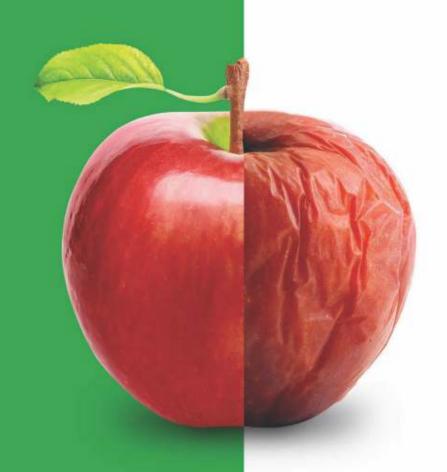


Shelf Life Extension Solutions



5X LIFE EXTENSION









PRODUCTS



KIF Sachets

for Boxes



90% fresh produce is packed inside corrugated boxes only using KIF sachets and are usually 5 gm in weight.

KIF Cassettes

for Refrigerators



Cassettes are used inside refrigerator or a small cooling area where produces are stored and last for 3 months

KIF Curtains

for reefer containers



Curtains are used for one or multiple trips in reefer containers. Usually 2-3 curtains are used for 1 trip of 7-14 days haulage period.

KIF Films

all applications





KIF bags are universally used to pack all fruits and vegetables and are available in custom sizes and printing.

KIF Papers & Chips





Paper sheets and Small chips are used in bulk boxes or retail boxes usually on the top of the box. The paper should cover at least 50% of the top surface area

KIF Filters

for cold storages





Filters are made of metal with lined ethylene absorbant paper and fabric in Cold Storage rooms. 3 Filter to be used in each chamber that stores 100 MT of fresh produce and has to be replaced after 45 days

VBI TECHNOLOGY

- Volatile bacterial Inhibition
- Lower vapor pressure anti bacterial additives vaporize in packaging
- Forms anti bacterial environment not just on film surface but also around
- Bacteria deposits on plastic film with moisture
- · Food nutrition intake is impeded









- Cell Membrane is de-stabilized Respiration is prohibited
- · Cell Division is inhibited



MANUFACTURING PLANTS

GLOBAL SITES





INDIA





American Technology













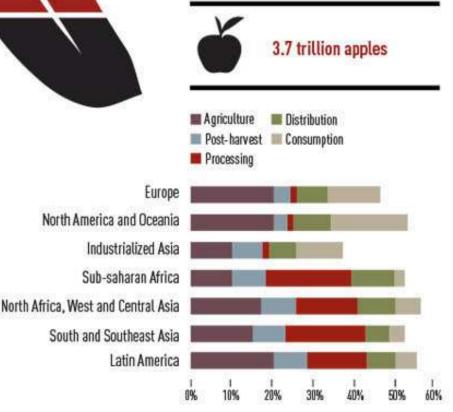
FAO FACT SHEET



45%

FRUIT & VEGETABLES FOOD LOSSES

Along with roots and tubers, fruit and vegetables have the highest wastage rates of any food products; almost half of all the fruit and vegetables produced are wasted.

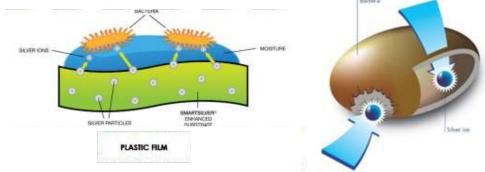


THE TECHNOLOGY





Ethylene is a gas naturally produced by fruit as it ripens
Ethylene works as an accelerator to the ripening process
Ethylene increases ripening exponentially
Ethylene adsorbers reduce the ripening rate by adsorbing the ethylene molecules.
Ethylene molecules form a bond with the keep-it-fresh additives and are trapped



- Bacteria deposits on plastic film with moisture
 - Cell Membrane is de-stabilized
 - Respiration is prohibited
 - Food nutrition intake is impeded
 - Cell Division is inhibited



Think inside the box!





7 day trial in open condition | Temp Day - 29 degrees | Temp Night - 15 degrees | Humidity - 70-85% rH











KIF GRAPE PADS 602







www.keep-it-fresh.com



GENERAL INSTRUCTIONS

Grape pads should be removed before displaying the grapes. These should not be punctured or torn.



PACKING OF GRAPES

- Do not leave grape pads without packaging for long time as they will get activated and lose effectiveness. Open the grape pads, use whatever is required and pack the un-used ones.
- The Grape pads have a shelf life two years and can be used in next season if they have not been used in the current year of purchase.
- Do not expose the grape pads to excessive heat, high moisture, un packed or unattended for a long time.

PACKING INSTRUCTIONS

- 1. Pre-cool grapes prior to inserting pad.
- 2. Prepare box as follows: Unwaxed Boxes: Line with Keep It Fresh PE Bags. Waxed/Plastic Boxes: Line with PE if the boxes have holes
- 3. Insert desiccant pads between and under the grapes to avoid bleaching in nonreferigerated conditions or if temperature rises beyond recommended cold storage condiiton.
- 4. Pack grapes with stems up or down on top of the wadding. Tissue wrap is satisfactory.
- 5. Place the grape pad with non-printed side facing down or towards the grapes.
- 6. Sprinke or spray water on the printed surface of the grape pad for faster activation or suflur dioxide release.



Think inside the box!

KIF GRAPE PADS 602

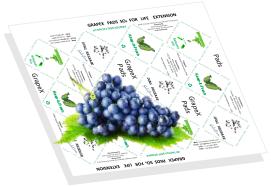






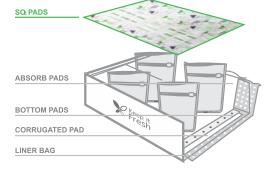
www.keep-it-fresh.com

6. Fold over the polyethylene (if used) to enclose grapes and Grape Pad. The polyethylene box liner must be large enough to fold over the top and completely enclose the moisture absorbing material, the grapes and Grape Pad. Either a bag or a sheet of polyethylene can be used.



7. Close the box. Refrigerated storage is essential once the pad is inserted. Grape pallets or larger containers containing grapes packed with the pad MUST be clearly labelled with the following statements to advise supply chain handlers

The grapes in this container are packed with a sulphur dioxide releasing pad. Refrigerated shipping and storage (at 0°C±1°C) is ESSENTIAL. Remove the pad before display or allowing grapes to warm. After storage: Open grape carton in a well-ventillated area. Workers who are asthmatic or have sulfite sensitivity should avoid opening stored grapes and handling the Keep It Fresh Grape Pads.



For fungicide resistance management this product is a Group M fungicide. Some naturally occurring individual fungi resistant to the product and other Group M fungicides may exist through normal genetic variability in any fungal population. The resistant individuals can eventually dominated the fungal population if these fungicides are used repeatedly. These resistant fungi will not be controlled by this product or other Group M fungicides thus resulting in a reduction in efficacy and possible yield loss. Since the occurrence of resistant fungi is difficult to detect prior to use,



Keep It Fresh accepts no liability for any losses that may result from the failure of this product to control resistant fungi.



KIF FRAMES







Product

KIF FRAMES are used primarily in cold storages to absorb the ethylene gas inside the cold chambers. The long during of storage can cause excessive accumulation of ethylene inside the chamber.

This can accelerate the process of ripening of fruits and vegetables causing early decay of the produce. The ethylene production from fruits and vegetable can hamper the freshness at the time the produce is ready to be despatched.

Installation

KIF FRAMES is the most innovative technology and has patents applied for in many parts of the world. The product is placed near the intake air flow of the reefer container and on the sides.

Dosage

A recommended dosage of 3 filters inside 100 MT chamber are required and to be replaced after 45 days

It is safe to use, easy to install with the rivets in corners and friendly to dispose as it is made from eco friendly substances.















ETHYLENE LEVELS BEFORE & AFTER

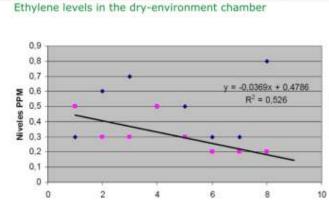
IN HUMID CHAMBER

Ethylene levels in the humid-environment chamber 1,6 1.4 y = -0.0298x + 0.37141,2 $R^2 = 0.1245$ E 0,8 0.6 0.4 0,2 0 2 4 6 8



ETHYLENE LEVELS BEFORE & AFTER

IN DRY CHAMBER







KIF SCRUBBER ES 657







www.keep-it-fresh.com

Product

Ethylene removal is a natural process that does not affect the property of fruit or vegetable. Ethylene that is released naturally can be continuously removed by KIF Ethylene Scrubber ES 657 through the process of adsorption and chemisorption.

Ethylene Scrubber (BES) extends shelf life of fruits and vegetables, minimizes loss due to decay, ensures off season availability and eliminates harmful preservation practices that use Nitrogen and Sulphur gas. Fruits and vegetables, thus retain their naturalness and can be ripened as per demand without bearing traces of toxic gases.

It converts ethylene naturally to releases air free from Ethylene resulting in lowering the ethylene levels in the cold storages naturally.

Installation

Simply plug the scrubber in a 5 Amp connection to start quick action of ethylene removal from your cold storage. It is safe, environmentally friendly and bio degradable product.

Dosage

One scrubber machine is ideal for 50 cbm area and the Ethylene Absorbant Balls need to be topped and replenished every 30 days depending on the type of produce stored.



KIF SCRUBBER ES 657







www.keep-it-fresh.com

Service and Monitoring

Our team of dedicated service engineers and Fresh Produce Professionals shall monitor the ethylene levels in your chamber. We can bring down the ethylene levels to less than 5 ppm in a matter a few hours.

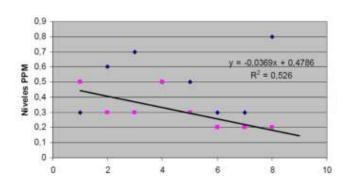
Cost Impact

Your produce stays fresher longer upto 5 times and you do not waste your resources. There is no cost impact to your business rather you save from not wasting your produce stored in the warehouse. You turn profitable day 1 after installation of the ES 657 Scrubber Machine.

How to purchase or lease

We offer flexible options for clients to lease or outrightly purchase our equipment with an unlimited* service call backup. In case you chose to opt for any of the above options, you have the flexibility to return the equipment in 7 days with no questions asked and obligations**.







How it works

Our ethylene catalyst are available in 2 versions: static and mobile.

Ensures that the ethylene level for kiwi fruit conservation is lower than 0.02ppm.

Gives sellers and wholesalers of ethylene-sensitive fruit (e.g. melons) greater flexibility to act on the market by extending the storage period.

The air in the refrigerator is channeled out by one of the fans.

The ethylene in the air is burned in the central part (catalytic layer), and then is released back into the refrigerator without any ethylene molecules.

^{*12} times a year

^{**}freight to be borne by client



KIF Curtains are used primarily in reefer containers to absorb the ethylene gas inside the container. The long haulage during transit can cause excessive accumulation of ethylene inside the container.

This can accelerate the process of ripening of fruits and vegetables causing early decay of the produce. The ethylene production from fruits and vegetable can hamper the freshness at the time the produce reaches the destination.

Installation

KIF Curtains is the most innovation technology and has patents applied for in many parts of the world. The product is placed near the intake air flow of the reefer container and on the sides.

Dosage

A recommended dosage of 2-4 curtains based on the type of vegetables or fruits being shipped is recommended for one time use. It is safe to use, easy to install with the rivets in corners and friendly to dispose as it is made from eco friendly substances.







KIF SACHETS



KIF Curtain





www.keep-it-fresh.com



Product

Fresh Vegetables, Fruits & Flowers start to ripen after harvesting and during the ripening process release ethylene gas and water vapour. This ethylene gas when in the package increases the ripening rate of the fresh produce hence aggravating the ripening process resulting into faster rotting of the fresh produce.

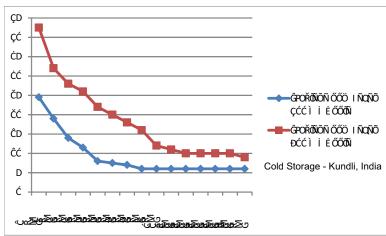
The ethylene gas and water vapour produced work as catalyst to the ripening process which in turn causes faster spoilage and microbial damage.

Keep It fresh Sachets can be easily placed with fresh fruits, vegetables and flowers. The sachets work in a multiple ways to protect and extend shelf life of fresh produce.

Size	5gram	10gam	15 gam
	Eliminate decay, mould, discolor	ation, wilting softening scald, loss of	
	aunch and many other negative	effects caused by ethylenegas.	
	Useduring postharvest handling	toslowdowntheripeningprocess of	
	fruits, vegetables and flowers.		
	Useduringdomesticandinteme	tional shipments moving via coeen,	
	trudy, rail and air.		
	Nontoxic, chemically inert and o	an be disposed of as normal waste.	

How it works

- 1. Absorption of Ethylene The ethylene produced by the fresh produce is absorbed by the special minerals in the sachet that selectively absorb ethylene molecules.
- 2.Oxidation of Ethylene The Ethylene is attracted towards the media in the sachet and gets oxidized to water and carbon dioxide.
- 3. Absorption of moisture The excessive moisture produced within the package is also absorbed which in turn inhibits microbial growth within the package.
- 4.VBI The option of having a Natural Vaporising Bio Inhibitor is available with these sachets. The active ingredient is a natural plant extract, which has the capability to inhibit microbial growth in its presence.



TEST REPORTS



SPINACH TEST







www.keep-it-fresh.com

CONTROL



BUNCHED SPINACH IN CONTROLLED PACKING AT AMBIENT CONDITIO PICTURE CLICKED AFTER 48 HOURS

And the second s

KIF BAG

BUNCHED SPINACH PACKED IN KIF BAG AT AMBIENT CONDITIONS.
PICTURE CLICKED AFTER 48 HOURS

KIF BAGS FOR SPINACH

- Ensures the prolonged storage and shelf life by proving a combined effect modified atmosphere i.e high CO2 and low O2, modified humidity i.e 90 - 95% and condensation control by release of excess moisture
- Himinate excess moisture, thereby maintaining produce appearance and inhibiting decay
- Prevents shrivellig and preserves produce freshness
- Sows senescence, wilting and colour change processes
- Maintains the nutritional value and flavour, and inhibits the growth of pathogothereby reducing decay

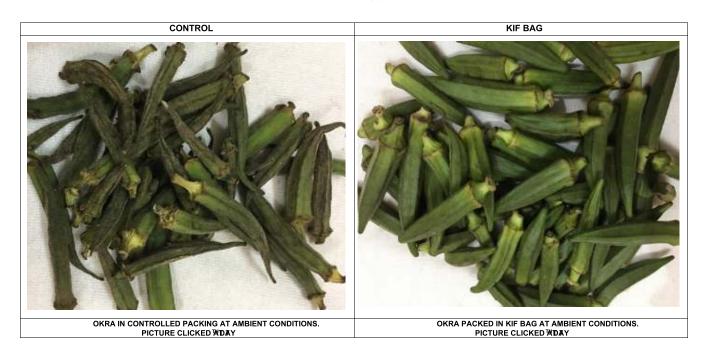


OKRA TEST









KIF BAGS FOR OKRA

- Ensures the prolonged storage and shelf life by proving a combined effect of modified atmosphere i.e high CO2 and low O2, modified humidity i.e 90 -95% and condensation control by release of excess moisture
- Biminate excess moisture, thereby maintaining produce appearance and inhibiting decay
- Prevents shrivelling and preserves produce firmness
- Sows senescence and ripening processes
- Maintains the nutritional value and flavour, and inhibits the growth of pathogens, thereby reducing decay

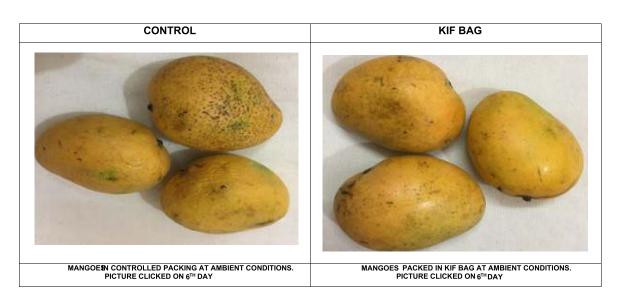
	CONTROL	KIF BAG		CONTROL	KIF BAG
20/03/2018			24/03/2018	奏数	
21/03/2018			25/03/2018		
22/03/2018	A TO THE		26/03/2018	沙蒙	
23/03/2018			27/03/2018	*	變

MANGO TEST





www.keep-it-fresh.com



KIF BAGS FOR MANGOES

- Ensures the prolonged storage and shelf life by proving a combined effect of modified atmosphere i.e high CO2 and low O2, modified humidity i.e 90 95% and condensation control by release of excess moisture
- Eliminate excess moisture, thereby maintaining produce appearance and inhibiting decay
- Preventschange in producekincolour, aromaand produce shape
- Preventsshrivelling and preserves produce firmness and freshness
- Eliminates soft nose and internal flesh break down possibilities
- Sows senescence and ripening processes
- Maintains the nutitional value and flavour, and inhibits the growth of pathogens, thereby reducing decay

	CONTROL	KIF BAG		CONTROL	KIF BAG
20/03/2018			21/03/2018	9	
22/03/2018			23/03/2018	8	
25/03/2018			26/03/2018		



MANGO TEST







PURPOSE:

American Technology

Increasing the SHELF LIFE AND QUALITY of Mangoes by use of KIF Sachets and Bags. Opportunity for both AIR and SEA Shipments.

REQUIREMENTS:

- O 1 cold room to simulate cold chain conditions of storage and transport of mangoes. We want to create same conditions as intransportation in coldchain.
- 30 carton boxes
- O 10cartons to be marked as BAG+Sachet
- O 10 cartons to be marked as Control. (WITHOUT ANY SOLUTION)
- O 10 cartons to be marked as Sachet

(You can increase in the number of cartons if you want to experiment over a larger lot quantity)

PROCEDURE:

- 1. Place the CONTROL mangoes in the usual standard manner as the packing is being done regularly for your export shipments. Make 10 cartons. Mark them
- 2. Take KIF bag.Put the bag inside carton. Place the mangoes inside the polybag. Place the KIF Sachet along side the fruit as shown in 2nd image. Close the bag as shown. Make 10 such cartons (or more as required) And mark the carton as BAG+Sachet
- 3. Take 10 more cartons. Put only KIF Sachet on to pass shown in image 2. Close the carton and mark the carton as Sachet

ENSURE TO TAKE PHOTOS OF THE CONDITION OF MANGOES AT THE TIME OF START OF EXPERIMENT, CHECK FRUIT PRESSURE, COLOUR AND RELATED PARAMETERS.



PUT MANGO INSIDE KIF BAG(IMAGE1)



PARAMETERS TO OBSERVE

PUT 'KIF SACHET' OVER TOP (IMAGE 2)

- (a) Monitor the quality of mangoes inside all 3 carton types as made above i.e. SACHET.
- (b) Openon3-5thday,10thday,15thday and soon till the time mangoes are in a condition to be used.
- (c) Take close view photos of the mangoes every time you open the cartons.
- (d) Check the condition of ripening, fruit pressure, texture and other quality parameters.
- (e) Compare the quality with and without KIF Protection.
- (f) Continue the test till the time the mangoes are not in a condition to be used. This will help in understanding whether KIF Protection can help in SEA Shipments or not.







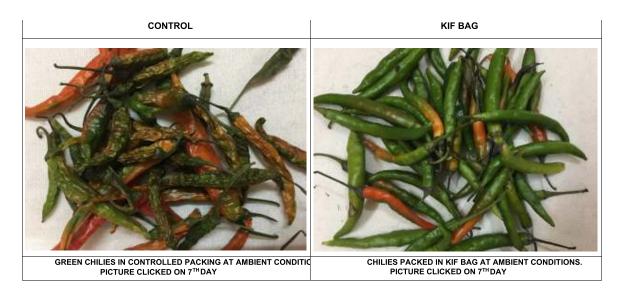


GREEN CHILIES TEST









KIF BAGS FOR GREEN CHILIES

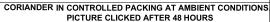
- Ensures the prolonged storage and shelf life by proving a combined effect of modified atmosphere i.e high CO2 and low O2, modified humidity i.e 90 95% and condensation control by release of excess moisture
- Maintains the nutritional value and flavour, and inhibits the growth of pathogens, thereby reducing decay
- Elminate excess moisture amdaintaining produce appearance
- · Prevents shrivelling, preserves produce firmness and freshness
- Slows senescence and ripening processes

	CONTROL	KIF BAG		CONTROL	KIF BAG
20/03/2018			24/03/2018		
21/03/2018			25/03/2018		MOCES IN THE PROPERTY OF THE P
22/03/2018			26/03/2018		The state of the s
23/03/2018		A CONTROL OF THE PARTY OF THE P	27/03/2018		

CORIANDER TEST









KIF BAG

CORIANDER PACKED IN KIF BAG AT AMBIENT CONDITIONS.
PICTURE CLICKED AFTER 48 HOURS

KIF BAGS FOR CORIANDER

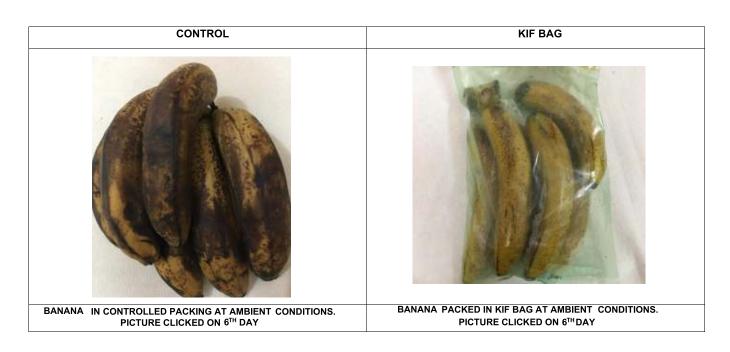
- Ensures theorological storage and shelf life by proving a combined effect modified atmosphere i.e high CO2 and low O2, modified humidity i.e 90 -95% and condensation control by release of excess moisture
- Biminate excess moisture, thereby maintaining produce appearance and inhibiting decay
- Prevents shrivelling and preserves produce firmness
- Sows senescence, wilting and colour change processes
- Maintains the nutritional value and flavour, and inhibits the growth of pathoge thereby reducing decay

	CONTROL	KIF BAG		CONTROL	KIF BAG
20/03/2018 at 5:30pm	Fresh Green coriandervested at 11 aron 20.03.2018	Fresh Green coriandearvested at 11 ar on 20.03.2018	21/03/2018 at 5:30pm	Wilting, Yellowing, Dehydratic effected 70% f coriander	Fresh, Uniformly Green (not yello green), Fully Turgid, Fairly Clean,
22/03/2018 at 5:30pm	Wilting, Yellowing, Dehydration	yellowgreen colour, Wilting effect	23/03/2018 at 5:30pm	Wilting, Yellowing, Dehydration	yellowgreen colour, Wiltin
	seriously damage 6 5 to 90% o coriander			seriously damaged 100% of coriander	effected 4% of coriander

BANANA TEST







KIF BAGS FOR BANANA

- Ensures the prolonged storage and shelf life by proving a combined effect of modified atmosphere i.e high CO2 and low O2, modified humidity i.e 90 95% and condensation control by release of excess moisture
- Maintains the nutritional value and flavour, and inhibits the growth of pathogens, thereby reducing decay
- Biminate excess moisture, thereby maintaining produce appearance and inhibiting decay
- Delays ripening and ethylene production rates
- Sows senescence and preserves produce firmness

	CONTROL	KIF BAG		CONTROL	KIF BAG
20/03/2018			23/03/2018		
21/03/2018			24/03/2018		
22/03/2018			25/03/2018		

PAPAYA TEST





www.keep-it-fresh.com

PURPOSE:

Extending the Shelf lifeof Papaya by the use of KIF filters and bagsfor retail supply chain.

REQUIREMENTS:

Ê ĊĆĨMŐMŘMŐMŃÔŒ

Ē ĈĆ ŐMŃÔŒPŎ NÑ Ö MỚĐÑŇ MŒHHĞ NIMNŒ

 \hat{E} $\hat{C}C$ \hat{C} \hat{C} (SAME AS BEING DONE NOW)

ĈĆ ŐMŃÔŒPŎ NÑ Ö MỚĐÑŇ MŒ kif filters

PAPAYA PACKED IN K (PIC-1)

PROCEDURE:

- 1. Ĩ ÕMŃ POÑ FÎ Í İ Ī Î I Ĩ MŐMŘMin the usual standard manner as the packing is being done regularly for your retail chambers. Make 10 packs. Mark them "CONTROL".
- 2. I ake 10 more packs. Put only one kif filter facing the layer of Papaya then close the bag and mark the packas "KIFfilter".
- 3. I ake 10 more pack sizes. Put them in kif bags then close the bag and mark the pack as "KIF bags".

PARAMETERS TO OBSERVE

- (a) Ì ŎŌĐŎŐPOÑ quality of papaya inside 3 pack types as made above i.e. CONTROL/KIF FFILTERS/KIF BAGS.
- (b) FOÑNÔ POÑ NĎŌŇÞÌÖŌ MIPÑỚÑQÑÁŘ ČÇ CŎÞỚMŌŇ CĐ ŎŌ RÒÔÒPOÑ PÖÒ Ñ ỚMỚMŘIVare in a condition to be used.
- (c) İ MÔÑ <u>close view photos</u> of the papaya every time you are monitoring results.
- (d) FOÑNÔ POÑ NĎŌŇÌĐỜŌ ŎŊỚŒÑŌŌŎŊ4ĐÝA Đ CỚÑŒĐỚÑAĐÑÁP ỚÑ MŌŇ ŎPOÑỚỢ MÂĐĂ CMÁNO ÑPÑÁB
- (e) FŎÖ ŐMÁN POÑ ØÞMÁÐÞŘ RÓÐO MŌŇ RÓÐOŎÞPĦHĞĨ ÁŐÐPÑÍNPÓĎŌB
- (f) FÖÖRÖDPÑ Phe test till the time the papaya are not in a condition to be used. This will help in understanding what changes KIF Protection is bringing in your produce.







CONDITIONS FOR USING KIF

- · KIF refers to series of shelf life extension solutions which eliminate Ethylene, VOCs and pathogens etc. which are responsible for early ripening and decay of produce.
 - · Usage of KIF does not mean that there will be no problem in the shipment or all the problems related to post harvest, packaging and shipment will be solved.
 - · KIF is an additional protection method which works very well if all the post harvest operations are carried out as per global norms.
- The temperature, humidity and packing conditions should be maintained at each stage of post-harvest to ensure KIF to work properly.
 - · Air circulation during storage and exports are a must for proper working of KIF.
 - · KIF is not a guarantee or solution for any problem happening in the shipments or storage of fresh produce.
 - · If the packing and storage protocols are followed, KIF gives excellent results.
- · It is requested that customer takes trials of KIF and develops confidence before placing bulk orders.
- · KIF is a totally eco-friendly and non hazardous product made from zeolites and oxidizing agents. It does not cause any harm to fresh produce or release any toxic chemical. The used sachets/tubes/filter media can be used as manure in gardens/lawns or disposed off as normal waste.
- · KIF does not release HEAT or any kind of chemical or gases. It does not spoil the fresh produce at any stage but is a solution to absorb the gases released by fresh produce and extend their shelf life and quality.
- The user is requested to take this product and do satisfactory trials before going for bulk use.

Company is not responsible for any damages or problems occurring due to post harvest quality, storage or REEFER problems.



SGS FDA TEST REPORT





www.keep-it-fresh.com

TEST REPORT

Report No.: MAN:HL:7480003070

DATE: 18th February, 2016

HI TECH INTERNATIONAL

PLOT NO-B 31,, BEANT COLONY JAMALPUR

LUDHIANA-141010

INDIA

CONTACT PERSON : MR. SIDHARTH SAREEN

THE FOLLOWING SAMPLE(S) WAS/WERE SUBMITTED AND IDENTIFIED BY/ON BEHALF OF THE CUSTOMER AS:

SAMPLE DESCRIPTION COLOUR

PIOT NOT BAG GREEN

BUYER

HI TECH INTERNATIONAL

COUNTRY OF ORIGIN

INDIA

SAMPLE RECD ON TEST PERFORMING DATE 08/02/2016 09/02/2016 TO 18/02/2016

TEST REQUESTED

PLS. REFER TO SUMMARY

TEST METHOD & RESULT(S) PLEASE REFER TO NEXT PAGE(S)

SUMMARY OF TEST RESULTS:

TEST REQUESTED	CONCLUSION
US FDA 21 CFR 177.1520 (Olefin Polymers) Maximum Extractable fraction	Pass
Maximum Soluble fraction	0.777.4

Per Pro SGS India Pvt Ltd.

Ashish

Email your Test Report Related Enquiries at Feedback.HLT@sgs.com

COMPARATIVE STUDY



WEIGHT LOSS COMPARISONS

NORMAL BAG VS KIF BAG

NO.	FOOD PRODUCT	Percentage We At Room Te	STORAGE DAYS At Room Temperature	
		Control bag	Keep It Fresh bag	In Keep It Fresh
1.	Strawberry (Sweet Charley)	10.04	6.19	5
2.	Green grapes (Thompson seedless)	12.05	2.57	13
3.	Black grapes (Sharad seedless)	10.38	2.26	15
4.	Pomegranate (Bhagawa)	29.04	6.82	65
5.	Guava (Sardar)	10.50	5.12	8
6.	Lime (Kagzi)	21.02	10.99	13
7.	Bottle gourd	4.44	3.85	11
8.	Fenugreek	64.69	26.54	5
9.	Spinach	30.87	7.17	3
10	Coriander leaves	40.85	9.45	3
11.	Curry leaves	39.24	23.40	5

