HOMEOPATHIC THERAPY IN AGRICULTURE

BIBLIOMETRIC ANALYSIS OF SCIENTIFIC PUBLICATIONS APPLIED TO PLANTS

AGRO-HOMEOPATHY: SUMMARY OF 76 EXPERIMENTAL STUDIES (1994–2023)

POTENTIAL, HYPOTHETICAL MECHANISMS, AND METHODOLOGICAL CHALLENGES

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INTRODUCTION (CONTEXT)

- **Problem Statement** :
  - Conventional agriculture: Pesticides = health/environmental risks.
  - Objective of agro-homeopathy: Ecological alternative based on the principle of similarity.
- **Origin** : Dr. VD Kaviraj (1986), first success with Belladonna on apple.

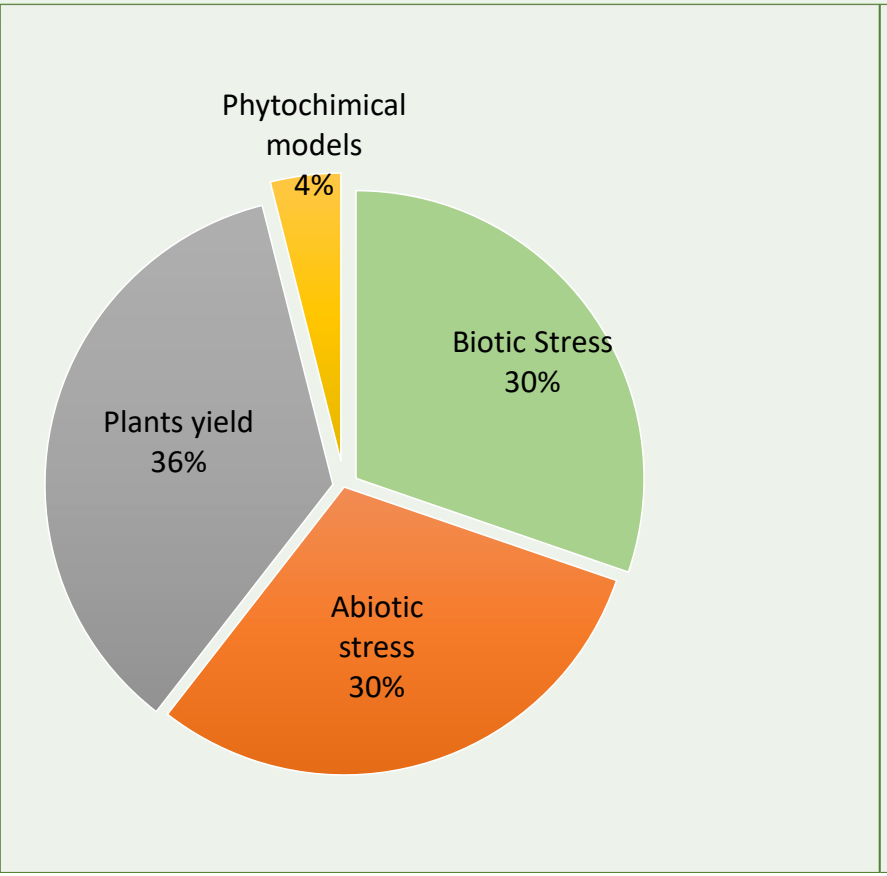
REVIEW METHODOLOGY

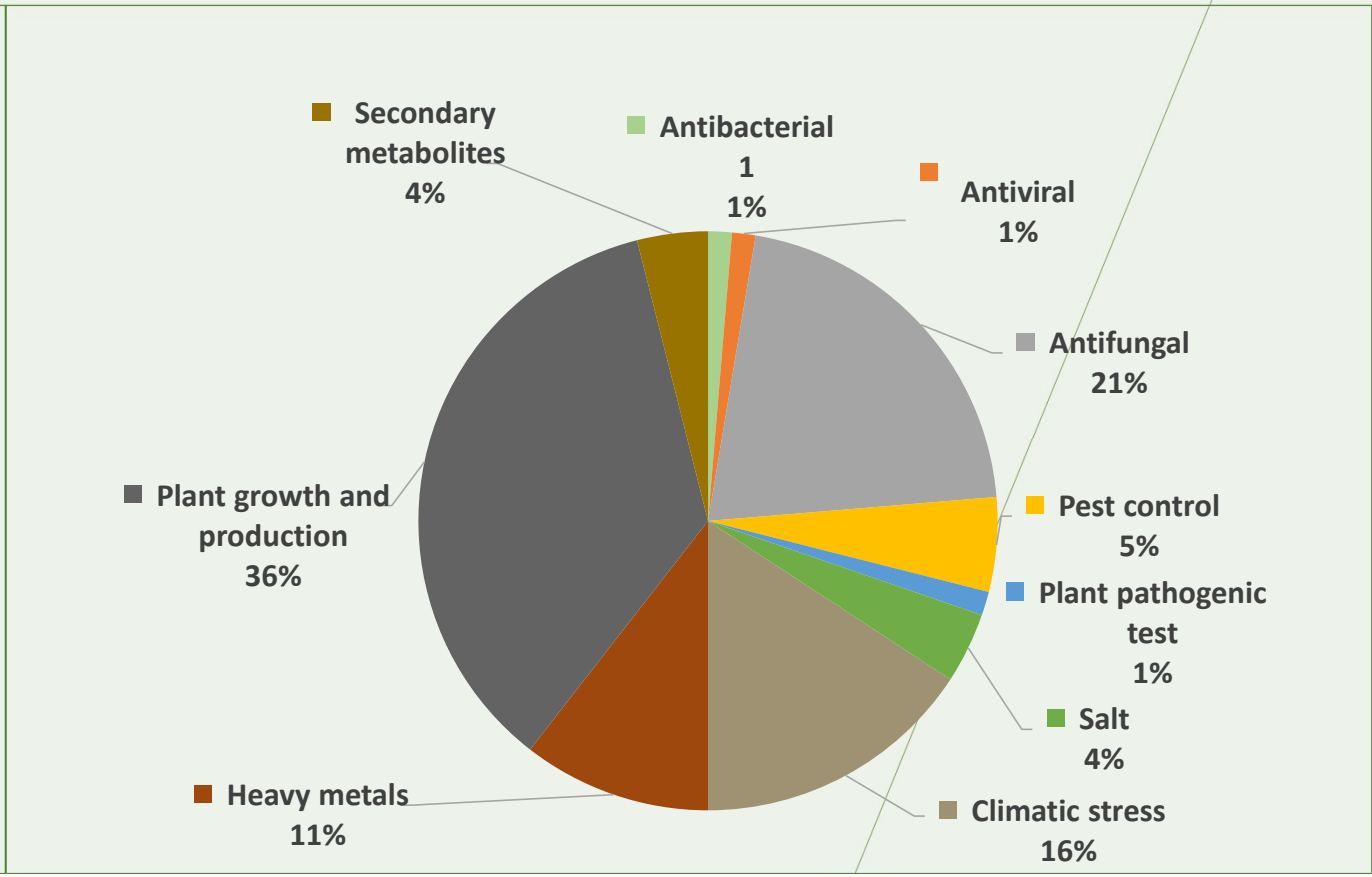
- **Inclusion criteria** :
  - 76 experimental studies (in vitro, in vivo and field trials).
  - Period: 1994–2023.
  - Language: English, Spanish and Portuguese.
- **Exclusions** :
  - Reviews, duplicates, and uncontrolled studies.

KEY RESULTS (OVERVIEW)

Success rate : 89% of studies report positive effects.

Distribution by Category





EFFICACY AGAINST FUNGAL PATHOGENS

Alternaria solani (tomato): Arsenicum album 80cH → 62% inhibition (95% CI: 55–70%).

Sclerotinia sclerotiorum (bean): Phosphorus 12cH → 83% reduction ($p < 0.001$).

PEST AND NEMATODE CONTROL

Key data:

- **Meloidogyne incognita (tomato):** Thuja occidentalis 100cH → 70% reduction in gall formation.
- **Aphids (apple tree):** Cina 200cH → 40% larval mortality.

RESULTS ON ABIOTIC STRESS

- **Salinity** : Natrum muriaticum 7cH → +35% biomass under NaCl 75 mM.
- **Heavy metals** : Nux vomica 12cH → 30% reduction in Cd absorption.

HYPOTHETICAL MECHANISMS OF ACTION

Hypotheses:

1. Modulation of defense pathways (e.g., increase in PAL).
2. Redox signaling (activation of SOD, CAT).
3. Epigenetic effects (regulation of OsWRKY45 under As_2O_3 45x).

METHODOLOGICAL LIMITATIONS

Common Issues Identified:

- Lack of standardization in dilutions/succussions.
- Publication bias (5 negative studies not detailed).
- Absence of ethanol controls in 15% of studies.

DETAILED CASE STUDY

Example : *Sulphur 6CH* against Wheat Powdery Mildew.

Protocol: 3 sprays on D0, D7, D14.

Results: 70% Symptom reduction vs. control ($p < 0.01$).

PRACTICAL RECOMMENDATIONS

For practitioners:

1. Target dilutions: 6cH–30cH for pathogens.
2. Application: Seed soaking > foliar spray.
3. Combinations: Sulphur + Arsenicum album for a synergistic action.

FUTURE RESEARCH

Priorities:

1. Molecular mechanisms (nanoparticles, metabolomics).
2. Multi-site tests under real conditions.
3. Collaboration with organic farming.

IMPLICATIONS FOR HOMEOPATHY

Links with clinical practice :

Common principles: Law of similars, dynamization.

Differences: Targets (plants vs. humans), secondary metabolism.

CONCLUSION

Summary:

Strong evidence supports the effectiveness of agro-homeopathy against pathogens and abiotic stressors.

Standardization and interdisciplinary research are crucial for further progress.

Key Message:

Agro-homeopathy : a valuable ally for sustainable agroecological transition.