

M C P S E R V E R

N O C O D E

C L O U D H O S T E D

Grape Press Cycle Optimizer MCP

Get precise pressing schedules for better juice yield and quality.

Grape Press Cycle Optimizer MCP gives your AI client the technical data needed to manage pressing operations. It calculates optimal schedules based on grape variety and equipment, predicts the quality of juice fractions, and simulates how contact time affects bitterness and phenolic profiles. Use it to compare how different press types will perform before you start a run.

A+ Quality Score 100/100

enology

viticulture

juice-yield

phenolic-extraction

press-optimization



The connectivity layer between AI and the world's software.

Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

Your AI Connections Run Through Vinkius Cloud

The world's largest
managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.

— Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256

Encryption at rest

Ed25519

PKI vault signatures

24h TTL

Ephemeral session keys

V8 Isolate

Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT`https://edge.vinkius.com/{token}/mcp`

Claude



Cursor



VS Code



Windsurf



Grok



Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

06 — Honeypot Trap System

Phantom credentials are injected into isolated environments. If a honeypot is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1)
Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

Get started at cloud.vinkius.com — connect your AI agent in under 60 seconds.

Grape Press Cycle Optimizer MCP

4 tools available

Cloud-hosted on Vinkius

You can use this MCP to take the guesswork out of the pressing room. Instead of relying on intuition, you provide your AI agent with specific grape characteristics and equipment specs to get mathematically backed pressing schedules. It handles the heavy lifting of calculating pressure stages and timing to hit your specific yield and quality targets.

If you need to know how a specific press run will turn out, the MCP can estimate the phenolic and color profiles of different juice portions. You can also run simulations to see how changing contact time might impact bitterness or how a bladder press compares to a basket press for a specific variety. It turns your AI client into a technical enology consultant that helps you balance juice volume against the desired chemical profile of the must.

Core Capabilities

01 — Pressing Schedule Generation

Your agent creates step by step pressure and timing instructions for specific grape varieties.

02 — Quality Fraction Prediction

The AI estimates the color and phenolic content of juice based on extraction timing.

03 — Equipment Comparison

Your agent evaluates the performance differences between basket, bladder, and membrane presses.

04 — Contact Time Simulation

The AI models how varying contact duration changes the bitterness and phenolic profile.

05 — Yield Target Optimization

The agent adjusts pressure stages to hit specific juice volume percentages.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/en/ai-agent-connect/grape-press-cycle-optimizer — connect your AI agent in three steps.

- 01

Connect your preferred MCP client like Claude or Cursor to Vinkius.
- 02

Provide your grape variety, equipment type, and target yield to your agent.
- 03

The agent uses the MCP tools to run calculations or simulations.
- 04

Receive specific pressure stages, timing, or quality predictions.

Connect your AI client to Vinkius to start using these winemaking tools immediately.

Built For

This MCP is built for professionals managing grape processing and juice extraction.

Winemakers

They hand off grape variety and target yield data to get optimized pressing schedules.

Enologists

They use the tool to predict how different press methods will affect the chemical profile of the must.

Cellar Managers

They use the simulations to plan equipment usage and timing for upcoming press cycles.

What Changes When You Connect

- 01

Calculates specific pressure stages to hit yield targets.
- 02

Predicts phenolic and color profiles before pressing begins.
- 03

Compares equipment performance across different grape varieties.

04 Simulates the impact of contact time on bitterness.

Real-World Applications

Targeting Specific Yields

Set a 70% yield target for Cabernet Sauvignon and get a multi stage pressure schedule.

Quality Control

Estimate the phenolic content of the first juice fraction for Chardonnay at 0.8 bar.

Equipment Selection

Compare how a bladder press performs against a basket press for Pinot Noir at a 60% yield.

Bitterness Management

Run simulations to see how changing contact time affects the final phenolic profile.

4 Tools Available

#	TOOL	DESCRIPTION
01	predict_fraction_quality	This tool estimates the quality profile of specific juice portions based on when they are extracted during the press.
02	simulate_contact_impact	This tool evaluates how changing the duration of contact affects the final phenolic profile of the juice.
03	calculate_optimal_cycle	This tool generates a complete pressing schedule to meet your specific yield and quality goals.
04	compare_press_methods	This tool compares how different types of equipment, like basket or membrane presses, handle specific grape varieties and targets.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

- U** Plan a press cycle for Cabernet Sauvignon using a membrane press with a 70% yield target and a quality target of 0.4.



The optimal cycle for Cabernet Sauvignon using a membrane press involves three pressure stages: 0.5 bar, 1.2 bar, and 1.8 bar, with a total cycle time of 145 minutes. This will achieve a 70% yield with an expected phenolic prediction of 0.38.

- U** What is the quality of the first press fraction for Chardonnay using a basket press at 0.8 bar?



The first fraction for Chardonnay at 0.8 bar pressure via basket press has a juice volume of 450L, a low phenolic content of 0.12, and a light color intensity.

- U** Compare how a bladder press vs a basket press would handle Pinot Noir for a 60% yield.



For Pinot Noir at 60% yield, the bladder press offers a higher quality score of 0.85 compared to the basket press score of 0.72, due to more controlled pressure distribution.

Frequently Asked Questions

01 What equipment can this MCP model?

The MCP can compare and model performance for basket presses, membrane presses, and bladder presses.

02 Can I use this with Claude or Cursor?

Yes, you can connect this MCP to any MCP compatible client including Claude, Cursor, Windsurf, and VS Code.

03 How does it help with juice quality?

It predicts the phenolic and color profiles of juice portions and simulates how contact time affects bitterness.

04 Does it provide specific pressure settings?

Yes, the `calculate_optimal_cycle` tool generates complete schedules including specific pressure stages like 0.5 bar or 1.8 bar.

05 How do I get started?

Simply subscribe on Vinkius and connect your AI client once to access the hosted tools.

Go Live in 60 Seconds

Get your connection token from cloud.vinkius.com, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

`https://edge.vinkius.com/[TOKEN]/mcp`

CLIENT	WHERE TO CONFIGURE
 Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
 Cursor	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
 VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add <code>"grape-press-cycle-optimizer": { "url": "..." }</code>
 Windsurf	MCP Settings → <code>mcp_settings.json</code> → Add endpoint URL
 ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
 Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

-  Ask ChatGPT 
-  Ask Claude 
-  Ask Perplexity 
-  Ask Gemini 
-  Ask Grok 

READY TO CONNECT

Grape Press Cycle Optimizer is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and
start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

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DOCUMENT INFORMATION

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Platform	Vinkius Cloud for AI Agents
Endpoint	<code>https://edge.vinkius.com/{token}/mcp</code>

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