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**Book, Asymbiotic Technique of
Orchid Seed Germination**

About the Book:

Asymbiotic Technique of Orchid Seed Germination is the most comprehensive text to date on the subject of growing orchids from seed.

Designed to accommodate everyone from the novice to those working in established orchid labs, Orchid Seed Germination provides valuable information on all phases of growing orchids from seed. From disinfection to deflasking, this manual provides references, in-depth information, and the very latest on the seed propagation of orchids.

The author is the director of the Orchid Seedbank Project, a research and conservation effort to help propagate and conserve orchids.

Contents:

Chapter 1: The orchid seed: Germination

Orchid mycorrhiza

Chapter 2: A brief history of orchids from seed

History

Chapter 3: The basics

Orchid seed production (green capsule, pollination, pollination of miniature flowers, pollination of vanilla, pollen storage, pollen viability)

Orchid seed harvesting

Orchid seed storage (humidity, hydrates, relative humidity, measuring humidity, constant humidity solutions, longevity, short-lived seed, rehydration)

Handling and shipping of orchid seed (static controls, laws)

PhytoTechnology Laboratories®

P.O. Box 12205; Shawnee Mission, KS 66282-2205

Phone: 1-888-749-8682 or 1-913-341-5343; Fax: 1-888-449-8682 or 1-913-341-5442

Web Site: www.phytotechlab.com

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Product Information Sheet

Lab basics (chemical safety, glassware, lab equipment, pH, buffers, suitable pH for germination of orchid seed)

Media, sterilization, and bacteriology 101 (chemical sterilization, thermal sterilization, filtration sterilization, denaturation, UV light sterilization, radiation sterilization, microwaves, introductory microbiology)

Preparation of the media (types of media, fertilizer-based media, improvised media, formulae for expedient orchid seed germination, stock solutions, stock solution preparation, aseptic sowing area, flasks)

Chapter 4: Technique

Preparation of the sowing area (glass sheet technique, glove boxes, laminar flow hoods, hands, bleach vs. alcohol)

Disinfection of seed (batch washing, filtration, dropwise, decanting, rapidfire, chlorine gas sterilization, floating seed, disinfection times, vacuum treatment, documentation)

Green capsule technique (technique)

Variations on a theme (use of steam during flasking, techniques for introducing seed, OSP technique, small-volume flasks, sterile area alternatives, lid seals, miscellaneous)

Chapter 5: Post-sowing

Dealing with contamination problems (aggressive efforts, source of contamination, treating plugs, sealing flasks, mites, vacuum treatment)

Care of the sown flasks (dry flasks, root growth, disposal of flasks and conditioning)

Replate

Deflasking and seedling care

Chapter 6: Advanced techniques

Media modifications (charcoal, water, iron, sugars, vitamins, nitrogen, inositol, amino-acid based media (entire section for cyps!), making your own media, fruit juices and other extracts, anticontaminants in media, nutrient deficiencies)

Specific genera (terrestrial orchids)

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Making your own glove box

Manufacturing baffle ports for a glove box

New directions in seed disinfection (thermal, gas, peroxides, hypochlorites, duration of exposure with hypochlorites, Virkon S, DCCA, outdated techniques)

Practicing with inert compounds

Alternative gelling agents (PhytaGel, kappa carrageenan, membrane rafts, capillary media, super absorbent polymers)

Viability testing and seed analysis (microscopic examination, seed types, chemical staining, photomicrography, floating seed)

Appendix I:

Where to start (media, flasking area, seeds, sowing, easy starts)

Appendix II:

Improvised home flasking

Appendix III:

Sources, conversions, additional reading, trademarks, about the author, about the OSP, how it works)