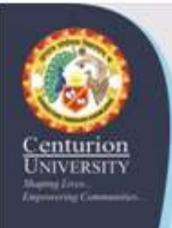


# 6. Bio-herbicides with their Application in Agriculture



### 6.1 Definition, concept and application of bio-herbicide

A **bioherbicide** is a biologically based control agent for weeds. Bioherbicides may be compounds derived from microbes such as fungi, bacteria, viruses, or protozoa; or phytotoxic plant residues, extracts or single compounds derived from other plant species.



#### **6.2 History of bioherbicides**

In the 1950s the Russians mass-produced the spores of Alternaria cuscutacidae and applied them to the parasitic weed dodder (Cuscata spp.). In 1963 the Chinese mass-produced a different fungus (Colletotrichum gloeosporioides f. sp. cuscutae) for the same weed. They called their mycoherbicide 'LuBao' and an improved formulation is still in use today.



### 6.3 Benefits of bioherbicides over other herbicides

Because the plant pathogens used in bioherbicides usually occur naturally in the areas where they are utilized, they tend to be less harmful to the environment than chemical herbicides. The fungi are often more selective in their mode of action so the risk of damage to other plants is reduced. Bioherbicides are, as a rule, less toxic to people and animals than chemical herbicides.



## 6.5 Some Commercial Mycoherbicides in Use Abroad

Product	Content	Weed controlled
De-Vine	A liquid suspension of fungal spores of <i>Phytophthora palmivora</i> It causes root rot in the weed.	Strangler-vine. ( <i>Morrentia odorata</i> ) in citrus orchards.
Collego	Wettable powder containing fungal spores of <i>Colletotrichum</i> gloesporiodes Sub sp. aeschynomone	Jointvetch (Aeschynomone sp). In rice fields. The bioherbicide causes stem and leaf blight in the weed.
Bipolaris	A suspension of fungal spores of Bipolaris sorghicola.	Johnsongrass (Sorghum halepense)
Biolophos	A microbial toxin produced as fermentation product of Streptomyces hygroscopicus.	Non-specific, general vegetation.
Luboa-2	Colletotrichum gloesporiodes spp.Cuscuta	Cuscuta