

THE UTILIZATION OF CASHEW APPLES IN VIETNAM



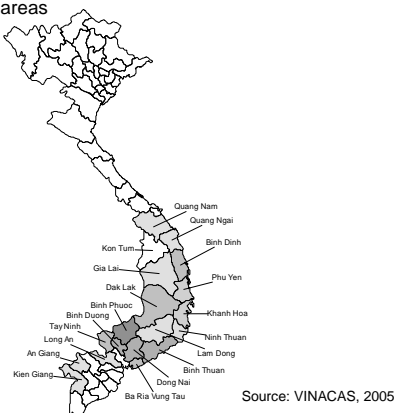
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Overview of Vietnam cashew production

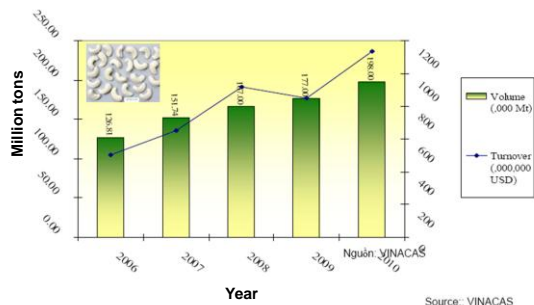
- Vietnam is one of 2nd world biggest countries for area and production of cashews after India
- Production of cashew nuts in 2010 reached 291.5 million tons.
- This is the 4th consecutive year Vietnam cashew industry maintains the top export position of the world.



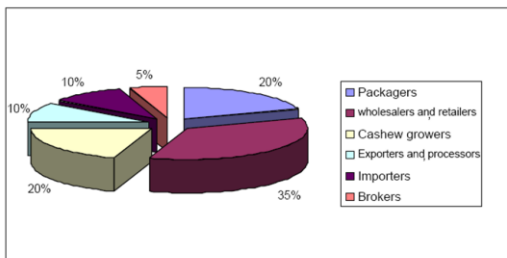
Vietnam Cashew areas



Cashew kernel export quantity and turnover, 05 years, 2006 - 2010



Profit division in cashew value chain



Weight of cashew apple: 8 – 10 times that of nut.

Compositions of Viet Nam cashew apple

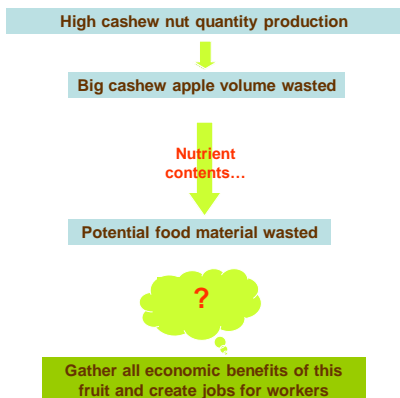
Compositions (%)	Red cashew	Yellow cashew
Moisture	85.92	86.38
Pectin	0.86	0.98
Reduced sugar	7.74	7.26
Protein	0.88	0.52
Fat	0.30	0.27
Cellulose	3.56	3.34
Tannin	0.42	0.48
Minerals	0.44	0.5

(Source: Pham, V.N., 1991)

Micronutrients of fruits (per 100g)

Fruits	B ₁ (10 ⁻⁶ g)	B ₂ (10 ⁻⁴ g)	C (mg)	P (mg)	Ca (mg)	Fe (mg)
Yellow C.A.		98,75	239,6	11	41	3
Red C.A.		128,75	186	11	41	3
Pineapple	80	20	24	11	16	0,3
Avocado	120	150	16	38	10	0,6
Banana	90	60	10	28	8	0,6
Lemon	40	Trace	45	10	14	0,1
Pomelo	40	20	40	-	-	-
Mandarine	70	30	31	23	33	0,4
Orange	80	30,9	49 ..	23	33	0,4

(Source: Pham, D.T., 2003)



Cashew apple utilization...

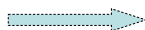
Input	Output	Description and Uses
Apple	Prunes	Cashew prunes, produced by boiling the cashew apple in molasses, is very similar to dehydrated prunes or dates.
	Juice	The cashew fruit is pulped by grating or pounding and the juice is pressed out and strained. Cashew Juice has five times more citric acid than orange juice and is thus a good source of preservation acid medium when mixed with other fruit juices or vegetables
	Wine	The juice of the cashew apple can be processed into wine using the conventional method of producing fruit wines. The alcoholic content averages 18%.
	Pulp	The fibrous pulp obtained after extracting juice from the cashew apple can be used as animal feed or dried and processed into diet fibre biscuits

(Source: USAID, 2002)

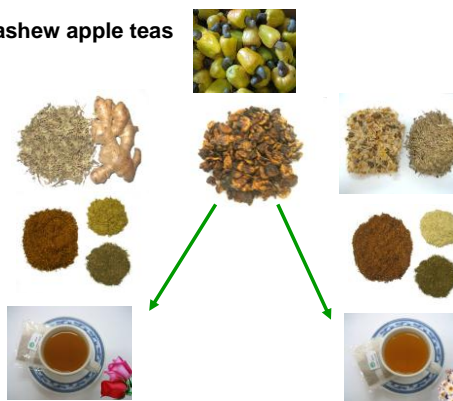


Cashew apple utilization...

- Vietnam:
 - The apples are usually used as fresh fruits.
 - A small amount is used for making wine.
 - Products from researches (not yet commercialized):



Cashew apple teas



Cashew apple wine



Cashew apple vinegar



Cashew apple utilization...

- Enhance the value of abundant cashew apple.
- Reduce environmental pollution.
- Increase the income for farmers.
- Create jobs for workers.
- Diversify food products.



Miniresearch

“Added-value for Cashew Industry by Producing a Reduced-Fat Cashew Apple Chips”



Cashew apple chips (Photo: Max Reynes)

Cold chain for fruits in Vietnam?

Pomelo case





Any cold chain for cashew apple?

- *Freezing prior to frying has an important impact on the fat content and other qualities of the chips after frying. The chips have a lower fat content and better organoleptic qualities.*
(Knok et al., 1995)



References

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Thanks for your attention !

