

2,4-D salt amine with spot hand weeding

*An effective weed control technology
in rainfed lowland rice systems in Côte d'Ivoire*



Introduction

Weed control in rainfed lowland rice systems is a major challenge in West Africa, necessitating large farmer expenditure on herbicide or labor. In Côte d'Ivoire, the primary weed species in rice fields are a variety of grassy weeds and sedges. Herbicides are available in agrovets for suppressing weeds in rice; however, their efficacy and selection based on weed species are relatively limited or unknown. Several herbicides, hand weeding and motorized weeding activities were evaluated in Côte d'Ivoire. The combination of the post-emergence herbicide 2,4-D salt amine with spot hand weeding resulted in maximum weed control efficiency, labor productivity and grain yield. When compared to farmers' manual weeding procedures, 2,4-D salt amine plus spot hand weeding increased weed control efficiency by 15%, labor productivity by 17%, rice yield by 20% and economic benefit by US\$ 410/ha (30%). 2,4-D salt amine with spot hand weeding can be adopted by rainfed lowland rice farmers to control different types of weeds and increase rice yield and economic profitability. 2,4-D salt amine should be applied on a clear sunny day. During herbicide application, the farmers should follow safety guidelines. Soil must have sufficient moisture content at the time of herbicide application. If not, the fields should be irrigated before herbicide application for effective weed control.

How to use 2,4-D salt amine with spot hand weeding

Apply a 2,4-D salt amine, post-emergence herbicide from the 3–4 leaf stage of the rice plant and conduct spot hand weeding at 45–50 days after direct seeding or transplanting. 2,4-D salt amine is a selective killer of many broad-leaf weeds, grasses and sedges. It is formulated to protect most grassy lawns, turfs and various crop areas from unwanted weeds. It can also be used to control unwanted aquatic weeds and trees. 2,4-D salt amine contains 47.2% dimethylamine salt of 2,4-dichlorophenoxyacetic acid.

Step 1: Post-emergence herbicide application

- ▶ Apply 0.59–1.19 l of 2,4-D salt amine diluted in 74–99 l of water per hectare by knapsack sprayer when the weeds are in 3–4 leaf stage.
- ▶ Read and follow the safety checklist below each time before using 2,4-D salt amine.
- ▶ Always wear the specified protective clothing and equipment.
- ▶ Keep children and unauthorized people away from where 2,4-D salt amine or any other herbicides are being mixed, loaded, applied or stored.
- ▶ Keep your application equipment clean, calibrated and working properly.
- ▶ Mix pesticides outdoors.
- ▶ Measure materials correctly for recommended rate.
- ▶ Always apply 2,4-D salt amine or any other herbicides under appropriate weather conditions — and avoid drift.

- ▶ Carry an adequate quantity of clean water on or with your application equipment for use in washing eyes and skin in case of emergencies.
- ▶ Cover feed and water containers when applying around livestock or pet areas.
- ▶ Avoid contaminating fish ponds and water supplies.
- ▶ Multiple-rinse empty containers (at least three times) until clean before disposing of them with your household trash.
- ▶ Never leave 2,4-D salt amine or any other herbicides in a truck, field or operation site.
- ▶ Store 2,4-D salt amine or any other herbicides properly — in a correctly designed and maintained storage site, secured and only in the original container, tightly closed.
- ▶ After handling 2,4-D salt amine or any other herbicides, always wash thoroughly before you eat, drink, smoke or use the restroom.
- ▶ If 2,4-D salt amine or any other herbicides spill or splash on you or your clothing, immediately remove clothing, wash with soap and water, put on clean protective clothing and clean up the spilled material.

Step 2: Spot handing weeding

- ▶ Conduct a spot hand weeding at 45–50 days after seeding or transplanting.

Additional information

For more information on safe and correct use of herbicides, see:

www.youtube.com/watch?v=OA8N3ZxYIII

For more on safe disposal of containers, see:

<https://warren.ces.ncsu.edu/2016/07/how-do-i-dispose-of-an-empty-pesticide-container/>.

Contact information

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