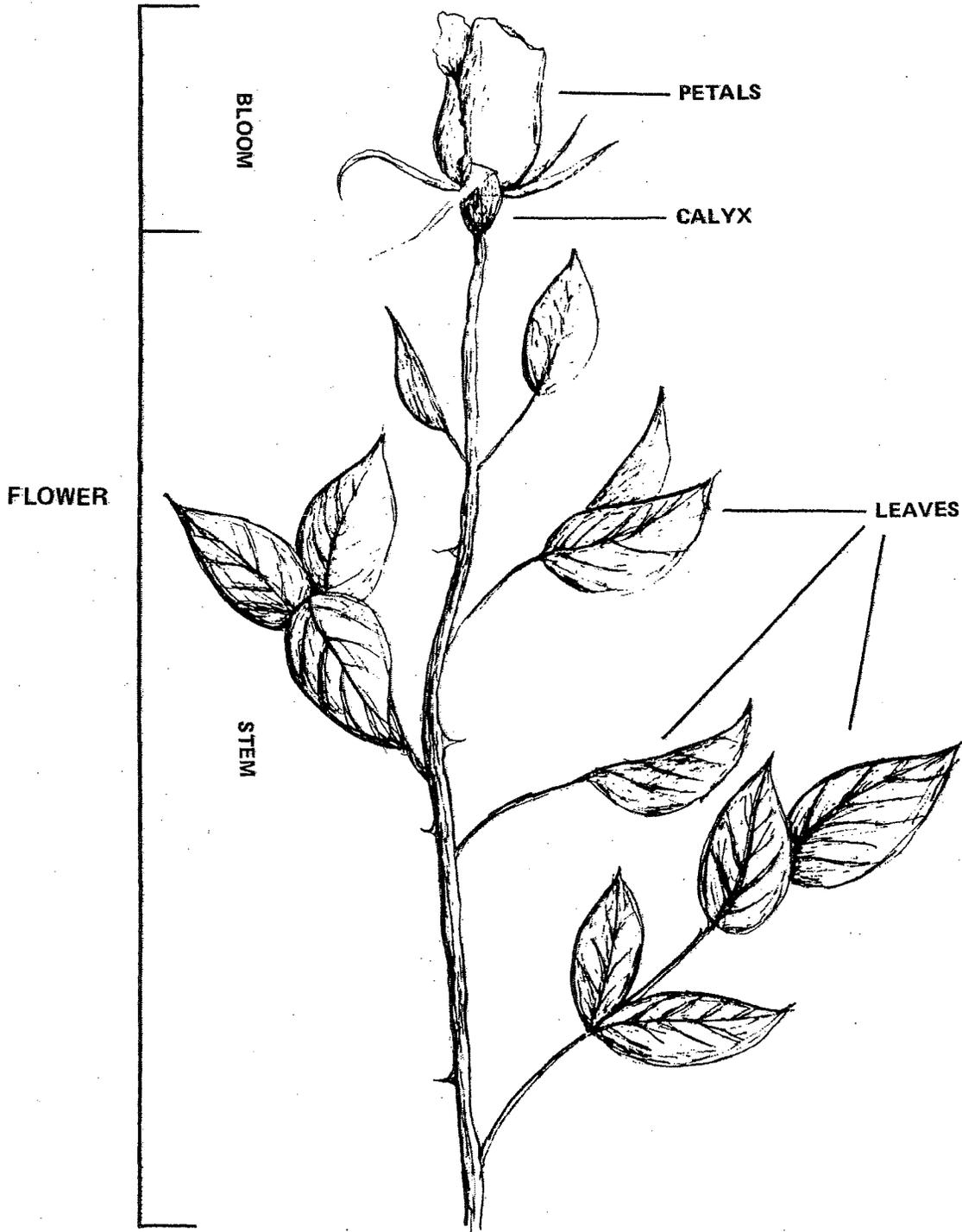


Figure (7)

ROSES

Most roses are shipped 25 to a bunch, however, in recent years, consumer bunches of 12 roses have been increasing in popularity. The principal (79) varieties in the standard rose are American Beauty and Forever Yours. When packed, the bunches are generally held in place by means of cleats spaced approximately 18 inches apart in the center of the shipping container. There are usually two sets of these cleats. Crushed ice is generally placed between the upper set of cleats over the cut ends of the stems. This generally keeps the flowers adequately cooled and provides moisture (humidity). Local roses are generally shipped slightly more open than are those shipped from a distance. The lower leaves may or may not be stripped from the stems.

REPORT:

Freshness and color of the foliage and freshness of the bloom (petals). (80)

CONDITION FACTORS. The following condition factors are the more common (81) ones that will be encountered on roses.

Bruising. Although not generally a factor to be contended with (82) occasional shipments will show slight amounts of bruising affecting the blooms. Bruising affecting the leaves is seldom a factor.

Discoloration. At times mildew may be a factor causing discoloration (83) on the foliage. However, care should be exercised not to

name the specific cause of discoloration. Just describe the color and the amounts of discoloration present. Discoloration can also affect the blooms.

- (84) Soft heads. Be sure to check the blooms. Occasionally one will find blooms (buds) which are tight (when considering openness) but are soft to the touch at the base of the bud. This is considered by the trade to be a defect.
- (85) Decay. Give the location on the flower and the severity but do not name the decay.

ROSES

- Pack: Tight in cartons. Cartons foam lined. Two pair of cleats across stems in center portion of cartons. Small amounts of pack ice present between pairs of cleats. Waxed paper strips around buds in each bunch.
- Size: Bunches marked 13-14, 15-16, and 17-18 meets size as marked. Bunches marked 19-20 generally 18-22, mostly 19-20 inches in length. Average 6% under 19 inches.
- Condition: Foliage fresh and green. Petals generally fresh. In most bunches none, in some 2 to 4 flowers show black discoloration affecting edge of outer petals. Average 2% decay. Decay is -----(describe color and mold growth, if any).
- Condition: Foliage generally fresh and green, some turning yellow and slightly wilted. Petals mostly fresh, some slightly wilted. Most bunches none, some bunches have 1 or 2, few bunches have 3 to 5 flowers with soft heads. No decay.

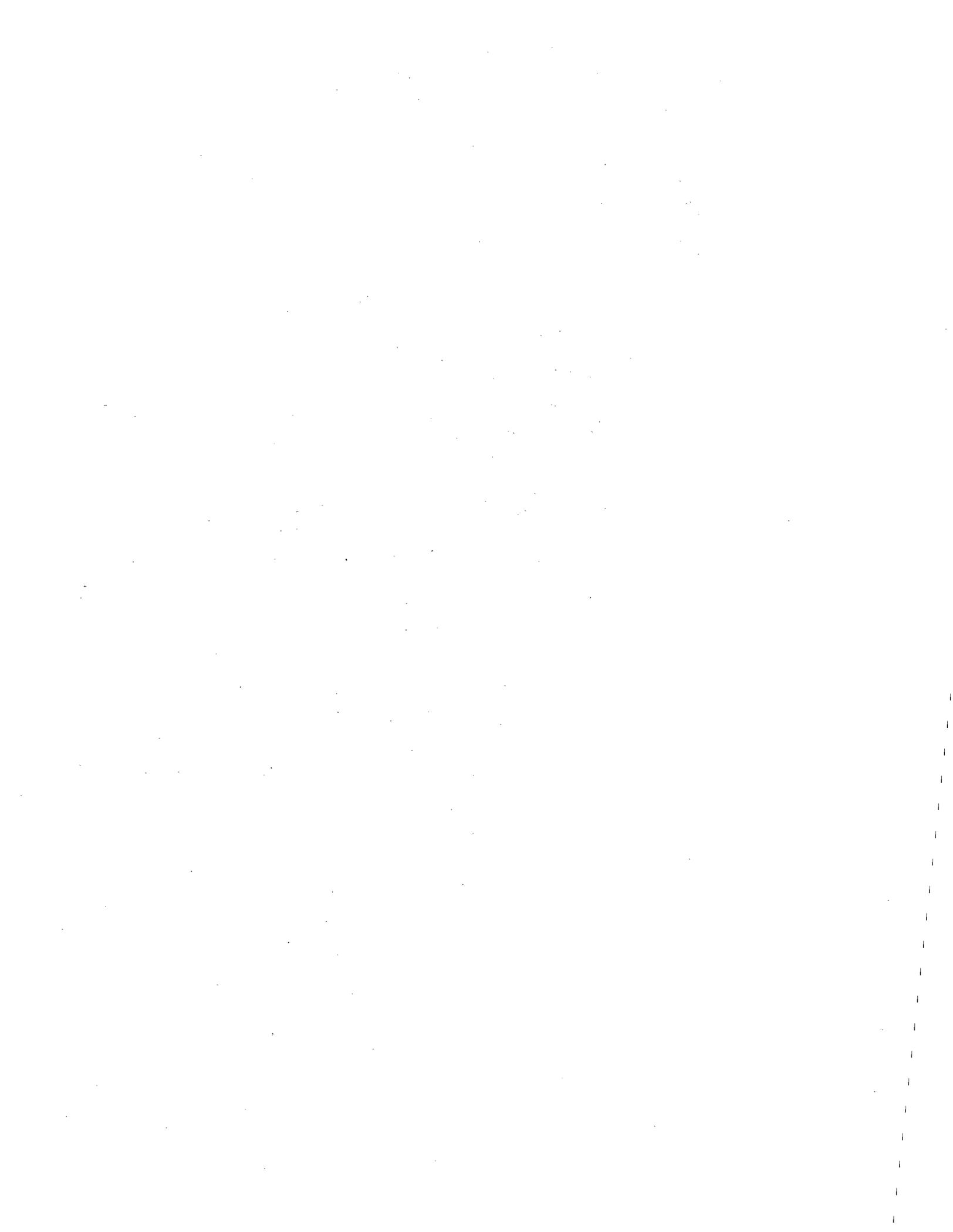


UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

ORNAMENTAL CROPS
SUPPLEMENTAL MARKET
INSPECTION INSTRUCTIONS
FOR
CERTIFICATION OF CARNATIONS UNDER SAF STANDARD GRADES

APRIL 1975

FRUIT AND VEGETABLE DIVISION
FRESH PRODUCTS BRANCH
WASHINGTON, D.C.



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SUPPLEMENTAL
INSPECTION INSTRUCTION FOR
CERTIFICATION OF CARNATIONS
UNDER SAF GRADE STANDARDS

CERTIFICATION OF CARNATIONS UNDER SAF GRADES

Inspection and certification of CARNATIONS as to meeting one of the (1)
specified SAF grades, when requested, shall be accomplished using the
SAF Standards Grades for Carnations. (See Figure 1 for parts of
carnation.)

Detailed instructions pertaining to Products Inspected, Distinguishing (2)
Marks and Condition of Pack are explained in Ornamental Crops, Market
Inspection Instructions, March 1974.

TOLERANCES

The SAF Standard Grades for Carnations has an allowance of 12% for (3)
blooms that fail to meet any specified grade. This allowance includes
off-size and off-length.

SAMPLING

Representative sampling is the key to inspection procedure. Inspection (4)
of ornamental crops is accomplished by the same method as fruits and

CARNATION

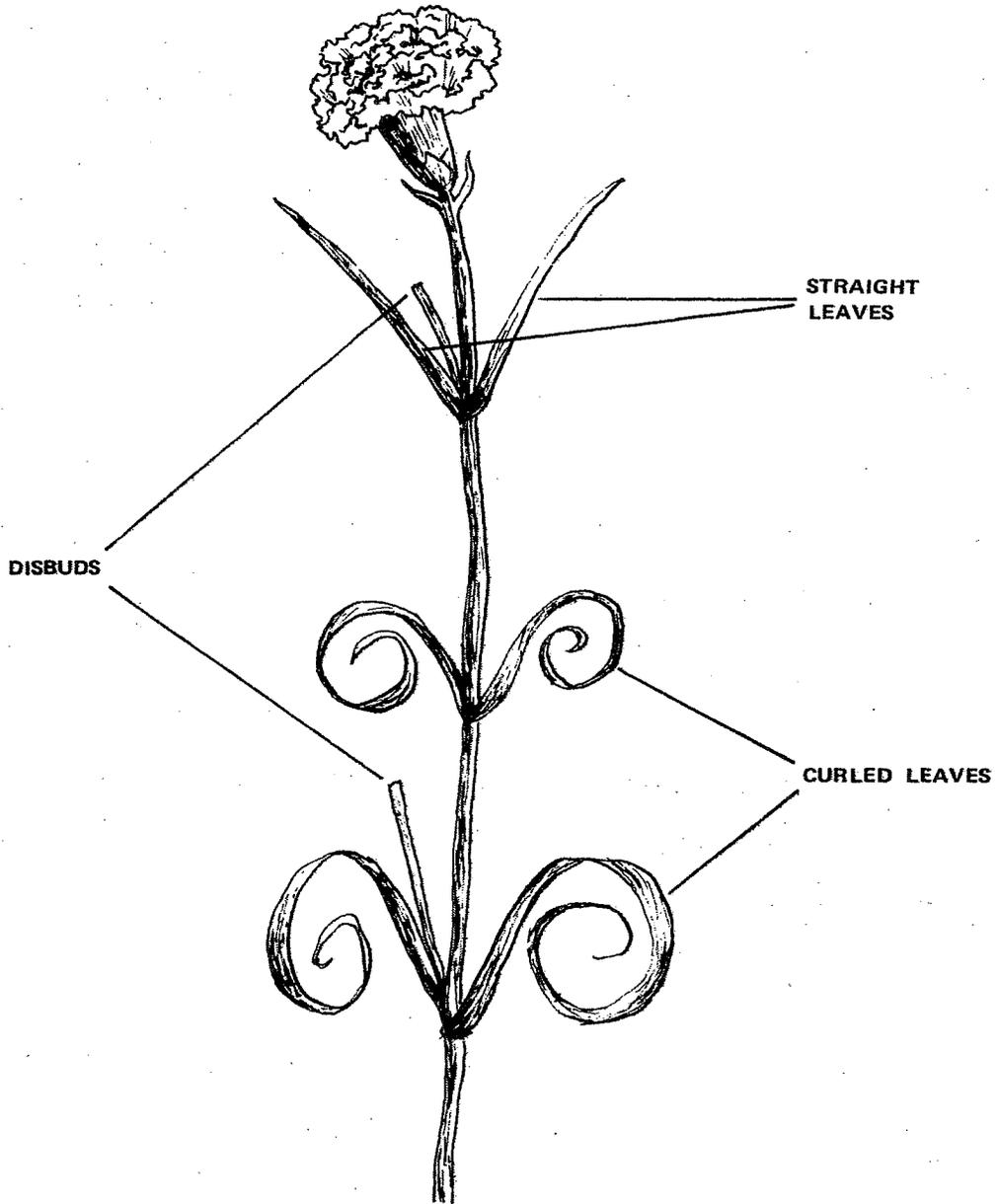


FIGURE 1.

vegetables. Selection of flowers to be used in grade determination should be predetermined and the sample should consist of not less than 100 flowers. Most Carnations are shipped 25 to a bunch with from 24 to 30 bunches per carton. Therefore, bunches selected should be taken from various locations within the package.

STEPS TO DETERMINE DIAMETER

- Step 1 - Determine the grade to be used by: color code, (5)
applicant's request, manifested, etc.
- Step 2 - Determine the degree of openness of the particular
bloom in question. (See Figure 2)
- Step 3 - Measure the diameter
- Step 4 - See if the diameter (Step 3) of the bloom meets
the requirements for the degree of openness (Step 2)
as set forth in the grade (Step 1).

SIZE

The minimum diameter requirement is determined by the openness of the (6)
bloom.

Diameter of bloom means the greatest dimension of the petals (7)
measured through the center of the bloom excluding one or two petals

that extend beyond the natural outline of the bloom. On "open" blooms, the guard petals*shall be held in a horizontal position when determining size.

- (8) The following terms shall be used to describe minimum diameter of blooms using general quantity terms:

Tight means the guard petals*are up and center petals up but fluffed.

Fairly tight means guard petals*are horizontal and center petals are up and fluffed.

Open means the guard petals*are horizontal or lower and center petals are out or down.

(*Guard petals are the petals in the first row adjacent the calyx leaves).

- (9) Each grade has a specified minimum diameter of blooms as shown:

<u>GRADE</u>	<u>TIGHT</u>	<u>FAIRLY TIGHT</u>	<u>OPEN</u>
SAF Blue Grade (I) (Fancy)	2 inches	2-1/2 inches	3 inches
SAF Red Grade (II) (Standard)	1-3/4 inches	2-1/4 inches	2-3/4 inches
SAF Green Grade (III) (Short)	No Requirement		

CARNATION TIGHTNESS OF BLOOM

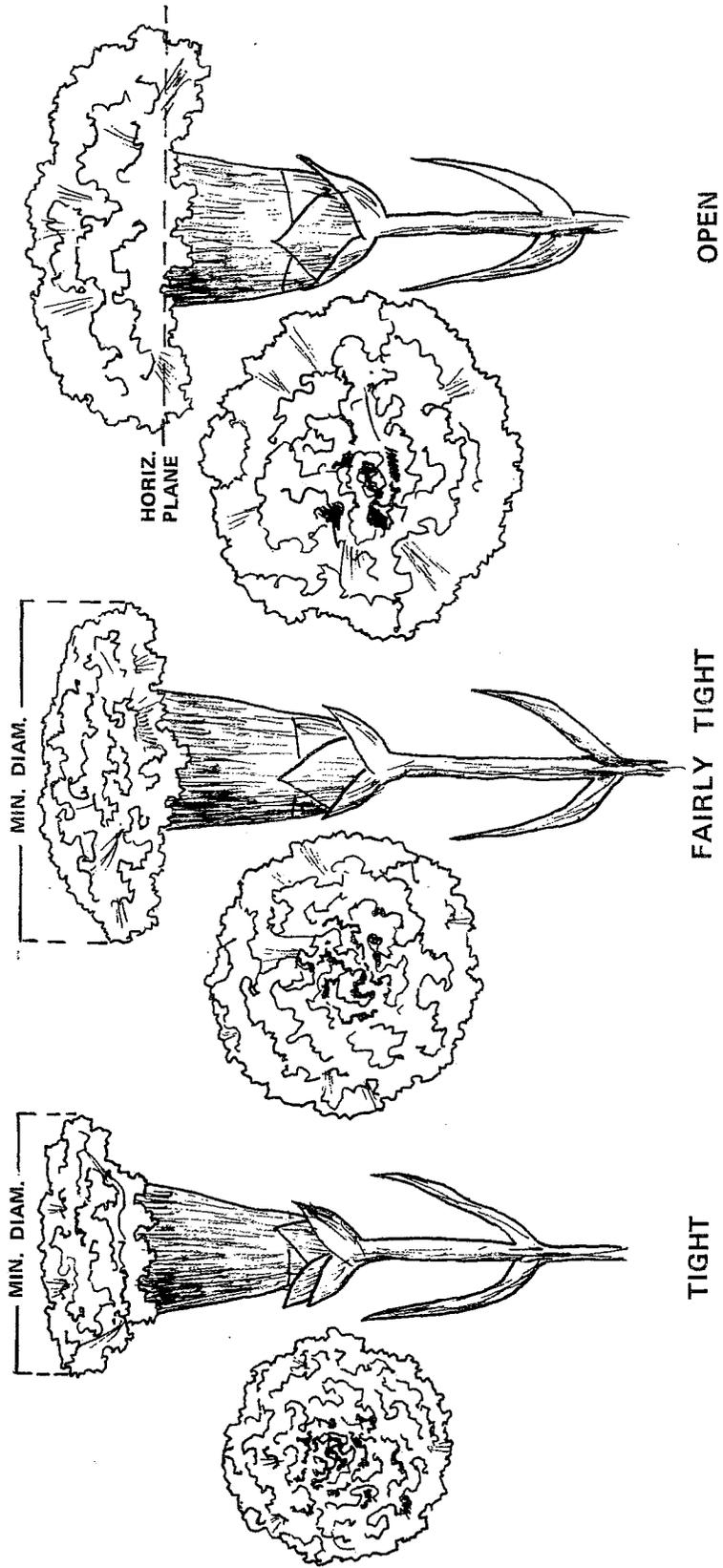


FIGURE 2.

(10) Each grade has a specified minimum stem length as listed:

<u>GRADE</u>	<u>MINIMUM LENGTH</u>
SAF Blue (I) Fancy	22 inches
SAF Red Grade (II) Standard	17 inches
SAF Green Grade (III) (Short)	12 inches

(11) Stem length: The length of stem shall be measured from the top of the bloom to the cut end of the stem. Report the range and the mostly to the nearest whole inch without rounding upward. In other words, 17-1/2 to 24-1/2 shall be reported as 17 to 24 inches.

(12) EXAMPLES:

Stems generally clipped to 22 inches- 7% under 22 inches. Most blooms tight (2 to 2-3/4 inches), some fairly tight (2-1/2 to 3 inches), few open. 3% under 2 inches in diameter.

Stems mostly clipped to 17 inches. Most blooms fairly tight (2-1/2 to 3 inches), many tight (1-3/4 to 2-1/2 inches). 2% under 1-3/4 inches.

QUALITY

(13) The following factors shall be reported under the quality heading

of the certificate as major defects affecting all grades:

Cleanness
Maturity
Mutation
Stem strength
Stem shape
Bull heads
Singles
Disbud
Side shoot (breaks)

Cleanness: Although not specifically defined in the SAF Standards (14)
cleanness should be reported on all lots. The terms clean, fairly
clean, slightly dirty, etc. should be used when they justly describe
the lot.

Mature: This is the stage the bloom has reached where, with proper (15)
handling, it will open fully.

Mutation: The normal growth habits of flowers are altered (16)
occasionally. This reversion appears in the form of different
colored petals. When 3 or more petals of a bloom are different in
color from the rest of petals, such as red petals in a pink bloom,
the bloom shall be counted as a defect.

- (17) Stem strength: The strength of the stem shall be determined by holding the stem one (1) inch above the minimum length for the grade in a horizontal position and the head shall not deviate more than 30 degrees below the horizontal plane with the natural curvature down. (See Figure 3). Stem strength should not be affected unless the flower is subjected to prolonged heat or cold and then the foliage will normally be affected to the extent that it would be classified as a major defect under discoloration. Inserting the flowers in water for extended periods of time will have little affect on stem strength.
- (18) Stem shape: The shape of the stem shall be described as straight when not more than slight curvature is noted; essentially straight when not more than two (2) curves are noted (this is the maximum permitted in all SAF GRADES) (See Figure 4); misshapen when more than two slight or one predominate curve is noted.
- (19) Bullhead: A "bullhead" is a bloom that has more than one (1) center and is characterized by a hard calyx.
- (20) Singles: A "single" is a bloom with an excessively low petal count for the variety as opposed to a full flower symmetrical in shape with good petal count.

STEM STRENGTH

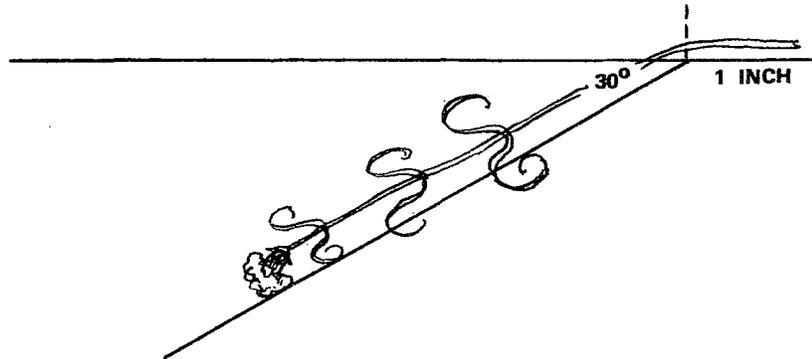


FIGURE 3.

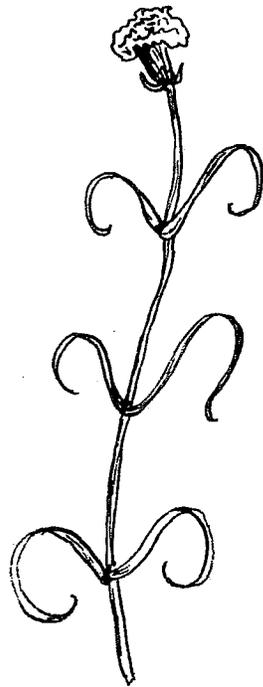


FIGURE 4.

(21) Disbud: Lateral single stem growths with buds on the end are called "disbuds". They generally develop from the axils of the upper leaves. (See Figure 1).

(22) Side shoot or breaks: A vegetative growth developing from the axils of the lower leaves that will develop into a flower if left on the plant is called a "break" or "side shoot". These are not considered defects but should be explained using general quantity terms if present.

(23) Cling side (slab side): Flowers which fail to open symmetrically, meaning the petals on part of the circumference are still straight up while the remaining petals have opened normally, are called cling sided blooms. (See Figure 6).

(24) Insect damage, discoloration: or damage by other means, to the extent that the appearance or marketing quality is affected, that can definitely be traced to shipping point through advanced drying or oxidation should be classified as quality factors.

(25) Examples:

Blooms mature, clean, generally red color. Stems straight, mostly strong. Average 2% fairly straight. Average 3% below required strength. Average 4% mutations with from 5 to 7 white petals.

CARNATION

SPLIT CALYX
MAXIMUM ALLOWED

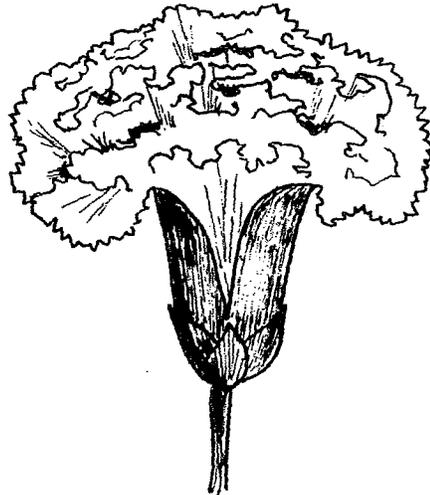


FIGURE 5.

SLAB-SIDED BLOOM

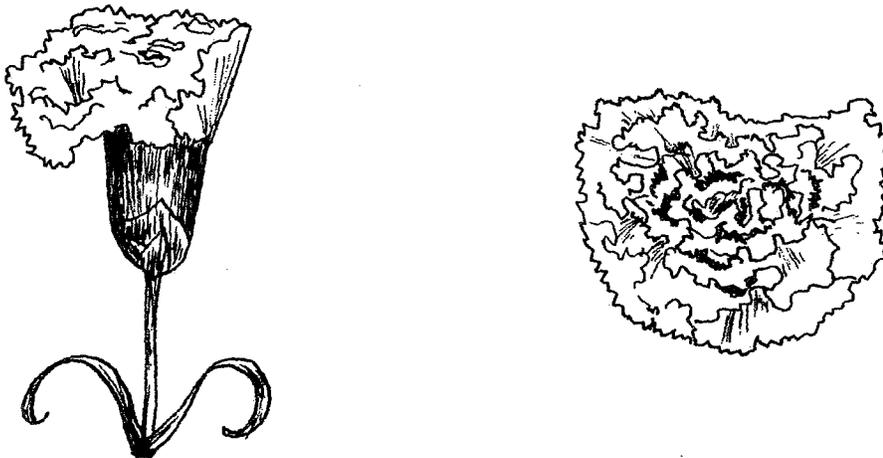


FIGURE 6.

Blooms mature, clean, generally red color. Stems straight, mostly strong. Range from 4 to 16, average 9% below required strength. Average 4% mutations with from 5 to 7 white petals.

Blooms generally mature, clean, stems straight, strong. Average 2% disbuds. Average 2% cling sided blooms.

CONDITION

- (26) The following factors shall be reported under the condition heading of the certificate:

Freshness (Petals & Foliage) (wilting)

Color of foliage and stems

Blown heads

Broken stems (heads)

Bruising

Discoloration

Insects

Sleepy

Split calyx

Decay

- (27) Freshness: Foliage and petal freshness should be reported as fresh, slightly wilted or wilted. Any amount of obvious wilting affecting either should be scored and reported. Leaves of the carnation may vary from straight to a tight curl through growing conditions and should not be reported. (See Figure 1)

Color of foliage and stems: The normal color of the foliage may vary (28)
from a pale green to blue-green to deep green and still be considered
as a healthy color, depending upon the variety. The same is also true
for tinted flowers which take on a cast similar to the tint used.

Blown heads: This term is used to describe an excessively open (29)
bloom and is considered "overmature". The petals at the center are no
longer tight and the calyx is very soft and has an empty feeling.

Broken stems: The stems are subject to snapping or breaking when (30)
handled rough, especially after exposure to cool temperatures. When
the break is within 4 inches of the bloom, report as "broken heads".
When the break is more than 4 inches from the bloom, report as
"broken stems". The stem does not have to be completely broken.

Bruising: Seldom will there be sufficient bruising to render a ship- (31)
ment to be of "no commercial value". Petals that become slightly
matted in transit will normally fill out after several hours in water.
Sharp folds or creases in petals are harmful. The edges will discolor
from lack of water due to the folds or creases. Report all bruising
including the degree and number of petals affected.

Discoloration: Discoloration of the foliage will not generally be (32)
a problem unless the stems have been allowed to dry out or the lot

is getting old. Petal discoloration may occur for many reasons ----- age, bruising, heating, freezing, etc. Describe the severity, location, color and other data relating to the problem.

- (33) Insects: The presence of insects or discoloration from fresh insect damage on stems or blooms shall be classified as a major defect and scored against all grades.
- (34) Sleepy: One of the more important condition factors that is characterized by the inward curving of the tips of the petals as opposed to the straight or outward curving of healthy blooms. A soft calyx and some loss of color in the petals usually accompanies the sleepy appearance. (Sleepy shall be deducted from maturity).
- (35) Split Calyx: Blooms are quite often banded with tape, rubber bands or wire ties to prevent the calyx from splitting. The calyx should not be split any further than the distance from the top of the inner leaves to the top of the outer or lower leaves (sepals).
(See Figure 5)
- (36) Decay: Decay may be found in various stages and is usually referred to as "Botrytis" by the trade. DO NOT NAME THE DECAY. Describe it, the location and severity. On the petals it appears as a tan or light brown patch with a somewhat watersoaked appearance. Advanced stages are usually accompanied by a light growth of gray spore masses.

Examples:

Stems and foliage fresh and green. Petals generally fresh. Range (37)
from 4 to 13%, average 7% slightly wilted. In most samples none,
some 1 to 4%, average 2% bruising affecting from 3 to 5 outer
petals on blooms adjacent sides and ends of cartons.

Stems fresh and green. Foliage generally fresh and green. Petals
mostly fresh. Generally samples show none, few 34%, average 3%
brown discolored leaves occurring in cartons marked "8-17".
Range from 9 to 31% average 24% decay of tannish brown discolored
areas with gray mold.

Stems and foliage fresh and green. Petals fresh. Average 3%
broken stems. Average 2% broken heads. Average 3% sleepy blooms.
No decay.

GRADE

Under the "Grade" heading of the certificate a definite statement (38)
pertaining to the lot as meeting or failing one of the SAF GRADES
and the reason for failing should be made.

EXAMPLES:

(39)

GRADE: SAF Blue Grade (Fancy) (I)

GRADE: SAF Red Grade (Standard) (II) 20 inch minimum

REMARKS: Above lot inspected on above basis at applicant's
request.

GRADE: Meets quality requirements but fails to meet SAF Blue Grade (Fancy) (I) account of condition.

GRADE: Fails to meet SAF Red Grade (Standard) (II) account of quality factors.

GRADE: Fails to meet SAF Green Grade (Short) (III) account of short length.

GRADE: Meets quality requirements but fails to meet SAF Red Grade (Standard) (II) account of condition.

GRADE: Meets quality requirements but fails to meet SAF Blue Grade (Fancy) (I) account of condition.

REMARKS

Explanatory or qualifying statements that are necessary to complete the certificate should be made under this heading. These include, but would not be restricted to the following:

1. When all or part of a shipment is unloaded at time of inspection, identify the lot by showing carrier name and/or number, freight, flight or airway bill numbers etc. Also, show the source of this information, such as applicant, carrier representative etc.
2. Restrictions indicating the portion of the lot examined when the entire lot is not accessible.

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When two or more certificates are issued on carnations in a mixed load, they should be linked together by proper reference under "Remarks."

When it is necessary to issue a corrected certificate it should be explained under "Remarks."

Examples:

REMARKS: Applicant states above lot arrived on TWA Flight 472 under Bill of Lading A-17647.

REMARKS: Inspection and certificate restricted to above lot which applicant states was unloaded from trailer number Arizona 72ZB45. For remainder of load see certificate numbers A-7968 and A-7969.