

FSSAI-Compliant Matcha RTD Beverage Formulation Checklist

1. Product Concept Basics

Define Target Consumer: Are you catering to wellness seekers, gym-goers, mental health-focused professionals, or Gen Z energy drink users?

Choose Format:

Still RTD
Sparkling matcha drink
Cold brew matcha tea
Matcha energy drink

Product Claims Selected:

"Low Sugar"
"Plant-Based"
"Mental Alertness"
"Antioxidant-Rich"

Market Goal:

Domestic retail
HORECA
GCC export
Clean label premium

3. Liquid Base & Sweeteners

Chosen water base with:
Coconut milk
Almond milk
Oat milk

Sweetener Blend Optimized:

Stevia (INS 960)
Erythritol
Monk fruit (if allowed)

Avoided:

Aspartame, saccharin, sucralose
Overuse of stevia can cause a bitter taste

Texture managed with:

Acacia gum
Sunflower lecithin

2. Matcha & Core Functional Ingredients

1. High-quality ceremonial/culinary-grade matcha sourced
2. Dose set between 1.5–2g of matcha per 250 ml
3. Caffeine content measured and declared (>145 mg/L needs labeling)
4. L-theanine level calculated for "calm energy" claim
5. Additional antioxidants like Vitamin C, amla extract, or green tea extract are included
6. Optional boosters (only if FSSAI-approved):

Ashwagandha
Electrolytes
Tulsi
Collagen peptides (bovine or vegan)

4. Stability, Acidity & Processing

1. pH adjusted between 4.0–4.4 for microbial safety
2. Added ascorbic acid (INS 300) or citric acid (INS 330) to preserve color and control oxidation
3. Decided on processing type:
Hot fill (80–85°C)
Cold fill + preservatives
HPP (High Pressure Processing) – cleanest for preservative-free

Batch stability test completed:

Sedimentation
Separation
Taste degradation over time

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5. Packaging & Shelf Life Strategy

Packaging selected:

Glass bottle (premium)
Multilayer PET (lightweight & economical)

Barrier technology used:

Oxygen barrier films or nitrogen flushing

Shelf-life validated via:

Real-time (ambient/chilled)
Accelerated shelf-life study

Label claim proof (e.g., 6-month shelf life without separation)

6. FSSAI Compliance & Labeling

Registered under Food Category 14.1.4

Only FSSAI-approved additives used:

INS 330 – Citric Acid
INS 300 – Ascorbic Acid
INS 960 – Stevia

Label Includes:

Veg symbol
FSSAI license number
Allergen declaration (if nut milk is used)
Caffeine mg per 100ml (if >145mg/L)

No unapproved ingredients like CBD, non-notified mushrooms, or synthetic boosters

7. Clean Label Audit

Free from:

Artificial preservatives
Carrageenan
Synthetic emulsifiers or flavorings

Supports these taglines:

"No Added Sugar" (only if no free sugars used)
"Plant-Based"
"Non-GMO"
"Gluten-Free"
"No Artificial Flavors or Colors"

8. Final Pre-Launch Checklist

1. Sensory test passed (taste, texture, aroma)
2. Trial run completed in selected co-manufacturer
3. Regulatory label review done
4. FSSAI + export documentation ready
5. Marketing claims mapped to ingredients
6. Batch-coded documentation is ready for traceability

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Common Mistakes to Avoid

1. Using unlisted adaptogens or herbs
2. Overuse of stevia causes a bitter aftertaste
3. Ignoring emulsifier needs in nut milk-based drinks
4. Assuming "natural" means "compliant"
5. Not conducting accelerated shelf-life testing



Bonus Tips for Success

- ✓ Start with pilot batches in 20L to 100L
- ✓ Invest in a co-packer experienced in hot fill or HPP
- ✓ Keep samples from every batch for 3–6 months
- ✓ Track TPC, yeast, and mold consistently
- ✓ Always get labels reviewed by an FSSAI expertboosters

Project Timelines

Functional RTD Matcha Drinks

Stage	Task Description	General Recipe (30 Days)	Unique Recipe (60 Days)	Functional Recipe (90 Days)	Assigned To	Remarks/Notes
1. R&D Kickoff	Concept finalization and market research	Day 1-3	Day 1-7	Day 1-10	R&D Team	Includes trend analysis
2. Raw Material (RM)	Procurement of raw materials	Day 4-6	Day 8-15	Day 11-20	Procurement	Ensure quality and compliance
3. Trial Formulation	Initial trials and optimization	Day 7-15	Day 16-30	Day 21-45	R&D Team	Minimum 3 trial runs
4. Sensory Analysis	Testing for taste, texture, and aroma	Day 16-20	Day 31-40	Day 46-60	QA Team	Conduct with experts and focus groups
5. Stability Testing	Assess shelf life and physical stability	Day 21-25	Day 41-50	Day 61-75	R&D & QA Team	Simulate storage conditions
6. Final Optimization	Adjustments based on test results	Day 26-28	Day 51-55	Day 76-85	R&D Team	Ensure compliance with desired attributes
7. Documentation	SOP finalization and recipe handover	Day 29-30	Day 56-60	Day 86-90	R&D Team	Include process, ingredients, and QC parameters