

Guidelines on key requirements for governments markets –vegetables–



**agriculture,
forestry & fisheries**

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Directorate Marketing

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES

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Definition of terms

Blemish:	Any external skin defect on the surface of the fresh vegetable that detracts from the appearance of the vegetable.
Bruise:	Any pressure wound that shows an indentation or results in discolouration directly under the skin, adversely affects the quality and is visually noticeable on the fresh vegetables during handling.
Compact:	Means that the flower clusters are massed tightly in the head and the flower stalks feel firm.
Damaged:	Means that there are blemishes that may detract from the appearance of the edible parts of the head.
Decay:	A state of decomposition, fungus development or internal insect infestation that detrimentally affects the quality of the fresh vegetables.
Fat and milky:	It means that the kernels are well developed, but not overripe or withered.
Foreign matter:	Any material or substance that does not naturally form part of the vegetable concerned and is visually noticeable.
Fresh (in cucumbers):	Means bright green and not old or shrivelled.
Fresh (in green mealies):	The mealie is not withered or dry or turning yellow or brown.
Fully grown (in cucumbers):	The cucumbers have a dull and smooth appearance. The nodules, if present, are not noticeable. Such cucumbers are well filled out at both ends, and give in to the slightest pressure of the thumb. The seeds are fairly hard and the marrow (flesh) is usually watery.
Injury:	Any wound or puncture that has pierced the skin of the vegetable and exposes the flesh, as well as insect puncture marks that have pierced the skin, with the exception of wounds or puncture marks that have become completely calloused.

- Loose:** The flower clusters of the head are beginning to lengthen, which causes the clusters to separate and the head to acquire an open appearance.
- Overripe:** Refers to the growth stage after that of a compact, properly developed head.
- Sufficiently fully to be cut into slices:** The cucumbers have a bright colour and that the nodules, if grown present, are not noticeable. The seeds are not hard; the flesh of the cucumber is firm and not wilted.
- The same cultivar characteristics:** The mealies in any one particular container should be of the same colour and growth habit.
- Too green:** The pips of the tomato are undeveloped and not yet covered with any jelly.
- Well filled:** The kernel rows show a fairly uniform development and that the appearance and quantity of the edible portion of the mealie should not be detrimentally affected by poorly developed rows.
- Well formed:** Refers to complying with the normal form of the cultivar.
- Woolly:** The surface of the head has a velvety or hairy appearance.
- Coordinating/“koördinerende” specification (CKS):** Refers to a South African technical specification written for a specific government institution for use in tender procedures.

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1. Introduction

Food safety has become an important aspect not only for large-scale farmers but also for smallholder farmers. Food safety standard measures can improve the farm management practices of smallholders and can be a tool for smallholders to access government markets and be integrated into the formal supply chains. However, meeting food safety requirements set by the government markets remains a challenge to the smallholders with low a level of literacy and financial means.

This guide focuses government market requirements for food supplies by food producers. This is to ensure that food supplied at government institutions is of good quality, safe, wholesome, nutritious, appropriate and is culturally acceptable for all clients within the various government institutions. Furthermore, the food supplied should provide a normal diet that meets the nutritional, psychological and physiological needs of individuals within the various government institutions.

The guide can be used by farmers who want to understand the standard requirements set by government institutions, by trainers who implement the requirements on smallholder farms and by any non-technical person who wishes to understand what the government standard requirements regarding food supply are about. However, topics such as supply chain management requirements and preferential procurement regulations are not covered and are beyond the scope of this guide.

2. Purpose

The purpose of these guidelines is to give clear guidance to producers and other value-chain role players on the expected quality of all vegetables required by the various government institutions.



3. Legislation

The products should comply with all the requirements as stipulated in the following Acts and regulations:

3.1 Acts

◆ **Agricultural Product Standards Act, 1990 (Act No. 119 of 1990)**

– To provide for the control over the sale and export of certain agricultural products, control over the sale of certain imported agricultural products, control over related products and for matters connected with.

◆ **Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972)**

– To control sale, manufacture and importation of foodstuffs, cosmetics and disinfectants and to provide for incidental matters.

3.2 Regulations

◆ **Government Notice No. R198 of 30 July 1999**

– Regulation governing general hygiene requirements for food premises and the transport of food.

4. General key requirements

The guidelines on specifications for perishable foods ensure that only the stock or food items that comply with required standards for acceptable quality are received and used in the food service units.

- Perishable foods should be delivered according to specifications for temperature, transportation, delivery times and specified delivery areas as indicated by the ordering officer.
- Food items not listed in the guidelines should be delivered in accordance with normal trade practice.



- Stock should be available for a similar inspection at any stage of preparation.
- All foods delivered in terms of a contract should be subject to inspection and approval by inspectors of the Directorate: Food Safety and Quality Assurance of the Department of Agriculture, Forestry and Fisheries or any assignee designated in terms of section 2(3)(a) of the Agricultural Product Standards Act, 1990, or medical health officers, where and when available, at the dispatching or delivery points.
- Whenever tenders are submitted for any article to which the Foodstuffs, Cosmetics and Disinfectants Act, 1972, and/or the Agricultural Product Standards Act, 1990, and any regulations made in terms thereof apply. This means that, if a contract has been entered into for any article, all such articles should be delivered strictly in terms of the provisions of the Acts mentioned.
- The procedure concerning the taking and testing of samples of delivered products, as set out in these Acts, should be complied with.
- The department reserves the right to conduct inspections of the production process, the product and the premises of the supplier without prior notification at any working time during the contract period or prior to entering into a contract. In the event of a deviation being observed, the entire consignment should be rejected.
- Generally, all vegetables should be free from the following:
 - Decay;
 - Blemishes
 - Bruises;
 - Foreign matter including soil;
 - Foreign odours;



- Insect damage and injury;
- Damage by any disease.
- The name of the product, class, size, use-by date and the address of the producer should appear on the packaging.

5. Key vegetable requirements

5.1 Flower vegetables

5.1.1 Artichokes

◆ Physical requirements

- The stems of artichokes should be cut off cleanly and not be longer than 100 mm.

5.1.2 Asparagus

◆ Physical requirements

- The asparagus should be of good quality, well formed, compact and practically straight;
- Closed at the tips;
- Should not have discolouration because of oxidation or age.

◆ Classes of asparagus

- Class 1 and Class 2 asparagus are divided into the following three groups according to colour:
 - ÷ Violet asparagus – the tip of the asparagus is of a pink to violet colour while the rest of the shoot is white;
 - ÷ Violet/green asparagus – part of the asparagus is of a violet and green colour;
 - ÷ Green asparagus – the tip and all or the largest part of the shoot is of a greenish colour.



5.1.3 Broccoli

◆ Physical requirements

- The heads should be green, compact, free from interleaves, not woolly or overripe;
- Free from damage by self-heating or other factors!
- The stem should be cut neatly just below the junction with the outer leaves.

◆ Packaging

- Broccoli should be packaged in boxes or transparent plastic bags.

5.1.4 Cauliflower

◆ Physical requirements

- The heads should be snow white or creamy white, compact, free from interleaves, not woolly or over ripe, free from damage by self-heating or other factors;
- The stem should be cut neatly just below the junction with the outer leaves;
- The overlapping leaves of each head should be fresh and green and of sufficient length to protect the head.

◆ Packaging

- Cauliflower should be packed into boxes or transparent plastic bags.

5.1.5 Cucumber

◆ Physical requirements

- Cucumbers should be well formed, fresh and firm and be sufficiently fully grown to be sliced, but not fully mature or over ripe;
- More than two thirds of the surface of the cucumber should have a green colour;
- Cucumbers should be free from decay, soil damage, frost damage, virus or any other disease or damage caused by insects or harvesting practices.



◆ Packaging

- Cucumbers packed into the same container should be roughly the same size.
- Cucumbers should be individually wrapped in transparent plastic wraps and then packed into perforated boxes.

5.2 Legumes/Pod vegetables

5.2.1 Green beans

◆ Physical requirements

- Beans in a container should all have the same characteristics and should be roughly the same length;
- Pods should be well developed and firm. Overripe pods or pods with defects should be excluded;
- Pods should have a green colour, depending on the variety, and should be fresh, free from leaves or stems;
- Trimmed green beans must be clearly marked as “topped and tailed” or any other suitable expression indicating that the beans have been trimmed;
- In the case of green beans classified as Class 1:
 - ÷ the pods should be closed, tender, young and turgescient;
 - ÷ the seeds should, if present, be small and soft; and
 - ÷ the pods should be free from rust spots.

◆ Packaging

- Green beans should be packaged in boxes or transparent plastic bags.

5.2.2 Green peas

◆ Physical requirements

- Peas in any one particular container should have the same class characteristics and be roughly the same size;
- Pods should be well developed and firm;



- The pod should be smooth, have a uniform green colour and may not show signs of wilting and fading;
- Pods should be in good condition, fairly clean and without discolouration or stains.

5.3 Root and tuber vegetables

5.3.1 Beetroot

◆ Physical requirements

- The beetroot should be fresh, well developed and firm, fairly clean and without any fibres;
- Beetroot should have a regular shape and be free from secondary roots or damage caused by cracks, sprouts, cuts or any other factors;
- The leaves should be cut off and may not be longer than 25 mm;
- Beetroot may be sliced, diced, grated or whole when delivered;

◆ Packaging

- Beetroot should be packaged in transparent plastic or mesh bags.

5.3.2 Carrots

◆ Physical requirements

- The standards and requirements for carrots of the varieties (cultivars) grown of *Daucus carota* L. are as follows:
 - ÷ free from sun-scorch;
 - ÷ fresh and firm;
 - ÷ not be malformed or forked or have secondary roots;
 - ÷ not be woody and have fresh, green and sound foliage and should not be longer than 50 mm;
 - ÷ if trimmed, it should be evened or cut off at the top of the root, without damage.



◆ Packaging

- Carrots should be packed with foliage or without foliage, provided that the foliage should be fresh.
- Carrots should be packed into mesh bags, plastic bags or boxes.

5.3.3 Turnips

◆ Physical requirements

- Turnips in any one particular container should have the same cultivar characteristics and a good colour;
- The turnips should be young, fresh and firm, with fresh, juicy flesh and may not be woody or fibrous;
- The turnips should be washed, uniform, free from secondary roots and growth cracks;
- The turnips should be free from decomposition and damage caused by disease, insects, bruising, self-heating or any other factors;
- The leaves should be cut off neatly.

5.3.4 Onions

All products delivered should comply with at least the specifications for Class-II onions as set out in Government Notice No. R. 1268 of 19 June 1981.

◆ Physical requirements

- Onions should be well developed, dry, firm and clean;
- Onions in any one particular container should have approximately the same size and colour;
- Onions should be free from dry leaves, long stems and roots, thick neck, loose bracts, seed stems or sprouts.

◆ Packaging

- Onions should be packed into mesh bags or transparent plastic bags.

5.3.5 Garlic

◆ Classification

- Fresh garlic (garlic with a green stem and with the outer skin layers of the bulb still fresh).
- Semidry garlic (garlic with the stem and outer skin layers of the bulb not completely dry).
- Dry garlic (garlic in which the stem, outer skin layers of the bulb and the skin layers surrounding each clove are completely dry).

◆ Physical requirements

- Good-quality garlic should be whole, firm, mature and well cured (not shattered, soft, spongy);
- It should be properly cleaned.

◆ Packaging

- Garlic should be packed into containers that:
 - ÷ are intact, clean, suitable and strong enough for the packing and normal handling of garlic;
 - ÷ do not impart a taste or odour to the garlic;
 - ÷ are pockets, cardboard cartons, boxes or transparent plastic bags.

5.3.6 Potatoes

All products delivered should comply with at least the specifications for Class-I potatoes as set out in Government Notice No. R. 2119 of 1 October 1982.

◆ Physical requirements

- Class I potatoes should:
 - ÷ have an attractive appearance, be well formed and free from soil or sprouts;
 - ÷ not be damaged by insects or disease, or in any other way;
 - ÷ be free from decomposition or decay, hollow heart and foreign matter;



- ÷ have no greening, and not be wilted or watery;
- ÷ not be affected by nutgrass, other plants, or brown fleck;
- ÷ not be malformed.

◆ Packaging

- Potatoes should be packed into opaque, brown bags that are intact and strong.
- Potatoes may also be packed either cubed or diced into strong transparent bags.

5.3.7 Sweet potatoes

◆ Physical requirements

- Sweet potatoes should be fairly clean, free of soil, and in every respect suitable for human consumption;
- Sweet potatoes should be well formed, fully grown and may not be sprouting, defective, wilted and sweet potatoes in any one particular container should have the same class characteristics.

◆ Packaging

- Sweet potatoes should be packed into mesh bags.

5.3.8 Tomatoes

◆ Physical requirements

- Tomatoes should be well formed, firm, clean and without internal cavities;
- Tomatoes should not be overripe or too green and should have a diameter of at least 50 mm.

● Packaging

- Containers into which tomatoes are packed should:
 - ÷ be intact, clean, suitable and strong enough;
 - ÷ not impart a taste or odour to the tomatoes;
 - ÷ be perforated boxes, transparent plastic bags or crates.



5.4 Leafy vegetables

5.4.1 Cabbage

◆ Physical requirements

- The heads should be fresh, clean and not wilted;
- The central part should be at least 150 mm in diameter, compact and firm and without flower shoots;
- Parts of the protruding stems of fresh cabbage and all loose, damaged or broken outer leaves should be cut away. The stem should not protrude more than 15 mm below the outer leaves;
- In order to ensure a certain degree of protection for the heads, a few outer leaves should be left, provided they close up fairly tightly for the particular cultivar.

◆ Packaging

- The cabbages should be packed into mesh bags.

5.4.2 Lettuce

◆ Physical requirements

- The heads should be fresh, clean, crispy, well formed, firm (the inner leaves compacted in the shape of a heart) and not folded or loose;
- The outer protective leaves should not be severely damaged;
- The lettuce should not have a bitter taste;
- The lettuce should not have two heads or show any outward signs of seed stems;
- The stalk of the lettuce should be cut off directly beneath the outer leaves.

◆ Packaging

- The lettuce should be packed whole, fresh or cut into perforated boxes or transparent plastic bags.



5.4.3 Spinach

◆ Physical requirements

- The spinach should be dark green in colour, firm and crispy;
- Free from floral stems;
- Fresh and show no sign of withering.

◆ Packaging

- Spinach should be packed in perforated boxes or transparent plastic bags.

5.5 Pumpkins

The scope of pumpkin includes Hubbard, gem squash, butternut and flat white pumpkin (“Boerpampoen”).

5.5.1 Gem squash

◆ Physical requirements

- Gem squash should be round, green and firm;
- Free of cracks.

◆ Packaging

- It should be packed into mesh bags.

5.5.2 Other pumpkins

◆ Physical requirements

- Products in every batch should have the same cultivar characteristics, have a good colour and be fairly uniform in size;
- The products should be clean, fresh, firm, in good condition and not over ripe;
- Should have a yellow interior.

◆ Packaging

- Pumpkin should be packed whole or cubed.
- Packed into mesh or transparent plastic bags.

5.6 Green mealies/Sweet corn

◆ Physical requirements

- Green mealies in any one particular container should be of the same cultivar characteristics, and be roughly the same length;
- The mealies should be well formed and be free from damage caused by fire;
- The mealie cob should have practically no loose leaves and there should not be more than 25 mm of the cob below the point where the outer leaf is attached to the cob;
- The mealies should be filled with fat and milky kernels and should be well covered with fresh green leaves.

◆ Packaging

- Green mealies should be packed into mesh bags or crates.

5.7 Processed vegetables

◆ Scope

- The specification covers all types of preprepared vegetables to be used in the preparation of various types of dishes such as vegetables, salads, soups and stews.

◆ Physical requirements

- The processed vegetables should be of high quality and suitable for human consumption. It should be free of foreign matter and odours;
- The vegetables should be prepared, packed and transported frozen at all times to preserve the cold chain.
- The vegetables should be free from damage because of sun-scorch and rot.



◆ Microbiological requirements

- The products should be microbiologically safe for human consumption;
- The company must, at its own cost, twice a year submit to the sub-directorate a microbiological report from an independent, established laboratory of at least the following types of preprepared vegetables: green beans, cut carrots julienne, potatoes cubed and spinach.

◆ Microbiological/Bacterial requirements:

- Total plate count < 500 000
- Enterobacteria < 1 000
- Staphylococcus aureus < 100
- Yeasts and moulds < 50 000
- Escherichia .coli – absent
- Salmonella – absent
- Campylobacter – absent

◆ Packaging

- The product should be packed into thick plastic bags of at least 60 micron.
- The company and product name, and prepreparation/production date, as well as a best before date should be visible on the packaging for storage and rotation purposes.

◆ Transport

- The product should be transported from the site of prepreparation to the government institution at a temperature of 4 to 8°C.
- The delivery truck must be cooled and not only insulated. A truck with a canopy is therefore unsuitable.
- The product should be fresh and crispy with an internal temperature of 5 to 6°C at the time of delivery.