



**AMATEA™**

organic guayusa extract by *AFS*

**THE NEXT GENERATION  
OF CAFFEINE.**



**AFS**  
APPLIED FOOD SCIENCES

[appliedfoods.com/AMATEA](http://appliedfoods.com/AMATEA)



US PATENT NO [#9345707](#)



# AMATEA™

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Guayusa (*Ilex Guayusa*) is a caffeinated Amazonian super-leaf of the holly species that contains a unique blend of caffeine and polyphenol antioxidants ***providing a new energy for a cognitively uplifting experience.***

Guayusa is a cousin plant to yerba mate (*Ilex paraguariensis*), a fellow rainforest holly leaf. However, guayusa is uniquely different than yerba mate in that it tastes sweet, not bitter, and has a distinctively different polyphenolic antioxidant makeup.

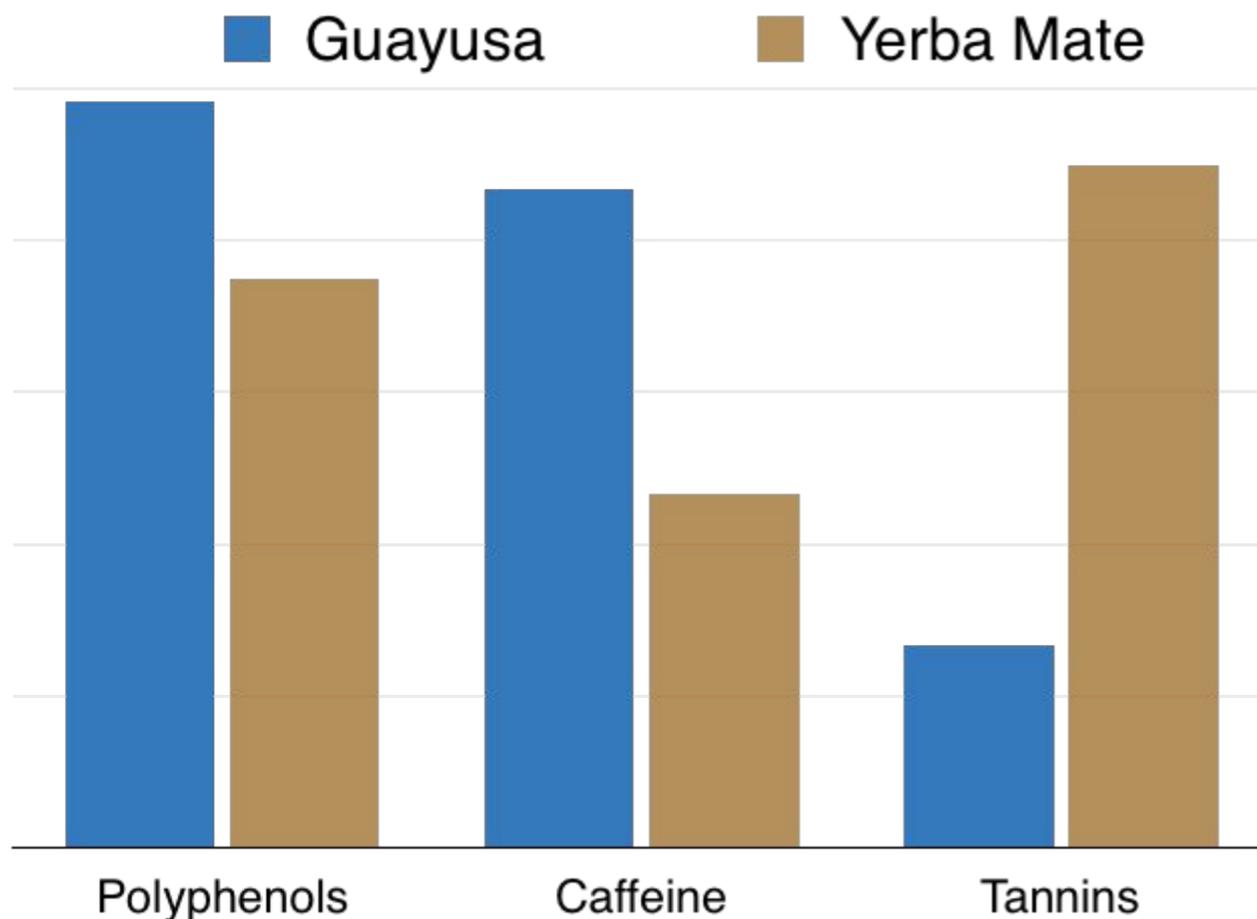




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## COMPARING GUAYUSA vs YERBA MATE



- 20% More Polyphenols
- Double the Caffeine
- 70% Less bitter tannins

\* Verified by HPLC



# AMATEA™

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**20% Caffeine**

**30% Chlorogenic Acids**

- Contains Caffeine, Antioxidants, Rutin, and Amino Acids
- Organic Certified / GRAS / Non-GMO
- Water Soluble
- Excellent Flavor in RTDs

[US PATENT NO 10,300,097 B2](#)





# AMATEA™

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## NOOTROPIC BENEFITS

- Naturally Occurring Energy
- Increases Serotonin & Dopamine Levels
- Heightens Mental Focus
- Enhances Mood & Motivation
- Controls Adrenal Response

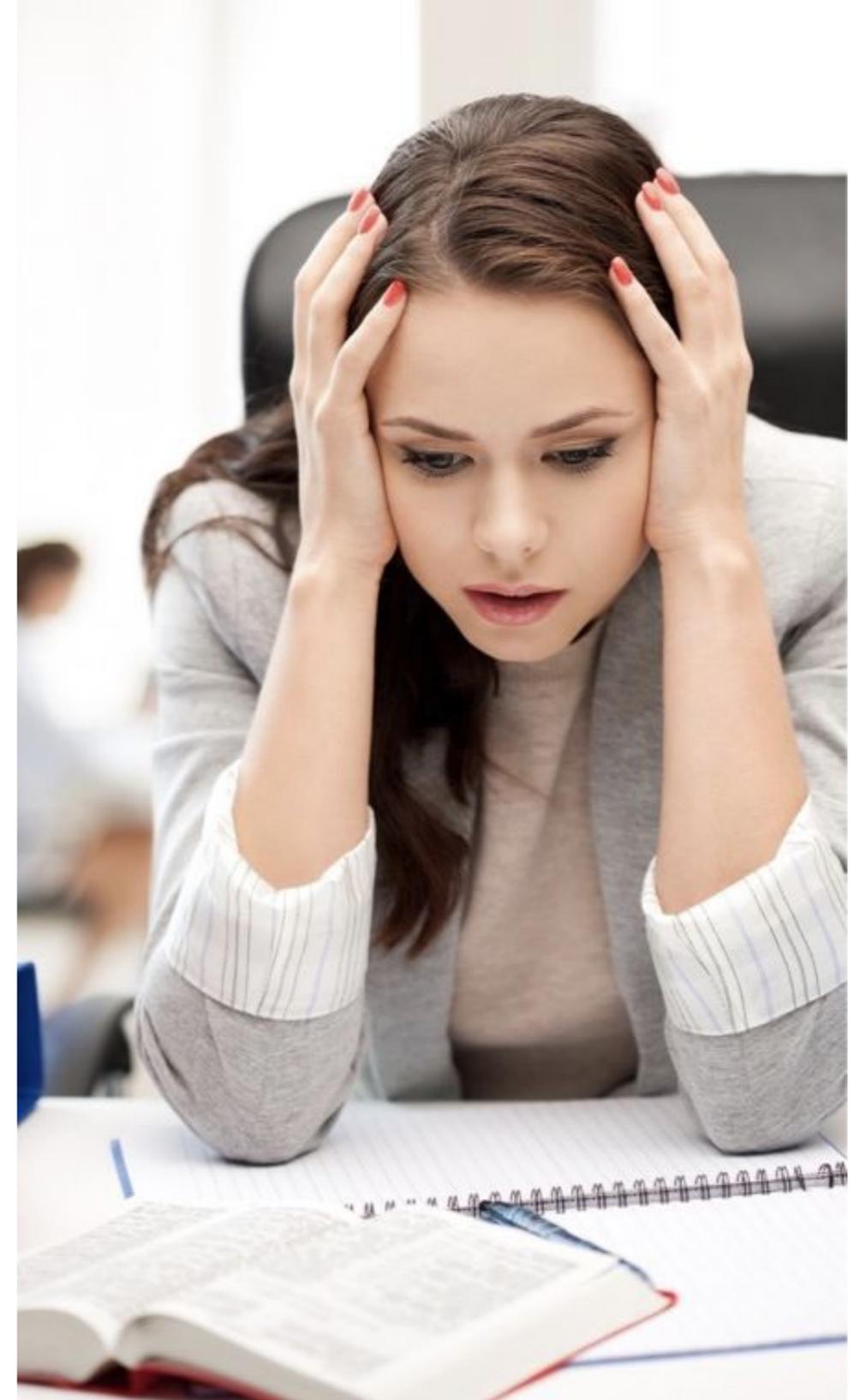


# Study 1 - CONTROLLED ENERGY

**Caffeine has less desired effects** in how it interacts with neurotransmitters in the brain and can cause “flighty or jittery” feelings of:

- Nervousness
- Restlessness
- and Irritability

**The adrenal medulla** is responsible for the release of a “fight-or-flight” hormone, called epinephrine, that occurs upon caffeine intake. Side-effects of caffeine resemble those same feelings of restlessness or anxiety that associated when the body is under stress (Krieger, 2016).



# STUDY 1 - RESULTS

## CONTROLLED ENERGY

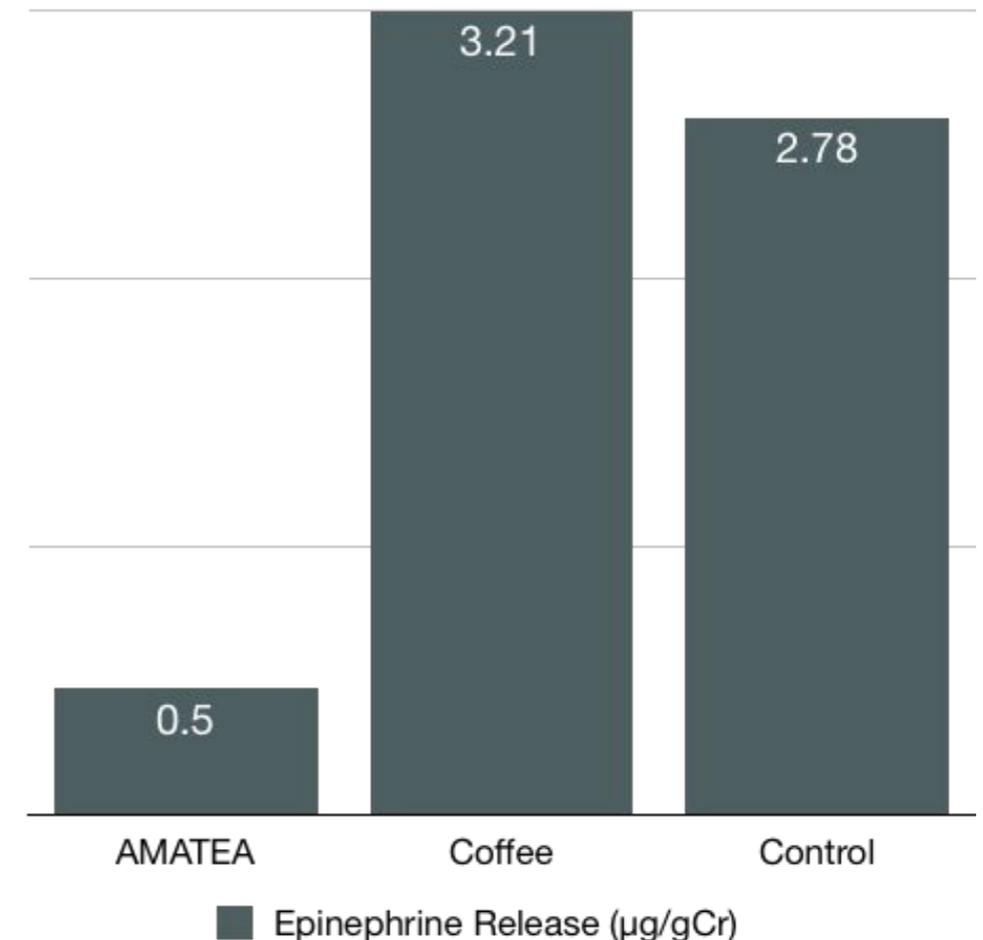
**In a double-blind crossover clinical trial,** subjects were administered 200 mg of caffeine from AMATEA™, a 30% wt/wt CGA, 20% wt/wt caffeine standardized organic guayusa leaf extract, an equivalent green coffee extract, and a synthetic control.

**The results** showed that the AMATEA™ stimulated a significantly lower increase in epinephrine compared with the control, while the green coffee extract provoked an increase in epinephrine similar to the control.



### AMATEA™

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**AMATEA™ has a significantly lower release of epinephrine compared to the control.**

# STUDY 2 - NEUROTRANSMITTER FUNCTION

**The prefrontal cortex (PFC)** is important for the modulation of executive function tasks including learning, cognitive flexibility, working memory, categorization, inhibitory control, and behavioral flexibility.

Effective and enhanced release of our brain's neurotransmitters can aid in nootropic benefits such as:

- Enhance mood
- Decrease stress
- Increase motivation
- Cognitive performance



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# STUDY 2 - NEUROTRANSMITTER FUNCTION

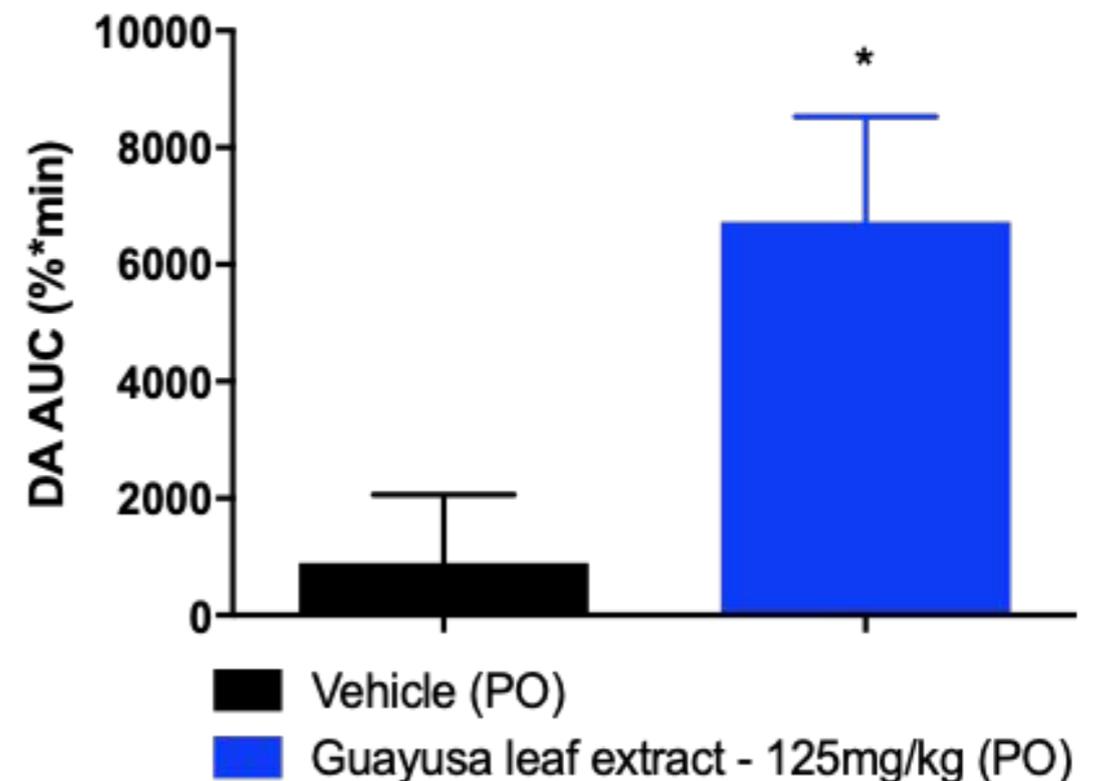
**Our second study** provided additional clinical research utilizing AMATEA™ organic guayusa extract, evaluating the effect of AMATEA™ on cortical neurotransmitter levels in the median prefrontal cortex of rats looking at extracellular levels of Histamine (HA), and Acetylcholine (ACh), Serotonin (5-HT), Dopamine (DA), Norepinephrine (NE).

**Histamine** - Wakefulness + Attention

**Acetylcholine** - Cognitive & Arousal Function

**Serotonin** - Cognitive Function + Mood

**Dopamine & Norepinephrine** - Memory + Attention

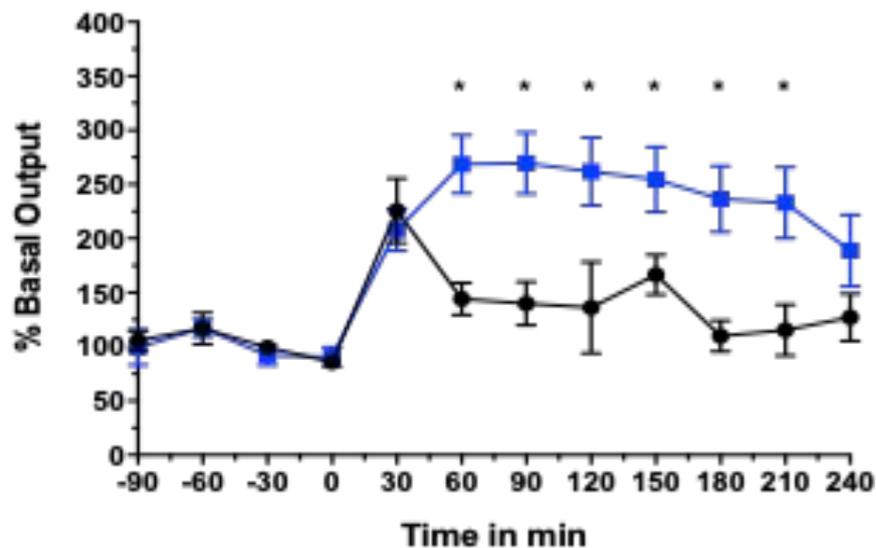


The effect of AMATEA™ on dopamine released are significantly pronounced as measured by the area under the curve (AUC).

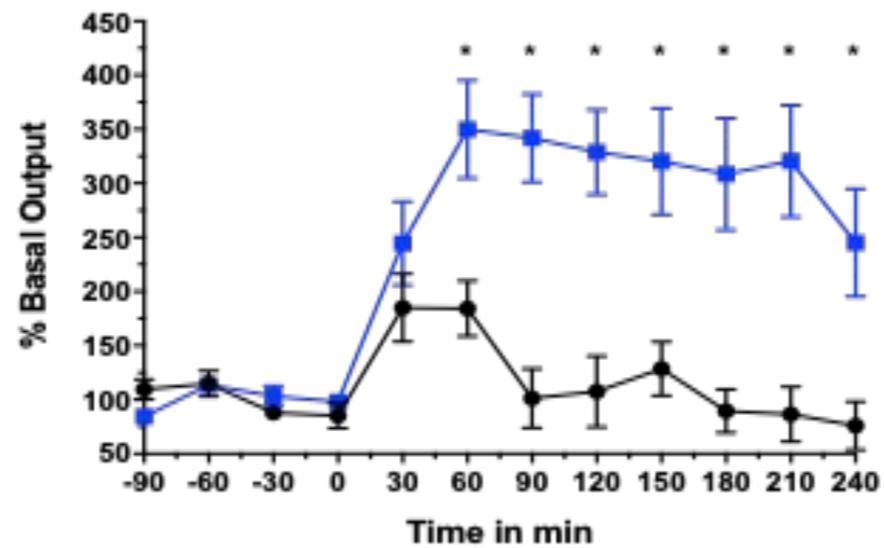
# STUDY 2 - RESULTS

## NEUROTRANSMITTER FUNCTION

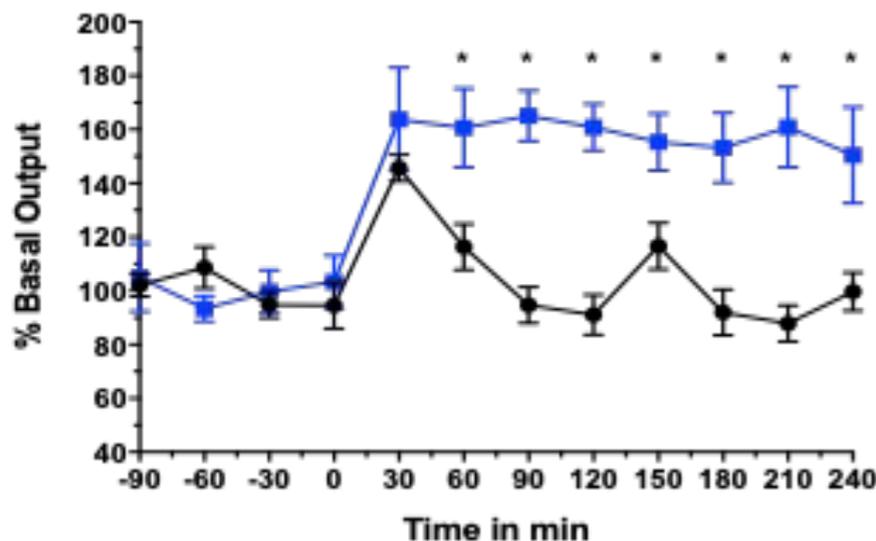
**Acetylcholine in PFC**



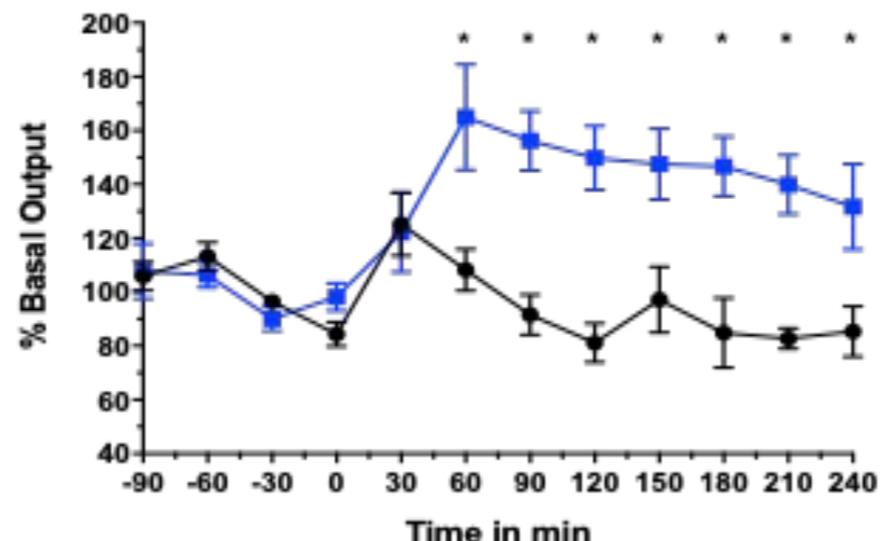
**Histamine in PFC**



**Norepinephrine in PFC**



**Serotonin in PFC**



● Vehicle (PO)    ■ Guayusa leaf extract - 125mg/kg (PO)

**Results of this study demonstrate** that extracellular levels of all the targeted biomarkers were significantly increased by the administration of AMATEA™ as compared to control alone.

Guayusa increases the extracellular level of NE, 5-HT, HA, and ACh in the rat PFC cortex in a time-dependent manner. Neurotransmitter levels are expressed as a percentage of basal output. Six rats were used for each of the vehicle and AMATEA™ treatments. Microdialysis probes were placed 24 hours prior to sample collection and probe placement was verified histologically.



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**PATENTED**

[U.S. Patent #9345707](#) – As the manufacturer and sole supplier of AMATEA™ guayusa extract, Applied Food Sciences is the exclusive inventor and owner of a process patent covering the production of enriched natural guayusa. This novel process converts fresh guayusa leaves into a healthier energy ingredient standardized for caffeine and polyphenol antioxidants like chlorogenic acid and catechins.

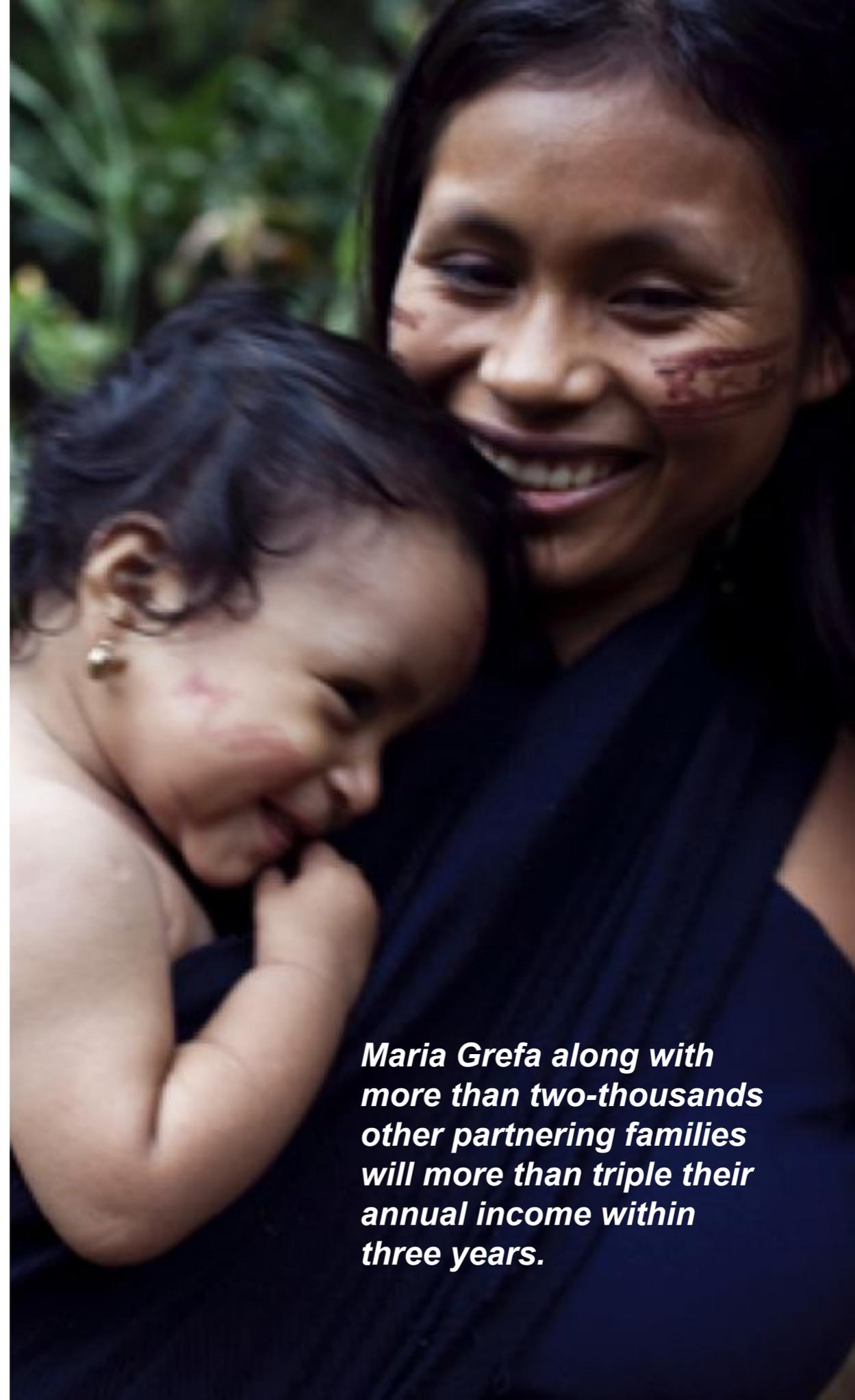
# MEANINGFUL SOURCING

Organic guayusa for AMATEA™ is exclusively produced by independent farming families, not industrial plantations.

Their farms are not mono-crop systems, instead apply growing techniques to agroforestry in which crops are grown among other vegetation.

Growing in this method reduces the need to degrade or cut down the forest and creates a more diverse, productive, profitable, and sustainable use of land.

Growing organic guayusa for AMATEA has a positive impact on the community. By selling organic guayusa, over two-thousand farmers have been able to raise their income by more than thirty-percent each.



***Maria Grefa along with more than two-thousands other partnering families will more than triple their annual income within three years.***