

Weeds and upland rice, what are the constraints ?

An initial diagnosis



Weed infestation in upland rice paddies in Northern Vietnam (Ban Cuon village, Cho Don district in the Bac Kan province) is one of the main problems posed to the sustainability of the cropping system. Traditional cropping practises (slash-and-burn) do not suit new socio-economic and environmental conditions. In the present situation of change to alternative land use systems, it appears important to determine weed flora composition and behavior in order to propose new weed management strategies.

Stevoux Véronique (CIRAD- ENSAM)
Le Bourgeois Thomas (CIRAD)
Husson Olivier (CIRAD)
Ha Dinh Tuan (VASI)

Weed control: a major issue

- ▶ **Shorter fallow periods:** higher weed infestation from the first year of cultivation
- ▶ **Priority for labor** on irriguated rice and corn, then late upland rice weeding: 2 months after sowing
- ▶ **56 %** of the total labor input
- ▶ **No herbicide use**, due to lack of funds and technical training
- ▶ **Hand weeding:** 100 days/person/ha



Yield losses
One of the main reason leading to abandoning fields after 3 or 4 years of cultivation

Relations species - environment

Broadleaf



Ageratum conyzoides

A phyto-ecological study was done on 21 fields in Ban Cuon village in 1999.

- ▶ Major weeds include broadleaf, grasses and species from the forest area (tree shoots, fern species).
- ▶ The season and the type of forest before slashing are some of the main factors which affect flora composition.
- ▶ The location seems to affect species distribution : the bottom of a hill has the most weeds.

Forest area



Lygodium flexuosum



Trema angustifolia



Melastoma sp.

Grasses



Crassocephalum crepidioides



Paspalum conjugatum



Eleusine indicandica



Imperata cylindrica

Ecological characteristics:

Most of the species found in upland rice paddies have ecological features which can explain how they became noxious weeds:

- ▶ many life cycles during the cropping period (*Ageratum conyzoides*),
- ▶ to produce a large amount of seeds (*Borreria alata*),
- ▶ inefficient traditional weed management (*Imperata cylindrica*).

