

CONFIDENTIAL — SPECTRUM INVESTMENT MEMO

THE PROTEIN BREWERY B.V.

Candidate Assessment & Investment Thesis

Mijkenbroek, Breda, Netherlands

Submerged fermentation of *Rhizomucor pusillus* (thermophilic fungal mycoprotein platform)

Six-Axis Acquisition Analysis

Prepared for SPECTRUM Group | 19/04/2026

Executive Summary

The Protein Brewery B.V. (TPB) is a Dutch food ingredient biotech founded in January 2020 as a spin-off of BioscienZ. It produces Fermotein®, a B2B mycoprotein ingredient based on the proprietary thermophilic fungal strain *Rhizomucor pusillus* CBS 143028. The company operates a commercial demo plant in Mijkenbroek, Breda with a current capacity of 500-600 MT per year. Revenue is not publicly disclosed; the business is in the early commercial phase across the US and Singapore, with EU commercial launch expected in Q3 2026 following European Commission authorization. The company has raised ~€52M in equity across two formal rounds plus grants, and employs a multi-geography regulatory clearance strategy across four markets.

TPB has secured two of the most important regulatory milestones in the alternative protein ingredient space: self-affirmed GRAS in the US (2021) and a positive EFSA scientific opinion (December 2025), making Fermotein the first novel fungal biomass to receive EFSA backing. Singapore approval was secured in 2024 with first customer launches targeted for Q1 2026. The investor base includes Novo Holdings, Roquette Ventures, Invest-NL, and the Brabant Development Agency, collectively forming a cap table with significant strategic investor presence and government development mandates that will require careful navigation in any acquisition process.

The primary technology differentiator is structural and durable. The *Rhizomucor pusillus* strain tolerates acidic pH and high temperatures, enabling non-sterile fermentation with substantially lower capital intensity than *Fusarium*-based competitors such as Quorn (Marlow Foods) and ENOUGH (Abunda). The strain and production process are both patent-protected. This combination of proprietary biology, process IP, and capital efficiency makes TPB the most defensible mycoprotein asset in Europe at this stage of the market.

TPB is assessed as Roadmap A (B2B ingredients manufacturing). The investment case rests on three pillars: exceptional technology and regulatory IP that is not replicable without years of equivalent investment; a time-sensitive acquisition window that closes as EU commercial revenue materializes and valuation crystallizes; and strong SPECTRUM portfolio complementarity as the fungal protein node in a multi-technology alternative protein platform. The overall assessment is **MONITOR — Tier 2, with priority escalation recommended within 6 months to determine Roquette ROFR position**. The current 12-18 month pre-EU-launch window is the last likely entry point at sub-€100M enterprise value.

Candidate Snapshot

| Field | Detail |
|------------|---|
| Company | The Protein Brewery B.V. |
| Founded | January 2020, Breda, Netherlands (spin-off of BioscienZ B.V., est. 2010) |
| Founder(s) | Wim de Laat — molecular scientist, 30+ years industrial fermentation experience; prior roles at DSM (Principal Scientist, Bioprocessing), Royal Nedalco, and Soiltech |
| CEO | Thijs Bosch (since June 2025) — former Cosun Plant Protein business lead and Fonterra Managing Director Europe; B2B food ingredients specialist |
| CTO / CSO | Wim de Laat (co-owner, scientific director) — IP originator and strain architect; active in |

| | |
|-------------------|--|
| | technical and scientific capacity post-CEO transition |
| CCO / CMO | Not publicly identified |
| Total Raised | ~€52M equity (Series A + Series B) + Est. €3-5M in EU Horizon and Dutch innovation grants |
| Key Investors | Novo Holdings, Roquette Ventures, Unovis Asset Management, Invest-NL, BOM (Brabant Development Agency), Madeli |
| Platform | Submerged fermentation of <i>R. pusillus</i> CBS 143028 under non-sterile, low-pH, high-temperature conditions; downstream wet processing to produce Fermotein® mycoprotein powder |
| Facilities | Single commercial demo plant, Mijkenbroek, Breda, Netherlands |
| Capacity | 500-600 MT/year (current); 2,500 MT/year (expansion at same site, funded by Series B) |
| Certifications | US: GRAS self-affirmed (2021); Singapore: Novel Food approval (2024); EU: EFSA positive scientific opinion (December 2025; EC authorization pending, Est. Q3 2026) |
| Target Markets | B2B food ingredient; food manufacturers in meat alternatives, dairy alternatives, sports nutrition, nutraceuticals; geographies: US (active), Singapore (Q1 2026 launch), EU (Q3 2026 est.), UK (submission in progress) |
| Est. Revenue | Not publicly disclosed; business in early commercial phase in US and Singapore |
| Regulatory Status | Near-complete global clearance: GRAS (US), Singapore Novel Food, EFSA positive opinion with Commission authorization in process; UK ACNFP submission pending |

Axis 1: Funding History & Valuations

1.1 Funding Rounds

| Round | Date | Amount | Lead / Key Investors | Purpose |
|--------------------|----------------|---------------|---|--|
| Pre-seed / Founder | 2010–2019 | Not disclosed | Wim de Laat, friends & family, Dutch innovation grants | BioscienZ R&D; strain identification and selection (8-year program) |
| Series A | November 2020 | €22M | Novo Holdings (lead); Roquette Ventures, Unovis Asset Management (co-investors) | Technology scale-up, demo plant construction, EU Novel Food dossier submission (EFSA filed 2020) |
| Grants | 2020–2025 | Est. €3-5M | EU Horizon, Netherlands government | Specific programs including dairy alternative applications; R&D co-funding |
| Series B | September 2025 | €30M | Novo Holdings (follow-on); Invest-NL, BOM, Roquette Ventures, Unovis Asset Management, Madeli | Demo plant expansion to 2,500 MT/year; US and Singapore commercial launch; sales and application development |
| Total | | ~€52-57M | | |

1.2 Investor Analysis

Novo Holdings leads the investor base in both capital and strategic weight. As the holding company of Novo Nordisk with €142bn AUM, Novo Holdings brings institutional staying power and an alignment between Fermotein's nutritional profile and the GLP-1 and metabolic health narrative. The Novo Holdings position signals high conviction but also high valuation expectations at exit. Novo Holdings is unlikely to agree to a below-market structured acquisition without competitive tension or a clearly articulated strategic premium.

Roquette Ventures is the most consequential investor from an acquisition feasibility perspective. Roquette is one of Europe's largest plant protein and specialty starch producers. Its investment rationale is directly tied to feedstock integration: Fermotein can be produced from carbohydrate byproducts of the pea protein isolation process, meaning Roquette sees TPB as a vertically integrated opportunity. Roquette almost certainly holds strategic investor rights, which may include ROFR provisions or anti-dilution protections. This is the highest-priority DD item before any SPECTRUM offer is made. If Roquette exercises a ROFR, SPECTRUM's acquisition path is blocked.

Invest-NL and BOM (Brabant Development Agency) are government-linked development finance institutions. Their mandates typically include local employment, regional economic development, and social return targets. These investors are generally not exit-oriented and may resist acquisition structures that could move the company's

operational center out of Breda. They may also require employment maintenance covenants. Governance consent from these parties will need to be built into any acquisition structure.

Unovis Asset Management is a specialist alternative protein VC that has been with the company since the Series A. As a fund investor with a defined return horizon, Unovis is the most likely early ally in a structured exit process if approached at the right stage. Unovis mandates typically run 8-10 years, suggesting a 2026-2028 exit window is approaching for their original Series A position.

Positive observation: no pure financial PE investors are present in the cap table. The investor base is entirely strategic or specialist VC, which means no buyout investor will compete with SPECTRUM on acquisition terms.

1.3 Valuation Assessment

| Metric | Low Estimate | High Estimate |
|-------------------------------------|--|----------------|
| Post-money (Series A, Nov 2020) | Est. €60M | Est. €90M |
| Post-money (Series B, Sep 2025) | Est. €80M | Est. €130M |
| Implied revenue multiple (Series B) | Not calculable — revenue not disclosed | Not calculable |
| SPECTRUM target entry | Est. €70M | Est. €100M |

Note: Series B post-money not publicly disclosed. Estimates are derived from typical alt protein B2B ingredient valuations at commercial demo stage in the 2025 market environment (materially re-rated from 2021-2022 peak). The SPECTRUM target entry range of €70-100M reflects a modest discount to Series B implied valuation, justified by pre-EU-commercial timing and the absence of disclosed revenue. A ROFR exercise by Roquette would effectively set the minimum competitive price and eliminate SPECTRUM's negotiating leverage.

1.4 SPECTRUM Assessment

The capital structure presents a narrow but viable acquisition path. SPECTRUM's optimal entry window is the next 12-18 months, before EU Commission authorization converts the EFSA opinion into formal approval and before the EU commercial launch generates a revenue run-rate that will reprice the asset materially upward. The three government-linked investors (Invest-NL, BOM, Novo Holdings via Danish institutional mandate) introduce governance complexity but not insurmountable barriers, provided SPECTRUM structures the acquisition with employment protection commitments and a Netherlands operational headquarters commitment during the TRIM phase.

The central strategic question is Roquette's ROFR position. This must be assessed as the first DD deliverable. If Roquette holds a ROFR, SPECTRUM should evaluate whether a co-acquisition or licensing arrangement can be structured with Roquette as a feedstock partner rather than a competing buyer.

Axis 2: Product Mix & Commercial Traction

2.1 Core Technology

The Protein Brewery's platform is defined by a single, proprietary thermophilic fungal strain: *Rhizomucor pusillus* CBS 143028. The strain was selected over an 8-year screening program from thousands of candidates, based on four criteria: nutritional yield, production efficiency, reduced environmental impact, and taste neutrality. This selection process constitutes a durable, non-replicable competitive moat: any competitor seeking to replicate the underlying biology would require equivalent time and capital before reaching the same scientific baseline.

The fermentation process operates at low pH (acidic conditions) and elevated temperature. This extremophilic characteristic eliminates the requirement for sterile fermentation, which is the primary capital cost driver in conventional submerged liquid fermentation. The result is a facility design that is structurally less capital-intensive per ton of output than *Fusarium venenatum*-based competitors (Quorn, ENOUGH/Abunda), estimated by the company to be approximately twice as cost-effective.

Downstream processing converts wet fungal biomass into Fermotein® powder. The final product contains approximately 50% complete protein and 35% dietary fiber, with a full vitamin and mineral profile. It is allergen-free, taste-neutral, and vegan. Both the strain (CBS 143028) and the production process are patent-protected, providing dual-layer IP protection covering the biological asset and the manufacturing method.

2.2 Product Portfolio

| Product / Platform | Application | Target Segment | Status | Key Differentiators |
|----------------------------------|--|---|--|--|
| Fermotein® Mycoprotein Powder | Meat analogues, dairy alternatives, sports nutrition, functional foods, nutraceuticals | B2B food manufacturers; EU/US/Singapore | Commercial (US, Singapore); EU pending EC authorization (Q3 2026 est.) | Non-sterile process (lower CapEx); 50% complete protein + 35% fiber; allergen-free; taste-neutral; patent-protected strain |
| Fermotein® application variants | Specific functional applications (texture, binding, nutrition enrichment) | B2B food R&D teams | Development stage (application work funded by Series B) | Versatility in matrix applications; Roquette feedstock integration potential |

2.3 Regulatory Position

| Geography | Status | Timeline | Notes |
|---------------------------------|--|--|---|
| EU (EFSA / European Commission) | EFSA positive scientific opinion received December 1, 2025; EC authorization pending | Est. Q3 2026 for EC authorization and Union list inclusion | First novel fungal biomass to receive EFSA positive opinion; safety profile confirmed across genotoxicity, allergenicity, and composition. EFSA dossier submitted May 2020; opinion took 5+ years |
| USA (FDA) | GRAS self-affirmed, 2021 | Active | US commercial activities ongoing; LBB Specialties distribution agreement signed October 2024 |
| Singapore (SFA) | Novel Food approval granted, 2024 | Active; first customer launches Q1 2026 | Singapore positioned as Asia commercial beachhead |
| UK (ACNFP) | Submission in progress | Pending | UK Post-Brexit Novel Food assessment underway; timeline not publicly confirmed |
| Other markets | Not disclosed | Not disclosed | No confirmed filings outside above geographies |

2.4 Commercial Traction

Commercial activity is in the early activation phase. In the US, the company has signed a distribution agreement with LBB Specialties, a specialty ingredient distributor covering the North American food, beverage, and supplement market (announced October 2024). Customer names are not publicly disclosed, but the company has confirmed US customers will launch Fermotein-containing products in 2026. In Singapore, first customer product launches are targeted for Q1 2026.

EU commercialization is contingent on European Commission authorization following the December 2025 EFSA positive opinion. This is the final procedural step; the scientific safety question has been resolved. The company expects authorization and commercial availability in the EU from approximately Q3 2026. The EU market represents the largest commercial opportunity given the regional production advantage and proximity to major food manufacturers.

Revenue is not publicly disclosed. The business has been principally pre-commercial until 2025, with limited early-stage US sales activity. The Series B funding (September 2025) was specifically structured to fund the transition from proof-of-scale to commercial revenue generation. No B2B customer names, volumes, or pricing arrangements are publicly confirmed.

2.5 SPECTRUM Three-Pillar Score

Roadmap type: **A — Ingredients Manufacturing**

| Pillar | Score | Assessment & Rationale |
|--------------------------|-------|--|
| P1: Biology & Genetics | 5 / 5 | Proprietary <i>R. pusillus</i> strain CBS 143028 selected from thousands of candidates over 8-year program. Strain and process both patent-protected. EFSA dossier approval confirms regulatory-grade characterization. Wim de Laat's 30 years of industrial fermentation expertise is embedded in the IP. This pillar is TPB's primary competitive moat. |
| P2: Nutrition & Medium | 4 / 5 | Fermotein delivers ~50% complete protein and ~35% dietary fiber with full micronutrient profile. Non-allergenic. Feedstock flexibility covers cassava, corn, potatoes, sugarcane, and sugar beet. Roquette's pea protein byproduct (starch, carbohydrates) is a directly identified feedstock synergy. Unit cost per ton not publicly disclosed, limiting full scoring of conversion efficiency and medium optimization. |
| P3: Technology / Systems | 3 / 5 | Commercial demo operational at 500-600 MT/year with documented expansion plan to 2,500 MT (same site, funded). Non-sterile process provides structural CapEx advantage. Industrial-scale fermentation (10,000+ MT/year) has not been demonstrated and represents the next unproven transition. Automation level at demo scale is not publicly confirmed. |
| Pillar Parness / Balance | GOOD | P1 (Biology) is exceptional and constitutes a durable moat. P2 (Nutrition) is strong with credible feedstock flexibility. P3 (Technology/Scale) is functional at demo level but requires the next phase of capital and engineering investment. Pillars are in coherent tandem for a company at this stage. Primary development priority post-acquisition: P3 scale-up to 2,500 MT and industrial site planning. |

Axis 3: Pricing Curve & Market Position

3.1 Market Context

The mycoprotein ingredient market is valued at approximately \$679M in 2025 and is projected to reach \$1.2bn by 2032 at an 8.5% CAGR. This reflects fungal protein specifically. The broader single-cell protein market (including bacterial and algal SCP) is substantially larger: \$20.4bn in 2022, projected to \$36.4bn by 2030, reflecting the full range of microbial biomass protein applications across food, feed, and industrial uses.

The B2B food ingredient segment, which is TPB's target, is dominated by the need to displace conventional proteins (soy, pea, whey) in meat analogue and dairy alternative formulations. Demand drivers are threefold: sustainability sourcing commitments from major food companies; formulation innovation in the protein enrichment category; and regulatory push toward diverse protein sources in the EU and Singapore. The GLP-1 market tailwind (metabolic health, high-protein functional foods) is an emerging demand driver specifically relevant to Fermotein's amino acid and fiber profile.

The competitive market structure divides between one dominant incumbent consumer brand (Quorn/Marlow Foods, *Fusarium venenatum*, consumer-facing) and a growing B2B ingredient tier including ENOUGH (Abunda), TPB (Fermotein), and a smaller cohort of emerging fungal and microbial protein platforms. Mycorena (Sweden) filed for bankruptcy and was acquired, removing one direct competitor.

3.2 Pricing Benchmarks

| Product Category | Price Range (€/kg) | Context |
|--|--------------------|---|
| Conventional soy protein isolate | €1.5 – 3 / kg | Global commodity; Brazilian and US dominant producers; standard food-grade SPI |
| Conventional pea protein isolate | €2.5 – 5 / kg | European and North American producers; premium over soy; Roquette primary supplier |
| Whey protein concentrate | €4 – 8 / kg | Dairy byproduct; nutritionally complete; EU dominant; supply constrained 2025-2026 |
| <i>Fusarium</i> mycoprotein (ENOUGH/Abunda, B2B) | Est. €6 – 12 / kg | B2B ingredient estimate based on market positioning; sterile fermentation cost base |

| | | |
|---|-------------------|---|
| Fermotein® (TPB, estimated blended ASP) | Est. €8 – 15 / kg | Premium positioning vs. pea/soy; below Fusarium competitors at scale due to non-sterile process; long-term target sub-€5/kg at industrial scale |
|---|-------------------|---|

3.3 Cost Reduction Pathway

The principal cost reduction lever is production scale. At 500-600 MT/year (current demo), fixed costs dominate. The expansion to 2,500 MT/year at the same Mijkenbroek site (Series B funded) will deliver the first meaningful unit cost reduction without requiring a new facility build. Beyond 2,500 MT, an industrial-scale facility at 10,000+ MT/year will be needed to reach a sub-€5/kg cost target and compete directly with specialty pea protein as a commodity-adjacent ingredient.

The second structural lever is non-sterile process design. TPB's process inherently avoids the sterilization energy cost, containment CapEx, and batch failure risk of sterile fermentation. This is not a future roadmap item — it is already embedded in the current facility and design. As production scales, this advantage compounds.

The third lever is feedstock integration. Roquette's investment explicitly reflects the potential to use pea protein isolation byproducts (starches, carbohydrates) as fermentation substrate. At the right scale, direct feedstock supply from Roquette would reduce medium cost and provide supply chain certainty. This synergy is not yet operationalized.

The fourth lever is application engineering. Moving from commodity powder to application-specific variants enables ASP premium capture without cost reduction, improving margin at the same production cost base.

3.4 Competitive Landscape

| Competitor | Geography | Technology | Market Position | Key Differentiation vs. TPB |
|---------------------------------|-------------------|--|--|--|
| Quorn / Marlow Foods | UK / Global | Fusarium venenatum (sterile, continuous) | Dominant consumer brand; established retail distribution | Consumer brand, not ingredient supplier; high-sterile CapEx; regulatory moat via pre-1997 EU authorization |
| ENOUGH (Abunda) | UK / EU | Fusarium venenatum (submerged fermentation) | B2B ingredient; largest new-build mycoprotein facility in EU | Higher CapEx per ton; broader production scale; no Rhizomucor IP |
| Mycorena (acquired by Naplasol) | Sweden (acquired) | Fusarium venenatum | Filed for bankruptcy; acquired; operations uncertain | Eliminated as independent competitor |
| Solar Foods | Finland | Gas fermentation (CO ₂ + H ₂) | Niche, very early commercial; different technology class | Not a direct competitive threat; different substrate |
| MicroHarvest | Germany | Bacterial SCP (Komagataella phaffii) | Early stage, animal feed focus | Feed market focus; different regulatory pathway |

Axis 4: Capex Steps & Scale-Up Trajectory

4.1 Facility Timeline & Phase Mapping

| Phase | Timeline | Capacity | Funding | Capex Est. | Status |
|-------------------------------|-----------|---------------|---|------------------------------------|-------------|
| Lab / R&D (BioscienZ) | 2010–2019 | Bench scale | Founder / grants / BioscienZ services revenue | Est. <€3M | COMPLETE |
| Pilot Plant | 2019–2020 | Pilot scale | Pre-seed / grants | Est. €3-5M | COMPLETE |
| Commercial Demo (Mijkenbroek) | 2020–2025 | 500-600 MT/yr | Series A (€22M) | Est. €12-18M facility + operations | OPERATIONAL |
| Demo Expansion (same site) | 2025–2027 | 2,500 MT/yr | Series B (€30M) | Est. €15-20M additional | IN PROGRESS |

| | | | | | |
|------------------|-------|--------------------|---|--|---------|
| | | | | fermentation capacity | |
| Industrial Scale | 2028+ | Est. 10,000+ MT/yr | Future round / strategic partner / SPECTRUM | Est. €80-150M (greenfield or multi-site) | CONCEPT |

4.2 Capex Intensity Assessment

Capex intensity score: **3 / 5**

The primary technical and capital de-risking has been completed through Series A: the proprietary strain is characterized, the production process is validated, and the demo facility is operational. The current Series B expansion to 2,500 MT at the existing Mijkenbroek site is a lower-risk scale-up: adding fermentation volume to a proven site, not building a new facility. This justifies a moderately favorable CapEx intensity score.

The score does not reach 4 or 5 because the industrial-scale build (10,000+ MT/year) — which is required to achieve the unit economics needed for mainstream food ingredient market penetration — remains entirely ahead. This will be the largest single capital commitment in TPB's development, estimated at €80-150M, and represents the unproven phase of the trajectory.

The non-sterile process design is a genuine and durable CapEx efficiency advantage. TPB's process is estimated to be approximately twice as capital-efficient per ton as Fusarium-based sterile fermentation. This means the industrial-scale build, while large in absolute terms, will be materially less capital-intensive than building an equivalent-capacity ENOUGH or Quorn facility.

Axis 5: Team & Organization

5.1 Leadership Team

| Name | Role | Background |
|---------------------------|--|--|
| Thijs Bosch | CEO (since June 2025) | 15+ years B2B food ingredients and protein sector leadership. Former head of Cosun's plant protein business. Previously Managing Director Europe at Fonterra. Brings commercial scale-up credentials in B2B food ingredients. |
| Wim de Laat | Founder / Co-Owner / Scientific Director | Molecular scientist, 30+ years industrial fermentation. Founded Bioscienz (2010). Prior roles: Principal Scientist Bioprocessing at DSM; Manager R&D at Royal Nedalco; Manager R&D at Soiltech. IP originator. Strain selection program architect. Remains active in technical capacity. |
| Sue Garfitt | Former CEO (September 2022 – June 2025) | Prior CEO of Alpro (Danone); extensive plant protein commercialization experience. Led TPB through EFSA filing progress, Singapore approval, and Series B preparation. Departed after guiding company to commercial-stage readiness. |
| Bente Korsgaard Andersen | Chair, Supervisory Board | Confirmed Chair. Background not publicly detailed in available sources. |
| CFO | Not publicly identified | — |
| CCO / Commercial Director | Not publicly identified | — |
| Regulatory Director | Not publicly identified | Key asset in a company defined by regulatory milestones. |

5.2 Supervisory Board

Board composition beyond Bente Korsgaard Andersen (Chair) is not publicly disclosed in detail. Investor representation is assumed from Novo Holdings and Roquette Ventures based on their lead investor positions. The involvement of Invest-NL and BOM as investors suggests development-finance board observers or representation rights. Full supervisory board composition, independence, and governance quality cannot be confirmed from public sources.

5.3 Team Assessment

TPB has undergone two CEO transitions in six years: from founder Wim de Laat to Sue Garfitt (September 2022) and from Garfitt to Thijs Bosch (June 2025). The second transition reflects a deliberate upgrade from a brand commercialization profile (Garfitt/Alpro) to a B2B ingredients and industrial scale-up profile (Bosch/Cosun/Fonterra). This is the correct move for the current phase of the business. The risk is short-term: Bosch assumed the role just as the Series B closed and the company entered its most complex commercial activation phase. He is new to the organization and must build relationships with all key investors simultaneously. Wim de Laat's continued active involvement as co-owner and scientific director mitigates key-person risk on the technology side. The company's core IP is patent-protected, which reduces (but does not eliminate) the risk of technical knowledge walking out the door.

The absence of publicly identified CFO, CCO, and regulatory leadership is a gap in SPECTRUM's pre-acquisition profile building. Regulatory expertise is particularly critical: the EU Commission authorization process and the UK ACNFP submission will require sustained specialist engagement. Any TRIM-phase organizational reduction must protect the regulatory function in its entirety.

Total FTE count is not publicly disclosed. For a company producing 500-600 MT/year at demo scale with active commercial programs in three geographies and regulatory submissions in four, the team is likely 30-60 FTE. SPECTRUM should assess overhead-to-core ratio carefully, particularly sales and marketing spend ahead of EU launch.

Axis 6: SPECTRUM Business Case

6.1 Strategic Rationale

The Protein Brewery fills the fungal biomass mycoprotein node in SPECTRUM's alternative protein ingredient portfolio, a category that no existing SPECTRUM asset covers. The specific reasons to acquire are fourfold.

First, the IP position is non-replicable on a commercially meaningful timeline. A competitor seeking to develop an equivalent *R. pusillus* platform would require 8-10 years of strain development and substantial capital before reaching TPB's current regulatory and operational baseline. SPECTRUM acquires a durable first-mover position in the lowest-CapEx mycoprotein production technology available in Europe.

Second, the regulatory clearance across three jurisdictions eliminates the highest-risk development gate. EFSA positive opinion in December 2025 is the most difficult regulatory milestone any novel food ingredient can achieve in the EU. The Commission authorization step is procedural. SPECTRUM acquires a company that has spent five years and ~€52M achieving what competitors have not done. The regulatory moat is real.

Third, the acquisition timing is optimal for entry valuation. The EU commercial launch has not yet generated revenue. The first 18 months of EU revenue will reprice the asset materially upward as revenue run-rate validates the investment case. SPECTRUM's entry in the next 12 months captures the pre-commercial value before this repricing.

Fourth, there are two direct SPECTRUM commercial synergies available from day one: shared back-office overhead reduction and cross-selling Fermotein alongside other SPECTRUM alternative protein ingredients to overlapping B2B food manufacturer customers.

6.2 SPECTRUM Synergy Mapping

| Synergy Category | Opportunity Description | SPECTRUM Action |
|--------------------|---|--|
| 1. Cost & Overhead | TPB's back-office functions (finance, HR, legal, compliance, regulatory support) can be absorbed into SPECTRUM shared services. A pre-commercial company of 30-60 FTE | Identify and transfer finance, HR, legal, and non-regulatory compliance functions to SPECTRUM shared services in months 1-6 of TRIM. Protect regulatory function entirely. |

| | | |
|--------------------------------------|--|--|
| | typically carries 30-40% overhead relative to its core technical and commercial team. | Target 20-30% overhead reduction. |
| 2. Commercial (One-Stop Shop) | Fermotein adds the fungal protein category to SPECTRUM's portfolio. B2B food manufacturers sourcing alternative proteins will find a single SPECTRUM relationship covering multiple format needs. LBB Specialties relationship in North America is an immediate channel asset. | Hand commercial activities to SPECTRUM sales team on Day 1 of TRIM. Brief SPECTRUM B2B relationships on Fermotein. Use LBB Specialties agreement as North America channel. Prepare EU customer activation for Q3 2026 EC authorization. |
| 3. Financial Scale (VC to PE Bridge) | TPB is at the VC-to-commercial transition point. Its investor base is not seeking PE-style financial optimization. SPECTRUM can structure acquisition at pre-revenue EU valuation and capture the full commercial scale-up value through TRIM. | Entry target: €70-100M. Exit target: €180-250M at full GO list completion with established EU revenue run-rate. SPECTRUM REFINGO return horizon: 3-4 years post-acquisition. |
| 4. Capex Management | The 2,500 MT/year expansion at Mijkenbroek is funded by Series B but needs project management and engineering oversight. SPECTRUM's PMO centre of excellence can manage this program more efficiently than a standalone 30-60 FTE startup. | Integrate Mijkenbroek expansion into SPECTRUM's PMO framework immediately. Commission a SPECTRUM techno-economic analysis for the 10,000 MT/year industrial facility design within 6 months of acquisition. |
| 5. Engineering & PMO | TPB's fermentation scale-up challenges (process control, downstream processing, automation) are directly adjacent to other fermentation and bioprocessing assets in SPECTRUM's portfolio. Cross-site learnings apply. | Deploy SPECTRUM engineering centre of excellence to Mijkenbroek expansion management. Share instrumentation, automation design, and DSP learnings across fermentation assets in portfolio. |
| 6. Execution Speed | TPB's EU commercial activation in Q3 2026 requires simultaneous regulatory authorization management, customer pipeline activation, and application development support. SPECTRUM's shared regulatory and commercial resources accelerate the EU launch. | Assign SPECTRUM regulatory affairs resource to EC authorization monitoring from acquisition close. Pre-activate EU customer pipeline from SPECTRUM's existing food manufacturer relationships. Target first EU B2B customer contract before end of 2026. |

6.3 Acquisition Scenario Analysis

| Scenario | Entry Price | Exit Value | Multiple | Key Assumptions |
|----------|---|------------|----------|--|
| BEAR | Est. €85M | Est. €110M | ~1.3x | EC authorization delayed beyond 2026; EU commercial traction limited; Roquette exercises ROFR on partial stake blocking full SPECTRUM control; synergies only partially realized; exit as minority stake or regional asset sale. |
| BASE | Est. €85M | Est. €200M | ~2.35x | EC authorization Q3 2026 on schedule; US and Singapore commercial revenue establishes run-rate; 2,500 MT expansion completed by 2028; SPECTRUM synergies fully realized; exit to strategic buyer or SPECTRUM full handover with EU revenue validated. |
| BULL | Est. €75M (pre-authorization discount negotiated) | Est. €300M | ~4.0x | EC authorization Q3 2026; EU launches drive €30-40M revenue by Year 3; industrial-scale facility planning underway; strategic buyer (Roquette, DSM-Firmenich, Kerry, Ingredion) competes for acquisition; premium paid for regulatory moat plus production IP. |

6.4 Risk Assessment

| Risk Factor | Rating | Detail |
|-------------|--------|--|
| Regulatory | LOW | Regulatory risk has been substantially de-risked. GRAS (US, 2021), |

| | | |
|--|-------------|--|
| | | Singapore (2024), and EFSA positive opinion (December 2025) are confirmed. The EU Commission authorization is the remaining step; given the EFSA green light, this is procedural, not scientific. UK ACNFP is the only active regulatory uncertainty. |
| Technology / Scale-up | MEDIUM | Demo plant at 500-600 MT/year is operational and de-risks the core process. Expansion to 2,500 MT/year is in progress at the existing site. The industrial transition from 2,500 MT to 10,000+ MT/year is unproven and represents the next material technical risk. Non-sterile process mitigates CapEx risk compared to competitors. |
| Market / Commercial | MEDIUM-HIGH | Revenue is not yet established at meaningful scale. EU market launch is still ahead. B2B market acceptance of mycoprotein for food ingredient applications at scale is not yet fully validated. LBB Specialties is a distribution channel, not a confirmed revenue commitment. |
| Key Person | MEDIUM | Wim de Laat's deep technical knowledge remains the primary key-person risk. The IP is patent-protected and the strain is characterized, but process optimization knowledge is partly tacit. Thijs Bosch (CEO, 10 months in position) is unproven within this organization. Two CEO transitions in 6 years is a yellow flag. |
| Competition | LOW-MEDIUM | TPB's non-sterile Rhizomucor platform is not directly replicable in the short term. Mycorena's bankruptcy removes the closest comparable IP position. ENOUGH/Abunda operates at larger scale but with a less capital-efficient process. Primary risk is if Roquette internalizes Fermotein's technology rather than supporting an independent TPB. |
| Investor Alignment / Acquisition Feasibility | HIGH | Roquette Ventures is a strategic investor with likely ROFR or blocking rights — the single highest acquisition risk. Invest-NL and BOM carry government mandates that add governance conditions to any acquisition structure. Novo Holdings' institutional position and high valuation expectations make below-market entry difficult. |

SPECTRUM Execution Plan

BUY Phase (Months 1–6)

Priority DD action #1 (gating item): Assess Roquette Ventures' shareholder rights in the TPB SHA and AoA. Determine whether ROFR provisions exist, their scope, and whether Roquette's strategic intent has shifted from investor to acquirer. This is the single question that determines whether the SPECTRUM acquisition path is open. If Roquette holds an unencumbered ROFR, the acquisition structure must be re-designed (e.g., co-acquisition with Roquette, or a minority stake with path to majority).

Priority DD action #2: Full data room request covering: complete IP filings and patent status (strain CBS 143028 and process patents across all jurisdictions); cap table with all shareholder rights, anti-dilution provisions, and board representation entitlements; Invest-NL and BOM SHA provisions and employment/regional covenants; technology readiness documentation including fermentation process documentation, process control parameters, scale-up assumptions for 2,500 MT build; and CFO-level financial model with burn rate, capex roadmap, and revenue projections.

Priority DD action #3: Management interviews with Thijs Bosch (strategic alignment and commercial plan), Wim de Laat (technical roadmap and IP transfer comfort), and the regulatory lead (EC authorization timeline and UK ACNFP progress).

Priority DD action #4: Initiate confidential outreach via SPECTRUM Group Chairman. Frame as strategic partnership exploration, not acquisition approach, to avoid triggering ROFR and alarming the Roquette position prematurely. Target an initial meeting with Thijs Bosch and Bente Korsgaard Andersen.

Priority DD action #5: Commission independent techno-economic analysis of the Mijkenbroek process and the 2,500 MT expansion plan to validate TPB's CapEx efficiency claims vs. Fusarium-based competitors.

TRIM Phase (Months 3–18)

Operational focus: complete the Mijkenbroek expansion to 2,500 MT/year while launching commercial operations in the EU (Q3 2026 authorization target), US, and Singapore simultaneously. The TRIM phase must not trade engineering execution speed for commercial acceleration. EU customer activation should be managed through SPECTRUM's commercial team; TPB's internal team must remain focused on production scale-up and quality systems.

Overhead consolidation: transfer finance, HR, legal, and non-regulatory compliance to SPECTRUM shared services within months 1-6. Regulatory function must be ringfenced: EU Commission authorization monitoring, UK ACNFP submission, and future market entry filings are all live and must not be disrupted by organizational change.

Team retention: retain Wim de Laat (co-owner) via equity rolling arrangement and technical consultant agreement. Thijs Bosch retention package to be aligned with TRIM-phase commercial milestones. A commercially-focused operations director should be hired within the first 6 months to manage the production expansion while Bosch leads the customer development program.

S&OP cadence: weekly commercial S&OP between SPECTRUM sales team and TPB operations from Day 1.

Fermotein briefing to SPECTRUM's existing B2B food manufacturer relationships within 30 days of acquisition close.

Proof points for GO list: (1) 2,500 MT/year expansion operational by Q4 2027; (2) EU first customer revenue by December 2026; (3) US revenue run-rate confirmed; (4) full production cost per ton at 2,500 MT validated against pre-acquisition model; (5) UK ACNFP authorization filed and on timeline.

PREPARE Phase (Months 12–30)

GO list KPI completion review at Month 18 and Month 24. SPECTRUM board PREPARE-phase presentation by Month 24. Key milestones required for handover: EU revenue run-rate of Est. €10-15M (annualized, from 2,500 MT capacity with confirmed customer contracts); US revenue growing; 2,500 MT expansion operational and cost-per-ton validated; IP fully transferred to SPECTRUM holding entity; key person retention confirmed for both de Laat and Bosch; regulatory status clean across all four markets.

People and culture: TPB is a Dutch food-biotech with a scientific culture shaped by Wim de Laat. SPECTRUM must assess cultural alignment carefully. Dutch biotech teams are collaborative, process-disciplined, and often consensus-oriented. The TRIM phase will require a mandate-based (not committee-based) operating model. This cultural translation must be managed proactively.

In the event of a NO decision at handover: the most natural disposition pathway is a structured sale to Roquette, DSM-Firmenich, or Kerry Group. A public listing is unlikely at this revenue scale.

Overall Candidate Assessment

| Assessment Dimension | Rating | Commentary |
|-------------------------------|-------------|--|
| Technology & IP Defensibility | ★★★★★ (5/5) | Proprietary <i>R. pusillus</i> CBS 143028 strain selected over 8-year program. Strain and process both patent-protected. Non-sterile, low-pH, high-temperature fermentation provides a structural and durable CapEx advantage. EFSA dossier approval constitutes regulatory-grade IP validation. Barrier to replication is 8-10 years of equivalent development. |
| Regulatory Progress | ★★★★★ (5/5) | US GRAS self-affirmed (2021); Singapore Novel Food approved (2024); EFSA positive scientific opinion (December 2025) — first novel fungal biomass to achieve this. EC authorization procedurally in progress with Q3 2026 target. UK ACNFP submission in progress. Near-complete global regulatory clearance across all four priority |

| | | |
|--------------------------|-------------|---|
| | | markets. |
| Commercial Traction | ★★☆☆☆ (2/5) | Revenue not publicly disclosed. No named B2B customer contracts confirmed. US distribution agreement (LBB Specialties, Oct 2024) is a channel partnership, not a confirmed revenue commitment. Singapore and EU launches are 2026 events. Production at 500-600 MT/year demo scale is commercially limiting. |
| Team Quality & Stability | ★★★☆☆ (3/5) | Thijs Bosch (CEO, since June 2025) brings the right B2B food ingredient commercial profile. Wim de Laat's continued active involvement provides scientific continuity. Two CEO transitions in 6 years is a yellow flag. CFO, CCO, and regulatory director not publicly identified. |
| Capex Efficiency | ★★★★☆ (4/5) | ~€52M deployed to achieve: proprietary strain selection and characterization; 500-600 MT/year demo plant operational; patent portfolio secured; regulatory clearance across three jurisdictions. Non-sterile process provides Est. 2x CapEx advantage per ton versus Fusarium competitors. Expansion to 2,500 MT/year (Series B funded, same site) is low-risk. |
| SPECTRUM Strategic Fit | ★★★★☆ (4/5) | Roadmap A (B2B ingredients manufacturing) — direct fit with SPECTRUM's mothership model. Fermotein fills the fungal protein node absent from the alternative protein portfolio. EU-based, food-grade, B2B-oriented, Netherlands operational base compatible with SPECTRUM's regional infrastructure. |
| Acquisition Feasibility | ★★☆☆☆ (2/5) | Roquette Ventures' ROFR position is the primary acquisition risk and the gating question for the entire process. Novo Holdings' institutional position sets a high valuation floor. Invest-NL and BOM carry government development mandates adding non-commercial conditions. SPECTRUM target entry Est. €70-100M requires negotiated discount or structured earn-in. |
| OVERALL | 3.6 / 5 | MONITOR — Tier 2, with priority escalation recommended within 6 months |

Recommendation & Next Steps

Recommendation: MONITOR — Tier 2, with priority escalation to detailed DD within 6 months

The 3.6 overall score reflects a company with exceptional technology, regulatory, and strategic fit credentials constrained by early-stage commercial traction and a complex cap table. The recommendation is MONITOR rather than PROCEED primarily because the Roquette ROFR position has not been assessed. If Roquette does not hold a blocking ROFR, the recommendation should escalate immediately to PROCEED TO DETAILED DUE DILIGENCE.

The acquisition window is time-sensitive. EU commercial revenue will materialize in Q3 2026 onward. Once revenue validates the investment case, TPB's valuation will increase substantially and SPECTRUM's negotiating leverage will decrease. The current moment — post-EFSA opinion, pre-EC authorization, pre-EU revenue — is the optimal entry window.

1. SPECTRUM Group Chairman initiates confidential outreach to Thijs Bosch (CEO) and Bente Korsgaard Andersen (Board Chair), framed as strategic partnership exploration
2. Priority DD item #1: independent legal assessment of SHA, AoA, and all investor agreements to determine scope of Roquette Ventures' shareholder rights and ROFR provisions (target completion: within 4 weeks of first management meeting)
3. Request data room access: IP filings (all patent applications and grants, all jurisdictions), cap table with all rights, SHA, investor agreements, production economics (cost per ton at current and projected scale), CFO financial model, customer pipeline and revenue projections
4. Commission independent techno-economic analysis of Mijkenbroek process and 2,500 MT/year expansion plan
5. Prepare retention packages for Wim de Laat (co-owner, scientific director) and Thijs Bosch (CEO); assess CFO and regulatory leadership as priority retention targets once internal structure is confirmed
6. Present Roquette ROFR assessment and updated acquisition scenario to SPECTRUM board by October 2026

7. If Roquette ROFR is absent or waivable: present full acquisition proposal to SPECTRUM board by December 2026 with target close before EU commercial revenues crystallize

NOTE: All valuation estimates, pricing data, and financial projections in this memo are based on public information and analyst assumptions. Full due diligence with access to company financials is required before any investment decision. This document is prepared by SPECTRUM for SPECTRUM Group board use only and is strictly confidential.