

Biodynamics (BD)

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Dept. Plant Pathology

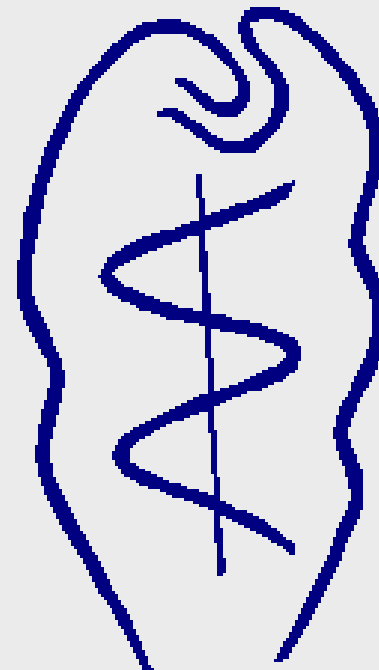
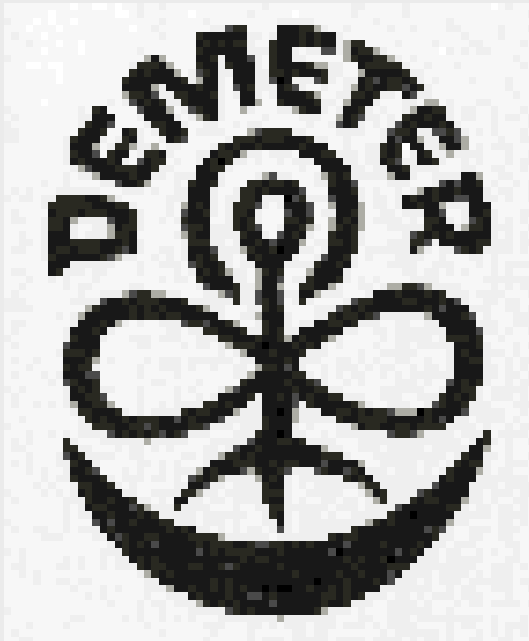
Washington State University

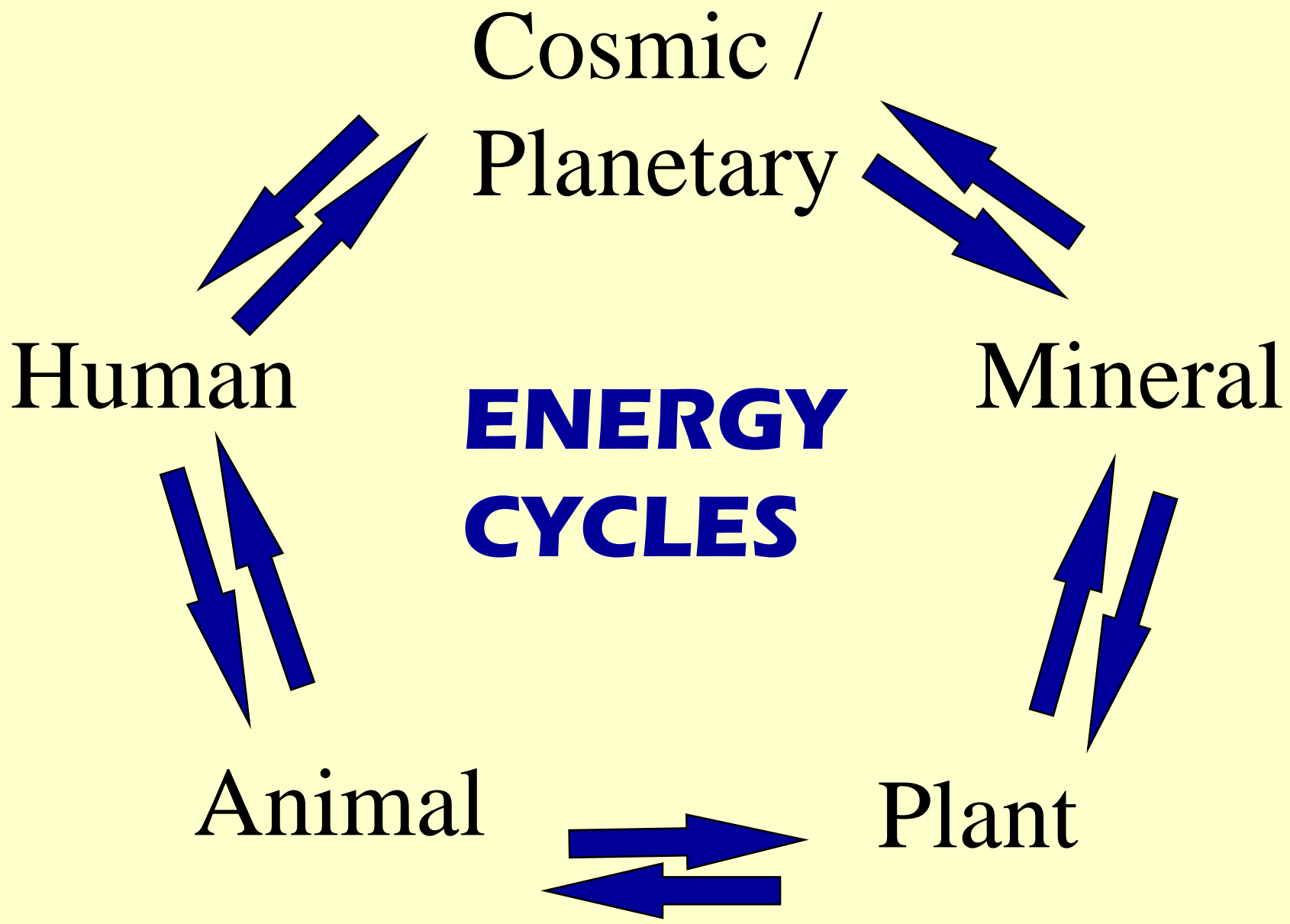
Biodynamics

- **Created by philosopher Rudolf Steiner**
also
 - **Anthroposophy**
 - **Anthroposophic art and medicine**
 - **Waldorf schools**
 - **Camphill communities**
 - **Eurythmy dance**



- **Demeter, Weleda brand certification**







**All elements
(nutritive and energetic)**

**MUST
be cycled**

**OR
they will be lost**



Soil organisms do not constitute the life of the soil; they are the actual organs of a living organism.

Sattler and Wistinghausen, 1992

Differences in Ideas: BD vs. conventional

- **View whole farm as an organism**
- **Heal the soil, people, plants, earth**
- **Astronomic, cosmic effects**

- **Organic + subtle forces**

Differences in Practice: BD vs. conventional

- **Organic vs. mineral management**
 - **compost is primary fertilizer**
 - **rotations for N fixation, weed control**
 - **recycling nutrients**
- **Natural and homeopathic pest control**
- **Livestock integrated in most farms**
- **Field activities by astrological calendar**
- **Biodynamic Preparations**

BD Preparations

fermented products of:

- **Field, Crop Sprays**
 - Cow manure
 - Silica
 - Equisetum
- **Compost preps**
 - Yarrow
 - Chamomile
 - Stinging nettle
 - Oak bark
 - Dandelion
 - Valerian

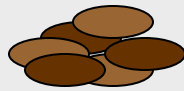
Preparation 500 Cow Horn Preparation



Preparation 500

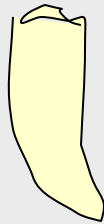
AUTUMN

MANURE
(plant, animal)



packed in

HORN
(animal, cosmic)

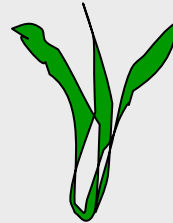


buried in

SOIL
(mineral, cosmic)

over
WINTER

FIELD
(plant, mineral,
human, animal)



SPRING

sprayed on

WATER
(cosmic,
human)



stirred in

SOIL

dug from

Soil Effects

- **Soil quality and microbiology benefit from Biodynamic management**
- **Great benefit from compost**
- **BD preparations did not enhance biodiversity in substrate utilization**
- **Differences in overall microbial activity and community structure**

Compost Effects

- **Slightly higher temperature**
- **Final compost product**
 - **Lower respiration rate**
 - **More enzymatic activity**
 - **Different microbial community**
 - **More nitrate**

Soil Effects

- **Biodynamic farms have better soil quality than conventional farms**
 - **more organic matter**
 - **more available N, P**
 - **buffered pH**
 - **more microbes, mesofauna and earthworms**
 - **biomass and activity**
 - **better soil structure**

Potential modes of operation (Western)

- **Mineral micronutrients**
- **Microbial inoculants**
- **Stimulants / Inhibitors /
Hormones / Signals**

