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Production of Cayenne Chillies (Dried and Wet)

Capsicum annuum- Frutescence L. Long Slim Cayenne Peppers

Hot long slim cayenne peppers- Spice full pods red with calyx attached

Cayenne Chillies - Soil Requirements

GROWING PERIOD

Fruit of most cultivars will attain their full size within 70 – 80 days from transplanting, when they may be harvested green. A further fortnight may be necessary for chilli and paprika fruit to turn red; sweet peppers could take a further two to three weeks before they colour op properly. Picking the fruit in the green stage induces further flowering and higher yields. The bulk of the crop is usually harvested over about two months, but harvesting may continue for several months, depending on the level of virus incidence and fertilization program followed. The later developing fruit become smaller and tend to have a poorer shape, both of which adversely affect prices. A continuing light crop can be borne for several months until cold weather stops growth.

TIME OF PLANTING

These crops are usually transplanted, often from seedlings raised under warm, protected conditions, or from seedlings produced in warmer areas. Early planting, as soon as temperatures become favorable for growth, is generally preferable to planting later, because of a longer favorable production season, and because later plantings are often more severely affected by virus diseases.

A spread of planting times is seldom used for paprika, which is produced almost entirely for processing, and plantings is generally confined to the August to September period.

Plant spacing:

Open field
The single most important factor when making a decision around plant population is the type of chemical spraying system- or method that the grower is going to use for the duration of the crop. Everything should be designed around this implement so as to get in between rows when spraying to effectively control pests and diseases. Plant population is around 30 000 plants per Ha. This is done by normal single line rows, e.g. 1.5 meters in between rows by 200mm between plant spacing as per table 3 underneath.

Spacing of the crop
Plant the plants 100mm's apart in rows of either 1 meter apart or two rows 0.5 meter apart with a wider 1.5 meter to the next; the so-called railway line (this could be adjusted according to the equipment that is used). The last-mentioned method makes harvesting much easier and limits damages to the plants during the harvesting. Irrigate again after planting

IRRIGATION

Pepper plants are drought resistant but fruit set tends to be depressed by any extreme environmental condition. Irrigation is essential for pepper production, as peppers can require up to 600 – 700 mm of water during the growing season. Peppers are known to be sensitive to moisture stress at flowering and fruit setting. If plant growth is slowed by moisture stress during blooming, blossoms and immature pods are likely to drop. Blossom end rot can result when plants are stressed when young fruit are developing rapidly. Water-stressed plants generally produce more pungent pods.
Limiting the water applied to pepper during the period of rapid vegetative growth reduces the final yield.

When estimating when to water by watching the pepper crop, the leaves are the best indicator. During hot, drying conditions, expect swiftly growing plants to wilt late in the afternoon, even on the first day after irrigation. Wilting signs begin to appear earlier in the day as soil dries. When plants wilt in the early afternoon, irrigate. Water may have to be applied on a 5 – 7 day schedule in summer to prevent blossom end rot. Decreasing irrigation frequency at the end of the season will promote ripening and improve red fruit colour.

Excessive irrigation can be as harmful to the crop as too little water. *Phytophtora* root rot disease can develop form water standing in the field for more than 12 h. Frequent light irrigation's are better than infrequent heavy irrigation's with peppers because of their shallow roots.

IRRIGATION PROGRAM FOR CHILLIES,

Table 3. Irrigation program for Capsicum crops.

WEEKS AFTER PLANTING	RECOMMENDED IRRIGATION PROGRAM ACCORDING TO:			GENERAL IRRIGATION PROGRAM	
	ROOT DEPTH (mm)	SOIL MOISTURE DEPLETION ALLOWED (%)	CROP FACTOR	INTERVAL BETWEEN IRRIGATIONS (DAYS)	IRRIGATION AMOUNT (mm)
At planting – soil should be wet to a depth of about 60 cm. Directly after transplanting – apply 20 – 30 mm water.					
0 – 2	400	20	0.3	2	10–15
3 – 6	500	30	0.4	3 – 5	15–25
7–15	600	40	0.6	5 – 7	30–40
16->	600	50	0.8	7-10	25–35

NOTE:
Sandy soil – more frequent light irrigations are necessary.

Clay soil – longer intervals between irrigations with higher applications will be needed. Climatic conditions will also influence the intervals and rates of application of the above mentioned irrigation program.

Climatic conditions:
Climate is one of the most important factors when determining planting times. Production of a pepper crop depends on the length of a growing season with optimal temperatures.

- The plant itself stops growing at temperatures below 10° - 12°C, and at 6°C, the leaves can die and flower abortion will start.
- The same will happen when temperatures increase to over 35°C.
- A pepper crop requires very stable temperature ranges with minimums and maximums not being too far apart.
- Temperature variation might result in poor fruit quality or reduced yields. Optimum temperatures would be:
    - Day time: 25 - 28°C
    - Night time: 16 - 18°C.
    - Long periods of overcast weather can also result in poor fruit set and loss of a crop.

Pollination:
In general, pepper plants are more susceptible to cold than most vegetable types. Low temperatures can cause plants to lose flowers and buds, which can lead to dramatic yield losses. Capsicums are self-pollinating, and 60 -70% relative humidity is considered optimal for good pollination and fruit set. With humidity levels of 90% or higher, pollen may not shed. As less pollen is produced on cloudy days, better pollination is required at these times to ensure good fruit set. Good pollination improves fruit quality and yield

Planting periods and planting detail:

The earliest period for seedling establishment would be when the soil and air temperatures at least meet the minimum requirements for plant growth. (Western Cape – October to December)

The seedlings should be transplanted into damp soil (which has reached a temperature of 18°C) during the coolest time of the day.

Bury plant roots firmly into the soil, but not more than half the height of the seedling. Apply water to the field or at the base of the plants soon after transplanting. If plastic mulch is used it must be placed before transplanting.

Crop Stages:

Developing stage	Week 1 – 3	10 days after transplant

Vegetative stage	Week 4 – 6	10 days up to 20 days
Flowering stage	Week 7 – 8	20 to 55 days
Fruit setting stage	Week 9 –11	30 to 150 days
Production stage	Week 12-end	60 days to 180 days possible

The harvest's moisture needs change with each stage where upon different crop factors would apply.

To determine how to irrigate and obtain the optimal harvest, combine the climate, soil and the crop = Crop factor.

For irrigation purposes, the growth of peppers can be divided into fivegrowth stages.

Stage 1: Establishment	Can last up to 2 weeks. Seedling establishment takes place and plants start to grow actively. Low amounts of water are used.
Stage 2:After seedling establishment to just before first flower, it is highly recommended (although a fine line of management) to reduce water drastically.	It will force the roots to grow aggressively deeper into the soil looking for moist. This will help the plants at fruit set stage to handle difficult and stress related periods better due to the increased roots.
Stage 3: Vegetative growth	Development of first flowers and fruit. Double the amount of water is used compared to the previous stage.
Stage 4: Fruit set Growth is at its highest.	Water usage at this stage is at its highest during the lifespan of the crop.
Stage 5: Ripening and harvesting	Very high loads carried on the plant. Water usage starts to decrease

The general standard is an average of 40mm's for every 10 days of the month over 5 months, which equals 600mm's. It is important to ensure that the soil remains damp the whole time during the flowering and fruit-set stage, especially when it is very warm.

When temperatures exceed 32°C the plant could start shedding its flowers if it is not kept moist, while very warm temperatures during fruit-set would result in stress that could cause high pungency.

- The supply of adequate water to the roots of a pepper plant is critical.
- Under- or over irrigation can have a devastating effect on the outcome of the crop. It is therefore very important to apply water at optimal times.
- More frequent light irrigations are needed on sandy soils. Higher applications with longer intervals will be needed on clay soils.
- Too little water might lead to:
    - Sub-optimum yields.
    - Decrease in the photosynthetic rate.
    - Plants developing stunted growth.
    - No production of flowers.
    - Low percentage fruit set.
    - Slow fruit development.
    - Small fruit sizes.
    - Poor quality.
    - Flower abortion.
- Too much water might lead to:
    - Not enough oxygen in the soil.
    - Plants becoming wilted.
    - Root diseases becoming prevalent.
    - Stunted plant development.
- When scheduling irrigation, the size of the root system at the time of irrigation needs to be taken into account.
- In general, the root system can be compared to the aerial growth of the plant.
- The roots spread into the soil at a similar rate to which the aerial growth develops.
- Most pepper roots occur in the top 500 – 600 mm of soil level, even at maturity.
- For this reason irrigation should be monitored at this level with micrometers.
- Deep, thorough irrigations are preferable to light and regular watering intervals.
- Drip or flood irrigation is preferable to overhead irrigation, due to susceptibility to foliar diseases.
- The amounts of water used will vary depending on the climatic conditions.
- During the cooler months peppers require about 25mm per week and this might increase to 50mm under very hot, windy and dry conditions.

FERTILIZERS

Peppers require adequate amounts of most major and minor nutrients. The nutrients normally used most on peppers are nitrogen (N) and phosphorus (P).

These crops are not very sensitive to acid soils but liming is beneficial. The soil must be analyzed beforehand and deficient nutrients supplemented according to the analysis results.

FERTILIZER PROGRAM FOR CHILLIES,

Table 4. Fertilizer program for Capsicum crops.

TIME OF APPLICATION	AMOUNT OF ELEMENT TO BE APPLIED ACCORDING TO SOIL ANALYSIS RESULTS	GENERAL RECOMMENDATION (NO SOIL ANALYSIS DONE) - (kg / ha)
Before or at planting	15–25%N 100%P 50%K	600-800 kg 2:3:4 (30) = (40-50kg N, 60-80kg P, 80-100kg K). **or** 400-600 kg 2:3:2 (30)+Zn = (30-50kg N and K, 50-75kg P) **or** 300-450kg MAP + 100-150kg KCl = (30-50 kg N, 65-100kg P, 50-75kg K).
3 weeks after planting	25%N	175 kg LAN = 50 kg N
6 weeks after planting	25%N	175 g LAN = 50 kg N
9 weeks after planting	25%N 50%K	175 kg LAN + 100 kg KCl = (50kg N; 50kg K)
SUB TOTAL	90–100%N 100%P 100%K	N = 150-200 kg/ha P = 50-100 kg/ha K = 100-150 kg/ha
Additional fertilization: According to the health status of plants and market trends **± 15 weeks after planting** **± 20 weeks after planting**	 10–15%N 10–15%N	 70-100kg LAN = 20-30kg N 70-100kg LAN = 20=30kg N
TOTAL	110–130%N 100% P 100%K	N = 150 – 275kg/ha P = 50 – 100 kg/ha K = 100 – 150 kg/ha

Table 5. Target levels for tissue leaf analysis for sweet peppers.

	NORMAL RANGE	DEFICIENCY
Nitrogen (N)	3.5 –5.5%	<2.0%
Phosphorus (P)	0.35 – 0.8 %	<0.2%
Potassium (K)	3.0 –6.0%	<2.0%
Calcium (Ca)	1.5 –3.5%	<1.0%
Magnesium (Mg)	0.35 – 0.80 %	< 0.30 %
Boron (B)	30 – 90 ppm	< 20 ppm
Iron (Fe)	80 – 200 ppm	< 60 ppm
Manganese (Mn)	100 – 300 ppm	< 20 ppm
Zinc (Z)	40 – 100 ppm	< 25 ppm
Sulphur (S)	0.37 %	n/a
Molybdenum (Mb)	6 – 20 ppm	< 4 ppm

FOLIAR FEEDING PROGRAMME

Foliar feeding program as proposed by Hygrotech. A foliar feeding program is not a necessity but will profit the plant during stages when conditions are optimal for growth and the plant cannot take up nutrients fast enough through the roots. It can also be used to alleviate micro-nutrient deficiencies should they occur.

Above programme is for 1 ha.

	NITRO-SPRAY	NU-FILM P	HYPERFEED	FOSFASPRAY	POTASPRAY
At Transplant	Apply 250ml/plant of a 2L/400L water Kic-Start solution				
28 d after transplant	2L	120 ml			
		120 ml			
		120 ml	2.5 kg	1.5 kg	
		120 ml	2.5 kg	1.5 kg	
		120 ml			2.5 kg

CALCIUM UPTAKE

Peppers are very sensitive to Calcium deficiency. Blossom end rot is a major problem in pepper production and calcium uptake needs to be managed carefully.
Calcium is not taken up actively by the plant but is instead taken up with the inflow of water for transpiration. Ca uptake is a function of rate of water uptake (transpiration) and Ca concentration in the feed water.
Because Ca enters the plant along with the transpiration stream, most of the Ca ends up in the leaf where most transpiration takes place. Transpiration form the fruit surface does occur, but this is low in comparison with that from leaves,

with the result that Ca movement into fruit is limited. Under conditions of high transpiration rates the percentage of Ca uptake entering the fruit decreases further.
When transpiration has stopped, however, diffusion can play an important role. This usually happens at night when the new stomata are closed. The amount of Ca, which will enter a fruit by means of diffusion, is a function of the concentration of Ca in the plant sap. It is, therefore, important that the Ca level within the plant sap is high at the end of the day. This is achieved by a high Ca concentration in the feed water and active transpiration during the late afternoon. Increasing the EC during the afternoon irrigation can also be considered.
The use of fine sprinkler "misters" to cool the plants will also increase RH and help to increase the proportion of Ca moving into the fruit. The use of sprinklers increases the risk of disease and it is essential to treat the water sprayed on the plants with a disinfectant such as Sporekill.

Introduction to insect control

Apart from nematodes and red spider mite, capsicums are seldom severely affected by pests. There are registered chemicals for use on peppers against aphids, red spider mite and thrips.

For Organic production:

- Mulching will help to reduce weeds,
- Reduce insect populations,
- Maintain healthy plants which can resist infection.
- The planting area should be kept free of weeds.

Furthermore, it is important to:
(1) Remove suspected virus-diseased plants (mottled leaves, stunted) from the field.
(2) Rotate chilli with other crops (eg. tubers and legumes).

If required, the following treatments are recommended:

- **Aphids.**

Chilli solution with OMO soap as a wetting agent is effective in controlling aphids. Proportion is 0.5 kg of dry chilli fruits pounded in a mortar added to 20 litres of water and a little OMO soap solution. Apply once every two weeks when aphids are seen in the field.

- **Control Methods for Thrips, Aphids, Whiteflies and Bud Mites in Seedlings.**

Aphids, whiteflies, thrips and bud mites are frequently referred to as "soft-bodied insects" which describes the general characteristic of their exterior. The soft bodies

are a weakness that farmers can use to their advantage. Soaps, insecticidal soaps and horticultural oils can be useful in controlling a moderate infestation of these soft-bodied insects. Horticultural oils are usually a type of highly-refined petroleum oil but can also be plant-based. Horticultural oils kill insects by suffocating them. The oil blocks the pores through which insects breathe. They also act on insect eggs. In other insects, horticultural oils inhibit the insect's ability to feed, causing them to starve to death. Spraying the underside of leaves with a mild solution of water and a few drops of dish soap can also be useful. This soapy water solution should be applied every 2-3 days for 2 weeks. The soap dissolves the waxy protective coating from these soft-bodied insects, causing dehydration and death.

Maintaining weed-free fields and reducing vegetation around the edges of fields can also be useful because some of these insects on weeds, especially grasses, before moving to Chilli plants

The most common insert problems for commercial farmers:

Thrips:	They build a resistance against chemical agents and it is advisable to use different agents every time. It is very important to control them as they transfer viruses.
Cutworms:	Get rid of, or destroy all weeds and plant residue at least 6 weeks prior to planting. One could also (in addition) scatter bait out in the plantation a few (±3) days before planting. There are also chemicals that could be sprayed with, or after planting.
Soil insects such as wireworm, false wireworm and the black maize bug:	These insects could also be prevented by effective crop rotation and the removal of old plant residue well in advance (6 weeks before planting). There are also a number of preventive and corrective chemicals on the market.
Eelworms:	The possible appearance of eelworms is related to the soil's clay content, as follows: Clay content higher than 40% — Low risk, no control required Clay content between 30% & 40% — Medium risk, consider control Clay content lower than 30% — High risk, do preventive control

The most common diseases

Apart from virus diseases, which are more likely to occur on late plantings or in the later stages of growth, and bacterial wilt, diseases are seldom a problem. Bacterial spot and powdery mildew may occur, for which several fungicides are registered as preventive control. With sweet peppers, rotting of fruits touching the ground can become fairly serious, especially on heavy soils, where the soil surface stays moist for a long time. The problem is more severe with those cultivars bearing large, and particularly long, fruits, which are more likely to be in contact with the soil.

Bacterial spots:	High-risk disease during damp, or continuous rain and cloudy conditions. The appearance should be kept under control as far as possible.
Powdery mildew:	The appearance is associated with warm and humid conditions and it looks like white powder on the leaves. It should be controlled.
Anthracnose:	Circle-like, brownish depressions (sunk-in holes) that make visible markings on the pods. Could be incorrectly diagnosed as bacterial spot, but fortunately there are some chemicals that could be used against both these diseases. It is very important to control.

Weed Control

- A common definition of “weed” is “any plant which is growing where it shouldn’t be growing”. Under this definition a maize, cotton, khabal grass, tomato, cucumber, nutsedge or tomato plant is a weed if it is growing in a Chilli field. Weeds are undesirable because they compete with Chillies for water, space, sunlight and nutrients, thereby decreasing Chilli yields. Weeds can also serve as a refuge for insects or diseases.

- Importance of weed removal at proper timing
    - Chillies are tender summer annual crops that require warm temperatures and an adequate supply of nutrients throughout the season to support good growth and yields. Newly emerged seedlings are highly vulnerable to weed competition.
    - Once established, these crops become more tolerant of weed pressure, but early season competition is very detrimental to Chilli yield.
    - Research shows that the minimum weed-free period for Chillies is 8–10 weeks.
    - Again, competition from weeds during this critical period will result in decreased yields.
    - Chilli nurseries should be weed free when transplants are set in the field, or before direct seeding.

  - This can be accomplished with the use of cultivation (ploughing) or herbicides.
  - Irrigation softens the ground and makes cultivation easy at this stage.
  - Integrated weed management practices Weed management is most effective when it integrates a combination of strategies, based on what works best for achieving a specific management goal, while maintaining economic and environmental stability.
- Common methods span a range of practices, including prevention and cultural, chemical, mechanical, and biological strategies

- Integrated weed management is not an alternative to herbicides in conventional crops, that is, IWM's goal is not to displace herbicides, but to use them as part of a total weed management strategy. For many decades, herbicides have been the primary means of weed management in conventional crops due to their ease of use, effectiveness and affordability. IWM is about using all options available to best solve the problem – in many cases in conventional crops, herbicides are part of this solution.

- Prevention
  - Preventing weeds is the preferred method of weed management.
  - Weed seed can be brought onto farms in organic fertilizers, manure, seed, soil or irrigation water.
  - Farmers should take care and avoid bringing weed seed onto the farm.
  - Tractors and equipment traveling between farms can easily transport weed seed in soil that travels on the equipment.
  - It's easier to prevent the problem than to solve the problem.
  - Chemical Herbicides are a key part of IWM in conventional and some organic systems. As is true with other classes of pesticides, it is important that farmers rotate between different modes of action in order to avoid the development of herbicide resistance.
  - Herbicides should be rotated within a growing season, as well as using different herbicides each year, as possible.
  - Mechanical Common mechanical methods to disrupt weed growth and survival include cultivation, tillage, ploughing, burning, and hand-weeding.
  - Mechanical approaches to IWM should be integrated when appropriate as part of a larger weed management program.
  - No-till and reduced tillage farmers can also take advantage of mechanical weed management approaches.

HARVESTING

- Farmers should strive to produce clean, healthy and wholesome Chillies in order to increase income and develop market potential for domestic and export.
- Chillies at harvest will reflect, to a large extent, the care given to them throughout the growing season, from planting to harvest.
- However, quality crop at maturity can be damaged with poor harvest and post-harvest practices.
- Chillies are usually harvested at full maturity when the fruit are completely red in color.
- Partially red Chillies should not be picked as they contain higher moisture content and take longer to dry.
- The most desirable and highest value Chillies are fully ripe, fresh, and free from diseases, mechanical injuries, insects, blemishes and sunscald.
- These will bring the best price and sell quickly.
- Harvesting of red Chilli is not a “one time” event. Chillies mature over an extended time period so harvest also occurs over an extended time period.
- Harvesting fruit encourages the plant to produce more fruit, so it’s important that fruit don’t remain on the plant any longer than necessary to reach maturity.
- On average, growers will harvest Chillies over 6-10 separate harvests (8-10 for Dandicut varieties), at 15-day intervals, which will carry harvest over a period 2-4 months.
- It’s important that farmers observe the weather forecasts and plan their activities accordingly.
- Picking and drying on cloudy and rainy days will lead to reduced quality.
- Mature Chillies will come off the plant easily, whereas immature Chillies will be more difficult to remove from the plant.
- Chilli color is a good indicator of maturity. Workers should select mature fruit for harvest and use gentle force to remove the fruit. Pulling or jerking of the fruit can damage the plant or bruise fruit

Chillies are normally for a better product harvested by hand.

Chilli Drying

Chili produced in Southern Africa is sun dried and if the climate allows for it, sun drying is still the preferred (natural) way. The best medium to use is black shade nets that are preferably stretched over or between a number of wooden poles, approximately 0.5 to 1 meter high. This would make the selecting or handling of the pods easier, while also allowing any water (rain) to filter through and for sufficient wind circulation. The chilli pods should be kept away from soil or any other possible origin of dust or other foreign materials, including other plants and animals.

The wet Chilli should be thrown out in a single layer and should be turned or moved regularly. One should avoid that the too many pods lay on top of the others, or that they get exposed to continuous rain and cloudy conditions. Once fermentation has started, there is simply no way that the mouldy smell of the pods could be cured and such pods would have no value.

Drying & storage

- Establish an area for drying and maintaining cleanliness.
- Most chilies are dried on the farm.
- Drying areas should be on level, firm, sunny and compacted areas.
- Sloped or loose areas increase handling efficiency and increase the opportunity for dust contamination.
- Livestock should not be nearby, and they should not be able to trespass to the drying area.
- The drying area should be in an area with abundant sunshine and wind protection.
- Blowing wind carries dust, which carries disease organisms.
- Manure paddies or alkali surfaces should not be used for drying surfaces. These increase the potential for contamination and reduced quality.
- Chillies should be dried off the ground, raised several inches above the packed soil surface. Raised drying platforms are the best practice.
- These provide good air movement above and below the Chillies and reduce drying times.
- With steel frames and long-lasting ventilated geotextile fabric, these drying platforms will last for years.
- Metal frames provide strength and protection from rodents.
- The raised platforms, made no more than 5-6 feet wide, allow farmers to walk along each

	Fresh ripe chilli with stem is harvested ready to be dried
	Fresh chillies is laid out on the tables. Please note the table structure.

	Please note that covers of shade cloth or frost net needs to be in place to cover the crops in case of dust or rain.
	Please note sun dried chilli fast approaching the 10% moisture levels

	
	

Analternative solution if dust is a problem is to house the structure for drying under the shade cloth. Just to stop dust.

- Chilli taken to covered area for cleaning in a bath of fresh clean water.
- Poor quality Chillies discarded.
- Important to wash dust off.
- Once Chilli has been cleaned, they are sorted to check quality and then placed into lug boxes and taken to the sun drying area.

- The lug boxes are crucial to the whole process and can be cleaned and reused constantly. Note the quality is getting better.
- The Chillies are placed on the shade net table.
- What is important is that the Chilli is placed on the net and covered with another piece of net to keep off insects and dust.

Grading of chillies will be done by the points below.

Product	
Description	Red dry Chilli pods without stems
Odour	Dusty slightly aromatic
Taste	Hot, pungent and bitting

Foreign matter	0% foreign matter (insects, stones, glass, metal) and 0% vegetable matter (leaves, stalks, etc)
Analytical Standards	
Length	6-10cm
ASTA colour value	> 40 ASTA *(As determined by AOAC method 971.26 colour extractable in spices)*
Moisture	< 10%
Scoville heat	< 18 000 – 22 000 SHU *(Using method 995.03 of the "official method of analysis AOAC International 17th edition , revision 2)*
Ash content	< 10%
Grading	➢ A Grade – Max 5% blemishes ➢ B Grade – Max 25% blemishes ➢ C Grade – Maximum 50% blemishes
Heavy metals MRL's: Arsenic (As)	As per EU legislation – Regulation (EC) No. 1881/2006 of 19 Dec 2006 setting maximum levels for certain contaminates in foodstuffs
Pesticides MRL's	As per EU legislation Regulation (EC) No. 396/2005 on maximum levels of residue. Levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC
Microbiological Specification	As per regulation R692/1997
TMC:	< 1,000,000 cfu/g
Coliforms	< 1,000 cfu/g
E.Coli	ND/20g
Yeasts &Molds	< 10,000 cfu/g
Samonella	ND/25g
Clostridium Perfringens	ND/20g
Staphylococcus Aureus	ND/20g
Bacilles Cereus	ND/20g
Mycotoxin Standards	Specifications
Aflatoxin (B1, B2, G1, G2)	<10mg/kg
Aflatoxin (B1)	<5mg/kg
Ochratoxin A	<15mg/kg
GMO Standards	All products to be free from "Genetically Modified Organism's"