How to weed properly

Manual weeding

Manual weeding is an effective way to kill woody weeds. When weeding manually, no herbicides are used, so it is good for the other weeds and for the environment. However, manual weeding is labour-intensive, especially if the weeds have not been managed properly before.

Figure 1: This plantation needs to be weeded!

Woody weeds and other noxious weeds can be removed manually as follows:

| Step 1. | Pull out as many of the noxious and woody weeds as possible. Make sure that most of the roots are also pulled out; if the weeds just ‘break off’ above the ground they will usually come back very fast. |
| Step 2. | Cut the roots of the weeds that cannot be pulled out below ground level using a chisel or spade. Remove the weed and the roots from the ground. |
| Step 3. | Large bushes or trees should be dug out completely. |

Chemical weeding: herbaceous (i.e. non-woody) weeds

Herbaceous weeds can be removed using chemicals as follows:

| Step 1. | Identify the noxious weed species that need to be removed. Do not simply spray all the weeds; this is bad practice, the soil will be degraded, it is a waste of herbicide and it is bad for the environment. |
**Step 2.** Spray the noxious weeds with glyphosate or gramoxone:
- Select a nozzle with a narrow cone to prevent spraying on soft weeds or the oil palms
- Spray the herbicide over the leaves of the weeds from above
- Remember that most herbicides work directly on the leaf and are not taken up through the roots. For the best result, try to get some herbicide on most of the leaves when spraying.
- The right amount of spraying is when the leaves are wet but the water is not dripping off (then, it is too much!).
- Do not spray all inter-row weeds but only the noxious ones

**Step 3.** If there are only a few *Imperata cylindrica* plants between the good weeds, they can be wiped with glyphosate solution instead of sprayed, using a sponge or piece of cloth.

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**Chemical weeding: woody weeds**

**All woody weeds are noxious weeds and should be removed from the plantation.** Woody weeds often cannot be killed with normal herbicides. If they keep coming back, try the following:

For small woody weeds (no thick stems):

**Step 1.** After reading the label and putting on all necessary protective clothing, prepare the following solution:
- 1% Triclopyr or a similar herbicide (= 100 mL per 10 L water)
- 5% diesel (= 500 mL per 10 L water)

Prepare the solution by first mixing the triclopyr in diesel and then mixing the diesel with water. Note that the diesel may degrade the rubber components of the sprayer, so these need to be checked for leaks regularly, and a spare set is useful.

Put a nozzle on the sprayer that produces a narrow conical spray.

**Step 2.** Spray the woody weeds with the herbicide solution. If the woody weeds are all through the plantation, expect to spray about 3 L of Triclopyr per hectare. Usually it will be less (0.5–1 L). Note that Triclopyr is poisonous to humans and animals; use it with care and remember to wear gloves and other protective clothing.

**Step 3.** Spray the remaining noxious weeds (e.g. alang-alang) with glyphosate. Use Triclopyr only for woody weeds, as it is quite expensive.

**Step 4.** After one month, repeat the spraying with Triclopyr on the young shoots of the woody weeds that are still alive.

For large woody weeds (thick stems):

**Option 1**

**Step 1.** For each woody weed, scratch off some of the bark with a knife (an area of a few square centimetres is enough).

**Step 2.** Wipe/brush the scratched surface with a solution of 5% Triclopyr herbicide in diesel (no water is added, for example: 50 mL Triclopyr in 1 L diesel).

**Step 3.** If any young shoots appear on the trunks that were treated, repeat the treatment for these trunks after one month.

**Option 2**
| **Step 1.** | Cut the stems close to the ground. Make sure that fresh cuts are made on all woody stems. |
| **Step 2.** | Apply a solution of 5% Triclopyr herbicide in diesel directly to the cut part of the stem (especially on the area just inside the bark). Make sure you apply the triclopyr **less than 4 hours after cutting.** |
| **Step 3.** | If any young shoots appear on the trunks that were treated, repeat the treatment for these trunks after one month. |