

Good agricultural practices

Integrating rice management practices for improved productivity



Introduction

Good agricultural practices (GAP) is an integrated set of recommended crop, soil, water and weed management practices that are proven to improve rice productivity and increase profitability. GAP in irrigated rice includes improved varieties, land preparation, crop establishment, irrigation, and weed and nutrient management methods, as well as improved crop protection and harvesting methods. In Rwanda, the selected GAP components are improved varieties (Buryohe and Yun yin4), use of 21-day-old seedlings, fertilizer and weed management for irrigated lowland rice farmers.

How to use GAP

The GAP components shown in this leaflet have been identified based on previous research findings in Rwanda. To introduce GAP components to farmers, on-farm trials/demonstration plots need to be jointly established by the extension officers and farmers. Extension officers provide training for farmers on how to practice the GAP components. Practice of GAP component technologies by the farmers should be closely monitored and evaluated by the extension officers in the first year. In the following years, with advice from extension officers, farmers practice the GAP component technologies on their own.

The GAP component technologies included in Rwanda are as follows:

- ▶ Use of improved rice varieties Buryohe and Yun yin4.
- ▶ Transplanting 21-day-old seedlings in the main field at 20 × 20 cm spacing.
- ▶ Application of fertilizers: Basal application of NPK 17–17–17 at 200 kg/ha; first top-dressing of urea (46% N) 50 kg/ha at tillering stage and second top-dressing of urea (46% N) 50 kg/ha at panicle initiation stage.
- ▶ Clean weeding before the first and second top-dressing of urea fertilizer.



Group training for farmers on GAP component technologies

Step 1: The variety Buryohe has 135 days duration to maturity including the nursery period with a yield potential of 6–7 t/ha and the variety Yun yin4 has a duration of 150 days with a yield potential of 8 t/ha. The certified seeds of these varieties can be obtained from Rwanda Agriculture Board (RAB) rice program certified seed-producing farmers/agents.

Step 2: Before sowing in the nursery bed, the certified seeds are soaked in fresh water for 24–48 hours and then treated with fungicides (e.g. Beam [Tricyclazole 78.2% + Kaolin 10% WP]) for 12 hours. Wet nursery beds of 10 × 1 m length with 0.3 m furrow in between the beds are prepared and the

treated seeds broadcast sown at a rate of 100–150 g/m². A nursery of 10 m² is enough to transplant seedlings to the 500 m² main field. Transplant 21-day-old seedlings at the rate of 2–3 seedlings per hill at a spacing of 20 × 20 cm in the main field.



Rice nursery

Step 3: Using the fertilizer rates proposed above, the application timings are as follows:

Buryohe: Basal at transplanting; first top-dressing at 36–40 days after sowing (DAS) for tillering stage and second top-dressing at 54–57 DAS for panicle initiation stage.

Yun yin4: Basal at transplanting; first top-dressing at 41–45 DAS; and second top-dressing at 63–67 DAS.

Keep the fields weed free and keep the soil moist or maintain a thin film of water (max. 2 cm) before application of fertilizers. Do not drain or add water for 2 days after each fertilizer application. After 2 days follow regular irrigation of the field.



Rice fields with different GAP practices

Step 4: Weeds are removed by manual hand weeding before the first and second top-dressing of fertilizers.

Additional information

By practicing the above-mentioned GAP component technologies in Rwanda, a yield gain of 1.5–3.3 t/ha can be achieved.

Contact information

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