



CP Kelco

GENU® Pectin

general introduction

www.cpkelco.com

Origin

Plant / Fruit

Chemical

Carbohydrate
Polysaccharide
Polygalactan

Functionality

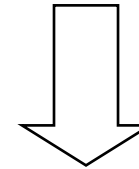
Gelling agent
Stabilizer
Thickening agent



- Citrus fruits are grown for juices and oil production
- Peel is the waste product

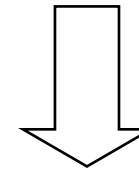


All green plants



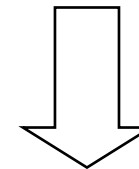
Waste from food industry

Rich in pectin

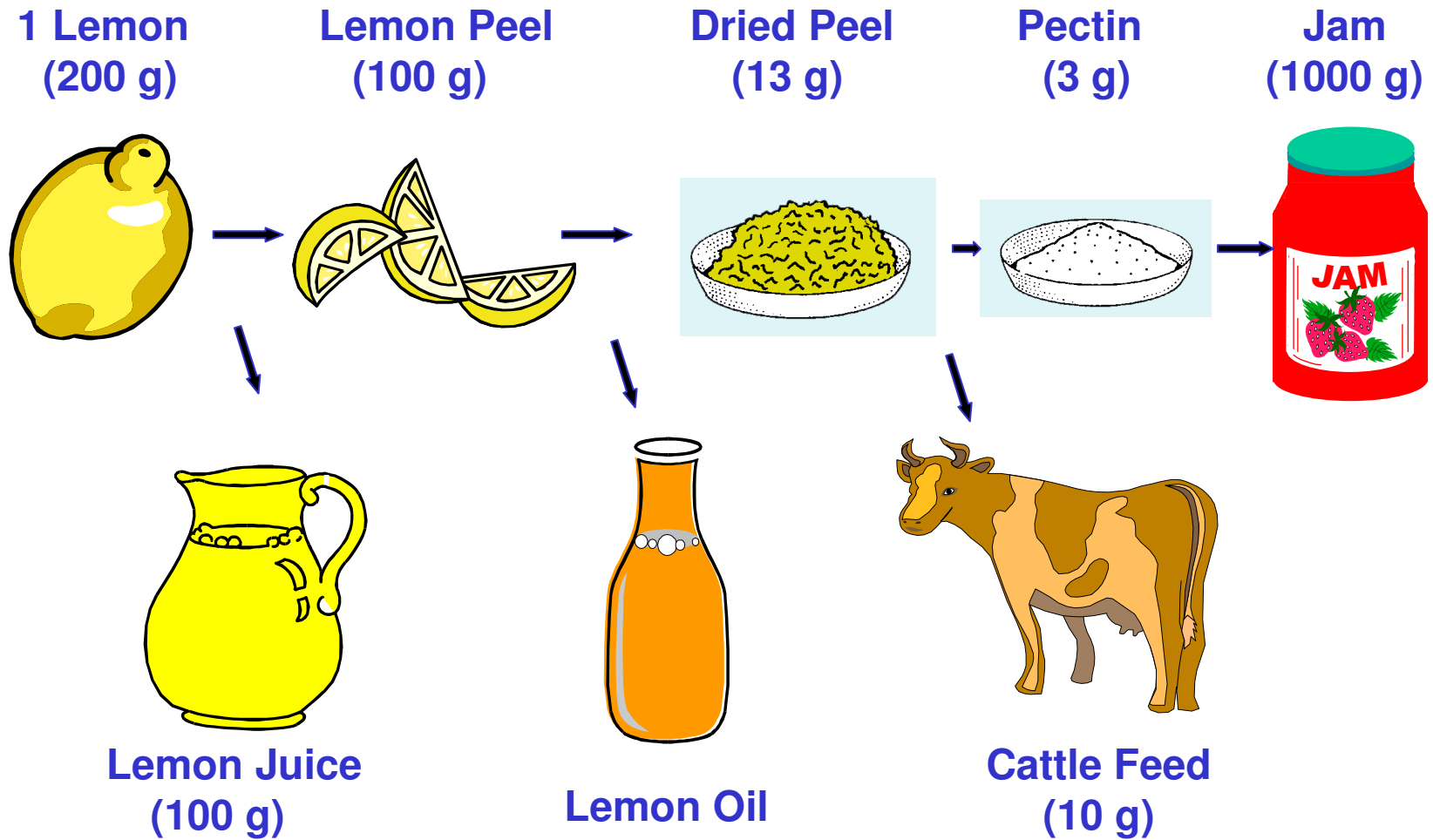


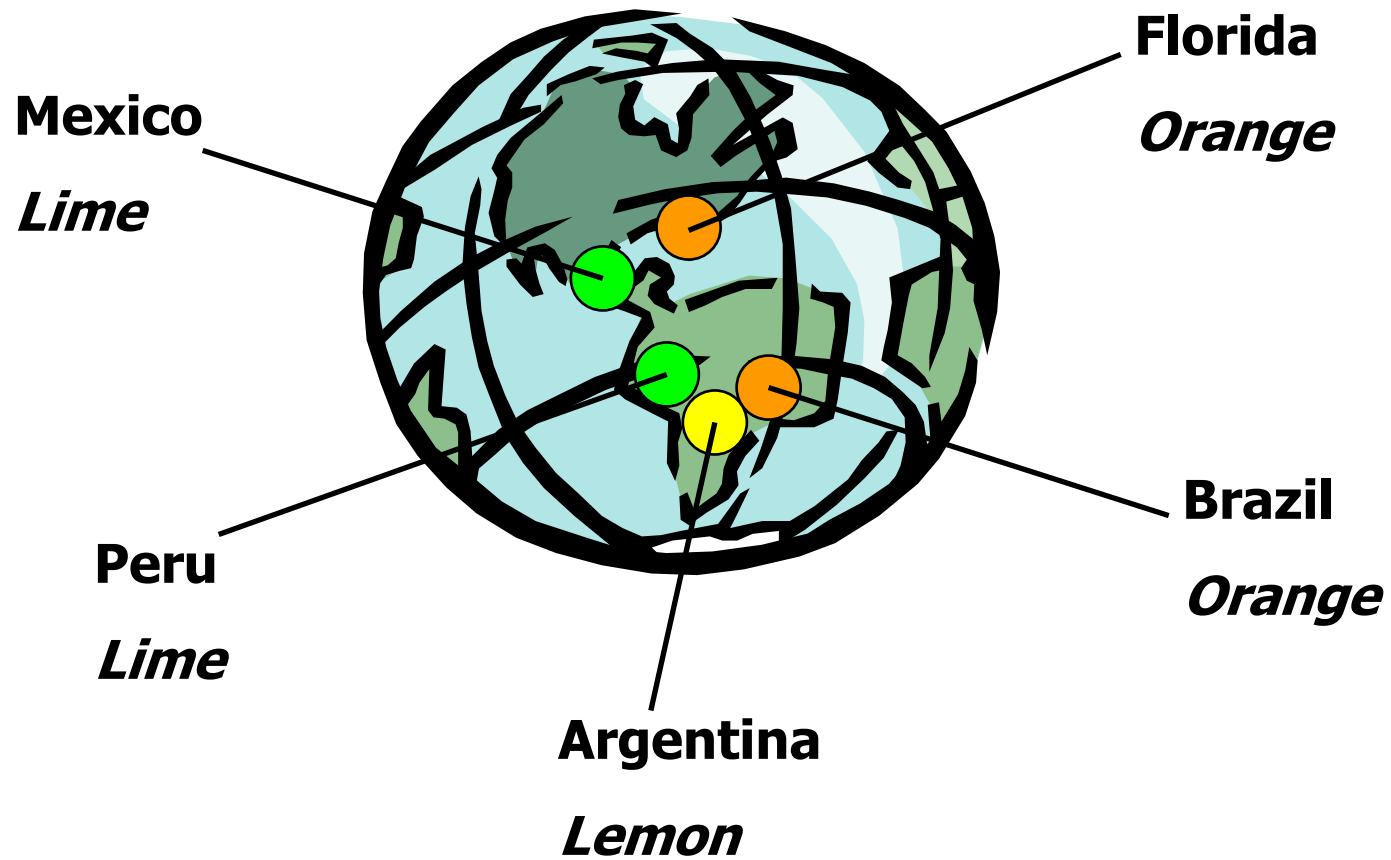
Citrus
Apple *
Sugar beet *

Citrus types



Orange *
Lime *
Lemon





- **Use of apple pomace**
- **Traditional source of pectin**
- **Historically the major part of the industry is developed from utilization of apple**
- **Gives brown pectin**





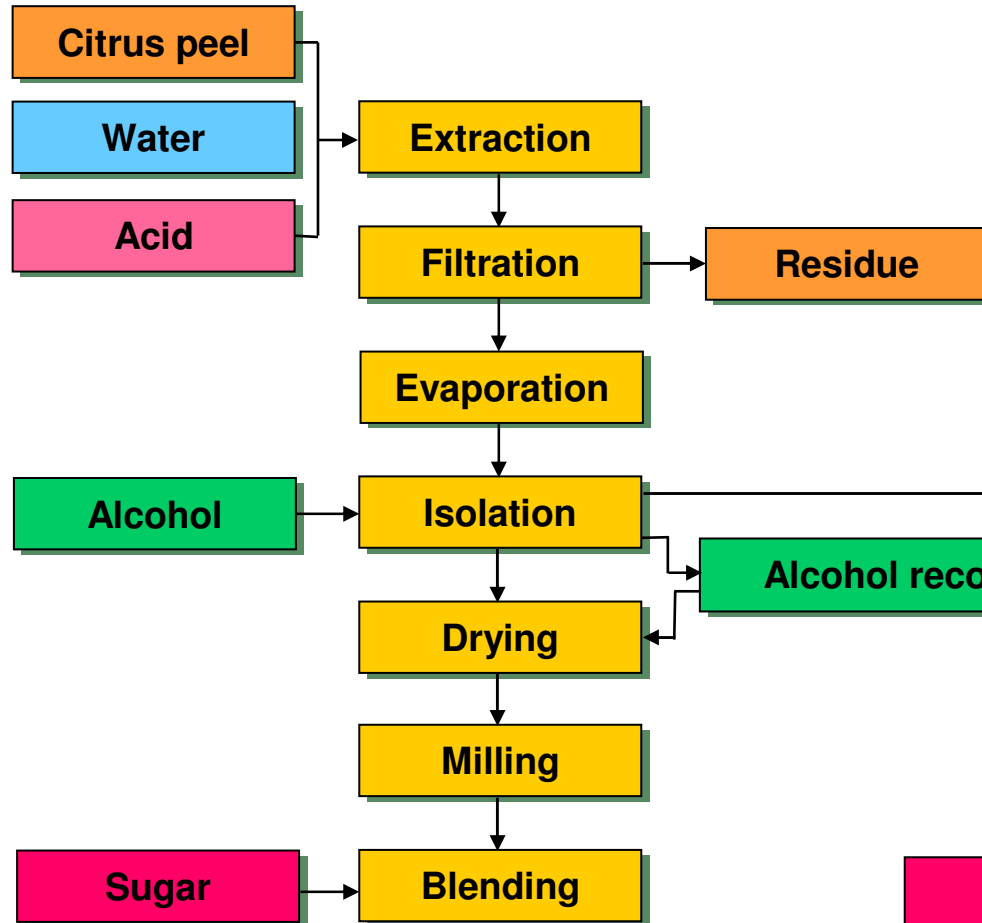
- **Today the most important source of peel**
- **High specific viscosity in aqueous solution and low calcium sensitivity**
- **High breaking strength**



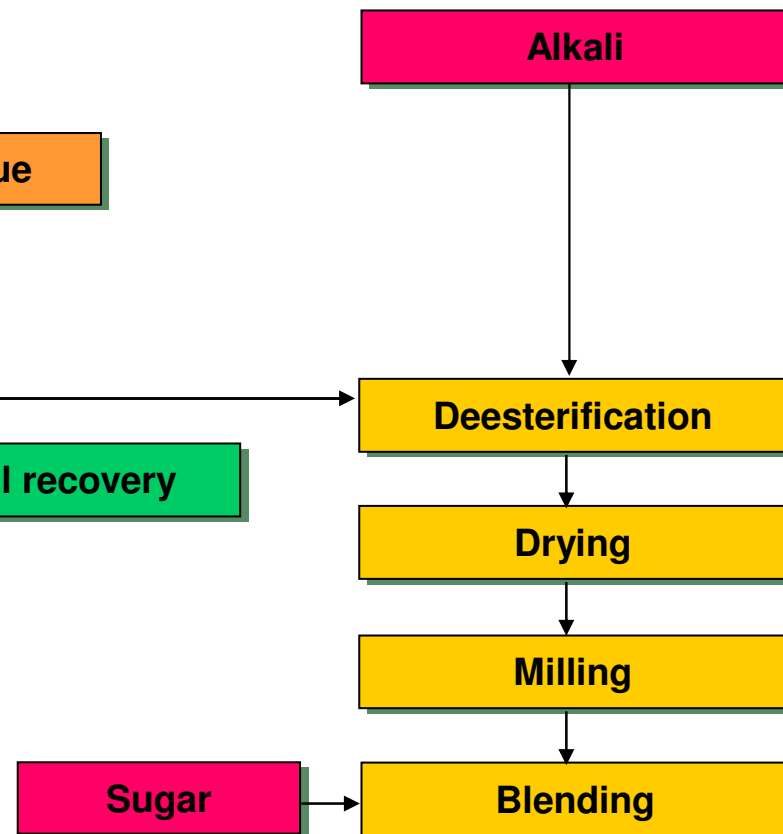


- **Lower specific viscosity**
- **Higher calcium sensitivity**
- **Is less suited for traditional gel applications with calcium-rich fruit**
- **New technique can solve the problems**

GENU[®] HM-pectin



GENU[®] LM-pectin



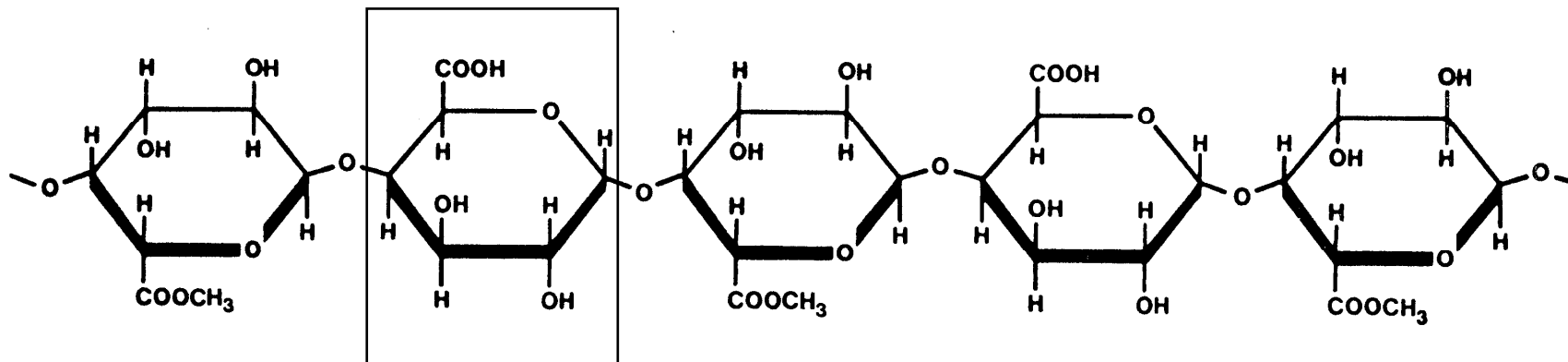
- **High Methoxyl Pectin (HM)**

- **Low Methoxyl Pectin**
 - ⇒ **Low Methoxyl Conventional (LMC)**

 - ⇒ **Low Methoxyl Amidated (LMA)**

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Alpha (1-4) linked D-polygalacturonic acid



~500 repeating units / molecules

Degree of esterification (DE) = amount of acid groups that are esterified

- **In China in 2010**

Juice beverage 1200-1500MT

Confectionary 200-300MT

Acidified milk drink 400MT

Stirred yogurt 200MT

Jam and yogurt fruit preparation 100MT

Total 2100-2500MT

Among them

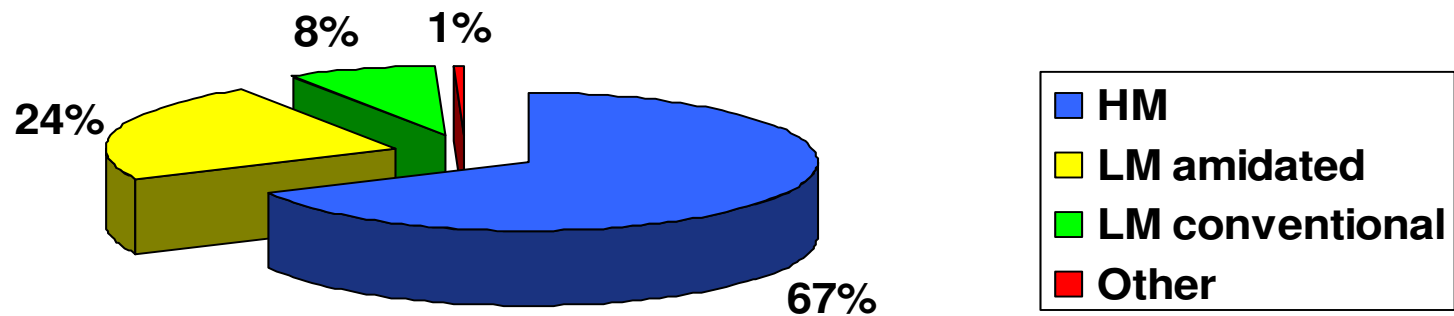
CPK 1240MT

Danisco 500-600MT

Cargill 300-400MT

Others 100-200MT

Pectin types estimated world market 2009



Pectin producers estimated world market share 2009

