

PRODUCTION OF PHYTOALEXINS

- ✓ Production of phytoalexins may be stimulated by certain compounds called elicitors.
- ✓ High molecular weight substances found in the cell wall such as glucans, glycoprotein, or other polysaccharides
- ✓ Gases such as ethylene (C_2H_4)
- ✓ In susceptible plants, a pathogen may prevent the formation of phytoalexins, by the action of suppressors produced by the pathogen
- ✓ The suppressor also can be a glucan, a glycoprotein, or a toxin produced by the pathogen

Induced biochemical defenses

- ✓ Hypersensitive reactions (phytoalexins, antimicrobials (important with obligate parasites – rusts, leaf spots, active oxygen radicals disrupt cell membranes, reinforcement of host cell walls)
- ✓ Antimicrobials – phytoalexins, phenolics
- ✓ Immunization
- ✓ Local and systemic acquired resistance

Phytoalexins

(Phyto = “plant” and alexin = “to ward off/”)

Low molecular mass antimicrobial metabolites synthesized de novo from primary metabolites in response to infection

1. Structurally diverse group of metabolites with the isoflavonoids can be an example
2. The isoflavonoids phytoalexins are synthesized from the flavonoids branch of the phenylpropanoid pathways