

Bound Rye

The Sandoz Ergot Contract as a Disposal Regime Preceding the Law of Living Organisms

Identifier: FORSCH-PROV0463 (provisional) · **Slug:** roggenvertrag-verfuegung · **Version:** v1.0 · **Date:** 2026-10-14 **Author:** Thomas Schüller, Syntagma Forschung, Vienna · ORCID 0009-0003-9799-6747 **Licence:** CC BY 4.0 **Cross-references:** INSTANCE of FORSCH-0083 (ρ/δ master theorem) · isPartOf FORSCH-0331 (albert-hofmann-fachbuch)

Abstract

For Sandoz AG, ergot was not a gathered commodity but a cultivated crop. The company maintained its own rye breeding programme and inoculated the ears deliberately. Farmers who supplied the raw material obtained the rye from the company estate and were permitted to use it exclusively for ergot cultivation for Sandoz.

This construction arose at a time when patents on living organisms did not exist. It nevertheless produces their effect: binding of the seed to a purpose of use, retention of the biological resource at the company's disposal, transfer of risk to the growing farm, value creation downstream. This paper reads the construction as an instance of the asymmetry between risk-bearing (ρ) and power of disposal (δ) per FORSCH-0083, and shows that the same structure continues along the entire chain up to the branded preparation.

Reservation: the contract text itself has not been inspected. The account rests on the history-of-medicine work on the Hofmann papers. The wording is to be verified in the Bern holdings or the Basel company archive. [V]

1. The Facts

Industrial use of ergot presupposes that there is enough of it. Natural infection of rye by *Claviceps purpurea* varies by year and is too unreliable for production with a constant alkaloid yield. Sandoz solved the problem by cultivation: its own rye breeding, deliberate inoculation of the ears, contractually bound producers. [G]

The binding took a notable form. The rye came from the company's estate, and farmers were permitted to use it exclusively for ergot cultivation for Sandoz. [G] That is: the object of the contract was not the raw material alone but the seed and its permitted use.

2. The Legal Position of the Time

Patents on living organisms did not exist. Plant variety protection as a legal institution of its own arose only after the Second World War; international harmonisation followed later still.

Patentability of biological material in today's sense is a product of the second half of the century.

The company nevertheless achieved the result — through the law of obligations. A use restriction in a supply contract delivers what a protective right would deliver, so long as the contracting party depends on the supply and the offtake is assured. The position is effectively monopoly-like without being founded in monopoly law.

Here lies the analytically interesting point: **the disposal regime precedes the legal institution.** Law did not create the disposal; the disposal existed and was formalised in law later. An account of property rights in biological material told through the history of patents begins too late.

3. The Structure as a p/δ Instance

Element	Growing farm	Sandoz
Weather and harvest risk	bears	—
Labour input	bears	—
Investment in land and equipment	bears	—
Seed	obtains, bound	supplies, controls
Breeding material and inoculum strain	no access	disposes
Decision on use	bound	determines
Price formation	dependent	largely determines
Refinement, extraction	excluded	disposes
Product rights, trade mark	no share	disposes
Downstream returns	no share	disposes

The asymmetry is complete: the risk-bearer has disposal at no point; the holder of disposal bears no agricultural risk. This is the basic form described by FORSCH-0083.

Two qualifications belong here. First, the construction was not necessarily disadvantageous for the farm: assured offtake at calculable prices is a value in agriculture. The asymmetry describes the distribution of risk and disposal, not automatically a disadvantage. Second, the binding was not concealed; it was the content of the contract. The analytical object is the structure, not an accusation.

4. What the Legal Institution Later Adds

Comparison with present-day constructions shows what formalisation changes — and what it does not.

Feature	Contractual binding (Sandoz, 1930s–)	Variety protection / patent (from mid-century)
Effect against the contracting party	yes	yes
Effect against third parties	no	yes
Enforceability on onward transfer	weak	strong
Term	contract term	statutory protection period
Disclosure obligation	none	yes (patent)
Exemptions for farmers	none provided	partly provided (farmer's privilege)

Formalisation extends the effect to third parties and makes it enforceable — but it does not create the structure. It codifies a practice that previously worked by contract.

5. Continuation of the Structure Along the Chain

The observation carries beyond the raw material. The same form recurs at every further station:

Delysid. Sandoz supplied LSD free of charge to researchers and clinics worldwide. [G] The supply is generous and changes nothing in the disposal position: manufacture, purity, indication frame and — in 1966 — withdrawal from the market lay with the company. Investigators and patients bore the risk; the manufacturer decided on continuation.

Mexican holdings. The Mazatec community held knowledge and practice and bore the social downstream costs of publication. Isolation, naming, synthesis and marketing took place elsewhere. No share in the returns was provided for, because no legal institution provided for one — the Nagoya constellation arises only decades later.

Self-experiment. Hofmann bore the bodily risk on a substance belonging to his employer. Disposal over publication, patent and marketing lay with Sandoz. Here the asymmetry falls on the employee.

Prohibition. From 1966/1971 disposal moves from the manufacturer to the legislature. Risk moves from investigators to an unregulated market. The asymmetry does not disappear; it changes bearers.

That the same form appears in four legally quite distinct constellations — supply contract, pharmaceutical distribution, appropriation of knowledge, criminal law — is the argument against an explanation via the respective legal form and in favour of a structural one.

6. Objections and Limits

Objection 1: the contract text has not been inspected. Correct. The account rests on the secondary presentation from the archival research. The reach and term of the binding, the

pricing arrangement and any exemptions are unknown. [O] Pending inspection the thesis stands as [W].

Objection 2: contractual use restrictions are widespread in agriculture. Correct, and this supports the thesis rather than weakening it: if the form is widespread, it is structural and not specific to Sandoz. The case is then a well-documented representative of a class.

Objection 3: retrojection of present-day categories. To be taken seriously. “Disposal regime” is not a category of the period. The paper does not claim that the participants thought in these terms; it claims that the arrangement had this effect. The distinction between self-description and structural description must be maintained.

Objection 4: the participants profited. Possibly. The ρ/δ analysis is not a welfare calculation. It asks who bears the consequences of deviation from the expected value and who decides on continuation.

7. Follow-On Questions

#	Question	Access
Q1	Wording, term, termination provisions of the contract	Bern papers; Basel company archive [V]
Q2	Number and location of bound farms, areas, quantities	Basel company archive
Q3	Comparable constructions by other pharmaceutical firms of the period	sector comparison outstanding
Q4	Transition from contractual to protective-right solution at Sandoz/Novartis	legal and business history
Q5	Transferability to present-day supply chains for biological raw materials	link to FORSCH-0083

Q3 and Q5 carry the extension: Q3 tests whether the case is typical; Q5 carries the structure into the present.

Maturity of this version

v1.0 means: complete in substance, readable on its own, references given, reservations named. It does not mean every reservation is resolved. What remains open is in section 7 and, as far as the quality of references goes, in Appendix W section 2 of the parent work FORSCH-0331.

Sources

Full details in the source register of the parent work FORSCH-0331, sections A and G. Core references:

- Albert Hofmann papers, Institute of the History of Medicine, University of Bern (transferred 2013, accessible since 2014).
 - Novartis AG company archive, Sandoz AG holdings, Basel, St. Johann site.
 - Bächli B.: SNSF project “Vom Mutterkorn zu LSD. Zur Stofflichkeit von lokalem und globalem Wissen in der landwirtschaftlichen, industriellen und wissenschaftlichen Produktion psychotroper Stoffe”, Institute of the History of Medicine, University of Bern, 2015–2019.
 - Bächli B. (2023): Psychotropic Drugs from and in the Fields. Rural Roots and Collective Effects of LSD. In: Dyck E., Elcock C. (eds): *Expanding Mindscapes. A Global History of Psychedelics*. MIT Press, 215–237. DOI 10.7551/mitpress/14417.001.0001.
 - Hofmann A. (1964): *Die Mutterkornalkaloide*. Reissue, Nachtschatten.
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