A Practical Field Guide to

Weeds of Rice in Asia

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A Practical Field Guide to

Weeds of Rice in Asia

Second Edition

B.P. Caton, M. Mortimer,
J.E. Hill, and D.E. Johnson

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Mailing address: DAPO Box 7777, Metro Manila, Philippines
Phone: +63 (2) 580-5600, 845-0563, 844-3351 to 53
Fax: +63 (2) 580-5699, 891-1292, 845-0606
Email: irri@cgiar.org
Home page: www.irri.org
Riceweb: www.riceweb.org
Rice Knowledge Bank: www.knowledgebank.irri.org
Courier address: Suite 1009, Pacific Bank Building
6776 Ayala Avenue, Makati City, Philippines
Tel. (63-2) 891-1236, 891-1174, 891-1258, 891-1303

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Foreword

Weed infestations are a concern for every farmer. Depending on the type of rice production system, farmers across Asia often contend with the same or similar weed species. This group of species is relatively small, but of great importance, and includes many of the "world's worst weeds."

In this guide, we have tried to collect practical information about some of the most common weeds of rice in Asia. The guide contains information about the botany, ecology, herbicide resistance, and cultural control of these species in a short text that should be easy to use in the field. In addition, it includes pictures to aid in early and accurate species identification.

Our goal is to give farmers, extension agents, researchers, and others a practical in-field means of assessing weed control problems and, when possible, to provide strategies for improving integrated weed management in rice systems. We especially hope the guide will help farmers better understand the relationships among land preparation, rice establishment methods, and early-season water management practices that often strongly influence the particular weed species that infest their rice fields.

In this second edition, we have revised some of the text, added or changed more than 50 plates, and added reference to five additional species. We welcome comments from practitioners on how this can be improved in the future.

Robert Zeigler
Director General
International Rice Research Institute

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Terms and definitions

Apical (bud) dominance—growth of lateral buds is inhibited until the terminal bud stops growing
Ascending—curving upward
Creeping—a plant that often spreads horizontally using stolons or rhizomes
Erect—stems or branches growing vertically
Hypocotyl—the part of the stem below the first true leaf or leaves (seed leaf/cotyledons)
Inflorescence—a structure with flowers
Leaf blade—the extended portion of the leaf
Node—a place on the stem that may bear leaves
Propagule—a reproductive structure, for example, a seed or tuber
Rhizome—underground stem
Runner—a long, aboveground stem that roots at nodes to form new plants; longer than stolons
Sheath—basal part of leaf extending around stem
Stolon—a short, aboveground stem that roots at nodes to form new plants
Tuber—underground food-storing organ from which stems and roots may grow
Tufted—growing in clumps

Key to species listings

Scientific name: genus and species, family name.

Common name(s): Bayer code.

Found in: upland or lowland fields: upland = dryland, either occasionally or never flooded; lowland = wetland, often bunded and regularly flooded during rice season.

Establishment method: methods of rice establishment after which species may commonly occur. DS = dry-seeded, WS = wet-seeded, TP = transplanted. ">" indicates more than and ">>" much more than, e.g., DS > TP means that the species is likely to occur more in direct-seeded than in transplanted rice.

Growth habit: general appearance of growing plant.

Moisture: range of soil moisture, from dry to moist to wet (saturated) to flooded. The first listed is preferred.

Emergence time: approximate time of emergence, usually relative to rice germination rather than rice planting.

Competitiveness: potential of a species to reduce rice yields at high weed densities; low = 20% or less yield loss, moderate = 20% to 50% loss, high = greater than 50% loss, very high = up to 100% loss.

Seed contaminant: either reported or the possibility of contamination of rice seeds.

Cultural control: nonchemical methods that may help control a species.

Reported resistance (to herbicides): reported cases worldwide by herbicide type (weedscience.org, 2009). See country codes.

Life cycle: annual, lives for only one season; perennial, may live for two or more seasons.

Seed wt: measured or reported seed mass or weight (wt), in mg.

Method(s) of reproduction: main types of propagules produced by the species.

Flowering/maturity time: days till flowering begins or maturity is reached. All times are approximate.

Dormancy: whether propagules can germinate immediately after shedding or not. If so, seed banks are likely to be transient.

Flower: general description.

Elevation: maximum reported elevation.

Light: preference for radiation intensity.

Notes: other information that may be of interest.

Reported in: countries where the species has been found. Country codes: AUS = Australia, BAN = Bangladesh, BHU = Bhutan, BRA = Brazil, BOL = Bolivia, BUL = Bulgaria, CAM = Cambodia, CAN = Canada, CHN = China, COL = Colombia, COS = Costa Rica, CZE = Czech Republic, SLV = El Salvador, FRA = France, GRC = Greece, GTM = Guatemala, HND = Honduras, IDO = Indonesia, IND = India, IRN = Iran, ITA = Italy, JAP = Japan, KOR = Korea, LAO = Lao PDR, MAL = Malaysia, MYA = Myanmar, NEP = Nepal, NIC = Nicaragua, PAK = Pakistan, PAN = Panama, PHI = Philippines, POL = Poland, ESP = Spain, SRI = Sri Lanka, THA = Thailand, USA = United States of America, VEN = Venezuela, VIE = Vietnam.

Note: The absence of a listing indicates that no information was found.

***Aeschynomene aspera* L.** Fabaceae

SOLA PITH PLANT, AESAS, dicot

Found in: lowland rice
Establishment method: DS > WS
Growth habit: ascending or erect, much-branched; up to 2 m
Moisture: aquatic, wet to moist
Competitiveness: unreported
Seed contaminant: unknown
Cultural control: tillage, split applications of fertilizer
Reported resistance: none

Life cycle: perennial **Seed wt:** 36
Method(s) of reproduction: seeds
Dormancy: short
Flower: pale yellow to yellow; small
Elevation: up to 1,500 m
Light: sunny

Notes: C_3 plant; often larger than *A. indica*; prefers fertile soils; pith is used as insulation for several products in India; useful as green manure or cover crop

Reported in: BAN, CAM, IDO, IND, MYA, NEP, PHI, SRI, THA, VIE

(1) Seedling, (2) young plant, (3) mature plant

1

2

3

4

5

6

***Aeschynomene indica* L.** Fabaceae

INDIAN JOINT-VETCH, AESIN, dicot

Found in: lowland, upland
Establishment method: DS > WS
Growth habit: erect, branched; up to 1.2 m
Moisture: wet to moist
Competitiveness: moderate
Seed contaminant: yes
Cultural control: high fertility; early removal by hand weeding or cultivation
Reported resistance: none

Life cycle: perennial **Seed wt:** 7.3
Method(s) of reproduction: seeds
Dormancy: yes, pronounced
Flower: yellow, often suffused with purple
Elevation: up to 1,000 m
Light: sunny

Notes: seedpod is distinctive of leguminous plants; red light inhibits germination; useful as fodder

Reported in: BAN, CAM, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(4) Flower, (5) pod, (6) mature plant

***Ageratum conyzoides* L.** Asteraceae

TROPIC AGERATUM, GOAT WEED, AGECO, dicot

Found in: upland
Establishment method: DS
Growth habit: erect, often decumbent herb; up to 1.2 m
Moisture: moist to dry
Competitiveness: moderate
Seed contaminant: unknown
Cultural control: early cutting or hand weeding and shallow cultivation
Reported resistance: none

Life cycle: annual **Seed wt:** 0.1
Method(s) of reproduction: seeds
Maturity time: quick flowering and short-lived, as little as 2 months
Dormancy: 50% of seeds can germinate immediately; light required for germination
Flower: white to pale purple/blue
Elevation: up to 3,000 m
Light: shade-tolerant

Notes: very plastic growth habit; may emerge throughout the entire season; responds to fertilizer; prefers higher elevations; toxic to livestock

Reported in: BAN, BHU, CHN, IDO, IND, LAO, MAL, MYA, NEP, PHI, SRI, THA, VIE

Similar species
Ageratum houstonianum Miller (plate 10)
Leaves squarer at the base; flower heads larger, florets about 6 mm long with blue styles exserted 2-3 mm.

(7) Seedling, (8) inflorescence, (9) mature plant, (10) *Ageratum houstonianum*

7

8

9

10

11

12

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14

Alternanthera sessilis Amaranthaceae
(L.) R. Br. ex DC.

SESSILE JOYWEED, ALRSE, dicot

Found in: lowland, upland
Establishment method: DS > WS
Growth habit: prostrate, creeping or ascending; many suberect branches, up to 1 m
Moisture: wet to moist; more terrestrial than aquatic
Competitiveness: moderate
Seed contaminant: unknown
Cultural control: flooding, hand weeding or tillage
Reported resistance: none

Life cycle: perennial **Seed wt:** 0.5
Method(s) of reproduction: seeds, stolons, stem fragment
Dormancy: unknown
Flower: white or pinkish, very small
Elevation: up to 2,650 m
Light: sunny

Notes: C_3 plant; sometimes consumed by humans

Reported in: BAN, BHU, CAM, CHN, IDO, IND, LAO, MAL, MYA, NEP, PHI, SRI, THA, VIE

Similar species
Alternanthera philoxeroides (Mart.) Griseb. (plate 14)
Flower heads axillary and on peduncles
10-45 mm long.

(11) Seedling, (12) inflorescence, (13) mature plant, (14) *Alternanthera philoxeroide*s inflorescence

***Amaranthus spinosus* L.** Amaranthaceae

Spiny amaranth, AMASP, dicot

Found in: upland
Establishment method: DS
Growth habit: erect, much-branched; sharp axillary spines; up to 1 m
Moisture: moist
Competitiveness: moderate to high
Seed contaminant: unknown
Cultural control: early hand weeding (before thorns grow) or cultivation; flooding suppresses growth
Reported resistance: none

Life cycle: annual **Seed wt:** 0.2
Method(s) of reproduction: seeds
Dormancy: variable, none to 4 mo; long viability; no light requirement for germination
Flower: pale green-purple tinge
Elevation: up to 1,800 m
Light: sunny; shade-sensitive

Notes: one of the world's worst weeds; C_4 plant; prefers fertile soils and higher temperatures; sometimes consumed by humans; young plants poisonous to livestock

Reported in: BAN, BHU, CHN, IDO, IND, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

Similar species
Amaranthus viridis L. (plate 17)
Erect, 0.8 m tall, without spines.
Leaves used as vegetable.

(15) Seedling, (16) *A. spinosus*, (17) *A. viridis*

15

16

17

18

19

20

***Commelina benghalensis* L.** Commelinaceae

TROPICAL SPIDERWORT, COMBE, monocot

Found in: upland, lowland
Establishment method: DS >> WS
Growth habit: herb; up to 1 m; prostrate or ascending
Moisture: moist to wet; drier than *C. diffusa*
Emergence time: 10 to 12 d
Seed contaminant: unknown
Competitiveness: moderate
Cultural control: flooding; hand and mechanical weeding may as stem pieces re-root
Reported resistance: none

Life cycle: perennial **Seed wt:** 2.0
Method(s) of reproduction: seeds, stolons
Maturity time: aerial flowers in 35 d; rhizomes with underground flowers in 42 d
Dormancy: yes, innate
Flower: purple or blue; those from underground stems are whitish
Elevation: up to 2,000 m
Light: sunny to slightly shaded

Notes: germinates best in full light; somewhat tolerant of herbicides; annual in temperate zones; prefers high fertility; single plant can cover a large area; useful forage and human food

Reported in: BAN, BHU, IDO, IND, JAP, KOR, MYA, NEP, PAK, PHI, SRI, THA, VIE

(18) Seedling, (19) flower, (20) whole plant

***Commelina diffusa* Burm. f.** Commelinaceae

SPREADING DAYFLOWER, COMDI, monocot

Found in: upland
Establishment method: DS > WS
Growth habit: creeping or ascending; up to 1 m
Moisture: wet, not flooded
Competitiveness: at least moderate
Seed contaminant: yes
Cultural control: early continuous flooding; hand and mechanical weeding difficult because pieces may re-root
Reported resistance: synthetic auxins (USA)

Life cycle: perennial **Seed wt:** 11.5
Method(s) of reproduction: stolons and by seeds
Flowering time: earlier than rice
Dormancy: innate and induced by high temperatures
Flower: blue
Elevation: up to 2,000 m
Light: shaded

Notes: more common than *C. benghalensis* in rice; somewhat tolerant of herbicides; very persistent in fields

Reported in: BAN, BHU, CHN, IDO, IND, KOR, LAO, MAL, MYA, NEP, PHI, SRI, THA, VIE

(21) Young plant, (22) mature plant

21

22

23

24

25

(19) Young plant, (20) flower, (21) mature plant

***Eclipta prostrata* (L.) L.** Asteraceae

FALSE DAISY, ECLAL, dicot

Found in: lowland, upland
Establishment method: DS > WS
Growth habit: herb; prostrate to erect, much-branched; up to 1.0 m
Moisture: wet to moist
Competitiveness: low to moderate
Seed contaminant: yes
Cultural control: cultivation and hand weeding; early removal or cutting; high fertility
Reported resistance: none

Life cycle: annual **Seed wt:** 0.4
Method(s) of reproduction: seeds
Maturity time: 42 d
Dormancy: none; light required for germination
Flower: white or cream
Elevation: up to 2,000 m
Light: sunny

Notes: no emergence from depth; C_3 plant; saline-tolerant; often in field margins; somewhat tolerant of butachlor

Reported in: BAN, BHU, CAM, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(23) Young plant, (24) inflorescence, (25) mature plant

***Eichhornia crassipes* (Mart.) Solms** Pontederiaceae

WATER HYACINTH, EICCR, monocot

Found in: lowland
Establishment method: TP > WS
Growth habit: floating, rooted in shallow water; up to 0.3 m
Moisture: aquatic—flooded to wet
Competitiveness: low to moderate; greater early, and greater than many other aquatics
Seed contaminant: unknown
Cultural control: drainage and physical removal possible with small infestations
Reported resistance: none

Life cycle: perennial **Seed wt:** 0.1
Method(s) of reproduction: stolons, plant fragments, plantlets developing from seeds
Dormancy: variable—none to many years
Flower: blue to violet
Elevation: up to 1,600 m
Light: sunny

Notes: one of the world's worst weeds; seeds viable for up to 15 years; causes increased water loss through evapotranspiration

Reported in: BAN, BHU, CAM, CHN, IDO, IND, JPN, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(26) Seedling, (27) vegetative growth, (28) flowers

26

27

28

29

30

***Ipomoea aquatica* Forssk.** Convolvulaceae

WATER SPINACH, SWAMP MORNINGGLORY, IPOAQ, dicot

Found in: lowland
Establishment method: TP > WS
Growth habit: vine, widely spreading and much-branched
Moisture: aquatic—flooded to wet
Competitiveness: low; greater early
Seed contaminant: yes
Cultural control: physical removal though readily re-roots from nodes
Reported resistance: none

Life cycle: perennial **Seed wt:** 36
Method(s) of reproduction: seeds, runners
Flowering time: 45–60 d
Dormancy: yes; may require seed coat to be broken
Flower: white to cream or purple
Elevation: up to 1,200 m
Light: sunny

Notes: consumed by humans; known widely in many Southeast Asian nations as kangkong

Reported in: BAN, CAM, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(29) Seedling, (30) mature plant

***Ludwigia adscendens* (L.) Hara** Onagraceae

CREEPING WATER PRIMROSE, LUDAC, dicot

Found in: lowland
Establishment method: TP > WS
Growth habit: herb; floating or rooted and creeping; up to 0.5 m
Moisture: aquatic—flooded or wet
Competitiveness: low
Seed contaminant: unknown
Cultural control: hand weeding
Reported resistance: none

Life cycle: perennial
Method(s) of reproduction: seeds, plant fragments, stolons
Dormancy: unknown
Flower: white to yellow
Elevation: up to 1,600 m
Light: partial shade to sunny

Notes: restricts waterways; reduces oxygen content in water; dangerous to cattle

Reported in: BAN, CAM, CHN, IDO, IND, JPN, LAO, MAL, MYA, NEP, PHI, SRI, THA, VIE

(31–33) Roots and shoots, (34) flower

31

32

33

34

35

36

37

***Ludwigia octovalvis* (Jacq.) Raven** Onagraceae

LONGFRUITED PRIMROSE-WILLOW, LUDOC, dicot

Found in: lowland
Establishment method: WS, TP
Growth habit: erect, much-branched and robust herb; up to 1.5 m
Moisture: wet to damp; drier than *L. adscendens*
Competitiveness: high
Seed contaminant: yes
Cultural control: early flooding or hand weeding
Reported resistance: none

Life cycle: perennial
Method(s) of reproduction: seeds and plant fragments
Dormancy: low or none; light requirement for germination
Flower: yellow, 4 petals each about 10 mm long
Elevation: up to 1,500 m
Light: partial shade to sunny

Notes: responsive to fertilizers; red hypocotyl, entire seedling often reddish

Reported in: BAN, CAM, IDO, IND, JPN, LAO, MAL, MYA, NEP, PHI, SRI, THA, VIE

Similar species
Ludwigia hyssopifolia (G. Don) Exell
Flowers with 4 petals each 3–5 mm long; widespread in Asia.

(35) Seedling, (36) mature plant, (37) *L. hyssopifolia* flowers

***Marsilea minuta* L.** Marsiliaceae

WATER CLOVER, MARMI, monocot

Found in: lowland
Establishment method: WS, TP
Growth habit: fern; creeping hairy rhizomes, erect or leaves floating
Moisture: aquatic—flooded to wet
Emergence time: first 10 days after transplanting
Competitiveness: moderate, but can be severe early; strong competitor for nutrients
Seed contaminant: unlikely
Cultural control: minimize wet tillage; dry tillage after harvest to desiccate rhizomes
Reported resistance: none

Life cycle: perennial
Method(s) of reproduction: spores, rhizomes, and fragments of rhizomes
Light: sunny

Notes: four-leaf clover appearance is distinctive; rhizomes establish best from surface; height responds plastically to water depth

Reported in: BAN, BHU, CAM, CHN, IDO, IND, KOR, LAO, MAL, MYA, PAK, PHI, SRI, THA, VIE

(38) Shoots, (39) mature plant

38

39

40

41

***Mimosa diplotricha* C. Wright ex Sauvalle** Fabaceae

GIANT SENSITIVE PLANT, MIMIN, dicot

Found in: upland
Establishment method: DS
Growth habit: prostrate to erect, many-branched shrub; up to 2 m
Moisture: dry to wet
Competitiveness: moderate
Seed contaminant: unknown
Cultural control: cutting or burning or hand weeding of seedlings; probably early flooding
Reported resistance: none

Life cycle: perennial **Seed wt:** 6
Method(s) of reproduction: seeds
Dormancy: yes, long; also long viability because of hard seeds; broken by heat
Flower: reddish purple to white
Elevation: up to 2,000 m
Light: sunny to partly shaded

Notes: improves soil fertility (legume); high early growth rate; a single plant can cover a large area; dangerous to cattle

Reported in: CAM, CHN, IDO, IND, LAO, MAL, MYA, PHI, SRI, THA, VIE

(40) Seedling, (41) mature plant

Monochoria vaginalis Pontederiaceae
(Burm. f.) C. Presl.

MONOCHORIA, MOOVA, monocot

Found in: lowland
Establishment method: TP > WS
Growth habit: herb; erect, hairless and fleshy; up to 0.5 m
Moisture: aquatic—wet to flooded
Competitiveness: moderate with great densities early
Seed contaminant: yes
Cultural control: stale seedbed with wet tillage, hand weeding
Reported resistance: ALS inhibitors (KOR)

Life cycle: perennial **Seed wt:** 0.07
Method(s) of reproduction: seeds, perhaps stolons
Flowering time: within 60 d
Dormancy: may need long anaerobic period to germinate
Flower: pale to dark blue
Elevation: up to 1,550 m
Light: sunny

Notes: germinates best in full light; often an annual in rice; consumed by humans

Reported in: BAN, BHU, CAM, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(42) Seedling, (43) mature plant

42

43

44

45

***Pistia stratiotes* L.** Araceae

WATERLETTUCE, PIIST, monocot

Found in: lowland
Establishment method: TP > WS
Growth habit: floating stoloniferous herb, sometimes rooting; about 0.1 m
Moisture: aquatic—flooded to moist
Competitiveness: probably low
Seed contaminant: unlikely
Cultural control: drainage; physical removal
Reported resistance: none

Life cycle: perennial
Method(s) of reproduction: plantlets and seeds
Maturity time: stolons by 5- to 6-leaf stage; maturity at 120 d
Dormancy: yes, seems to require long submergence period
Elevation: up to 1,000 m
Light: sunny

Notes: seeds germinate while submerged; survives extended periods in unflooded conditions; cold-sensitive, so not usually found in temperate regions

Reported in: BAN, CAM, CHN, IDO, IND, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(44) Plantlet, (45) mature plant

***Polygonum hydropiper* L.** Polygonaceae

MARSH-PEPPER SMARTWEED, WATER PEPPER, POLHY, dicot

Found in: lowland
Establishment method: DS, WS, TP
Growth habit: herb; erect or ascending; branched; up to 0.6 m
Moisture: flooded to damp; may require saturation for establishment
Competitiveness: probably low
Seed contaminant: unknown
Cultural control: completely uproot by hand or tillage as cut stems may resprout; control before flowering
Reported resistance: photosystem II inhibitor (FRA)

Life cycle: annual
Method(s) of reproduction: seeds, sometimes rooted stems
Maturity time: flowering by 90 d
Dormancy: variable, but usually an after-ripening period; light requirement for germination
Flower: greenish yellow, pinkish
Light: partial shade

Notes: acid-tolerant; leaves have hot taste; cultivated as spice for sashimi, raw fish

Reported in: BAN, BHU, CHN, IDO, IND, JPN, KOR, MAL, NEP, THA

(46) Flower, (47) mature plant

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***Portulaca oleracea* L.** Portulacaceae

Purslane, POROL, dicot

Found in: upland
Establishment method: DS >> WS
Growth habit: succulent branched spreading herb; up to 0.5 m
Moisture: dry to moist
Competitiveness: low to moderate
Seed contaminant: unknown
Cultural control: flooding; repeated shallow cultivation though re-roots readily
Reported resistance: multiple to photosystem II inhibitor + ureas/amides (USA)

Life cycle: annual **Seed wt:** 0.07
Method(s) of reproduction: seeds > stem fragments
Maturity time: flowers in 1 mo, maturity in 2 to 4 mo
Dormancy: low or none
Flower: yellow
Elevation: up to 2,700 m
Light: sunny to partly shaded

Notes: one of the world's worst weeds; prefers fertile soils; growth is slow until about 14 d; pig fodder and consumed by humans

Reported in: BAN, BHU, CHN, IDO, IND, JPN, KOR, MAL, MYA, PAK, PHI, THA, VIE

(48) Seedling, (49) flowers, (50) mature plant

***Sphenoclea zeylanica* Gaertn.** Campanulaceae

Gooseweed, SPDZE, dicot

Found in: lowland
Establishment method: DS, WS > TP
Growth habit: erect, branched herb with hollow stems; up to 1.5 m
Moisture: aquatic—flooded to wet; prefers stagnant water
Competitiveness: moderate
Seed contaminant: unknown
Cultural control: closed crop canopy limits weed growth
Reported resistance: synthetic auxins (PHI, MAL, THA)

Life cycle: annual **Seed wt:** 0.01
Method(s) of reproduction: seeds
Dormancy: yes; light requirement for germination
Flower: small and white
Elevation: up to 300 m
Light: partial shade to sunny

Notes: height is very plastic; usually not a weed of other crops

Reported in: BAN, CAM, IDO, IND, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(51) Seedling, (52) inflorescence, (53) mature plant

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***Trianthema portulacastrum* L.** Aizoaceae

HORSE PURSLANE, GIANT PIGWEED, TRTPO, dicot

Found in: lowland, upland
Establishment method: DS > WS
Growth habit: prostrate to ascending, much branched, with fleshy leaves; up to 0.5 m
Moisture: dry to moist
Emergence time: with rice
Competitiveness: moderate
Seed contaminant: unknown
Cultural control: flooding; tillage often ineffective because of stem regrowth; do not allow to mature; remove fruiting plants from field to stop shedding
Reported resistance: none

Life cycle: annual **Seed wt:** 1.3
Method(s) of reproduction: seeds
Maturity time: flowers in 20–30 d; maturity about 20 d after pollination
Dormancy: secondary; long viability because of hard seed
Flower: white to pale pink
Elevation: up to 800 m
Light: partial shade

Notes: green (most competitive) and red (most reproductive) biotypes in India; solar-tracking leaves; may produce 3 to 4 flushes in one season

Reported in: CAM, IDO, IND, LAO, MYA, NEP, PAK, PHI, SRI, THA, VIE

(54) Seedling, (55) flower, (56) mature plant

***Cynodon dactylon* (L.) Pers.** Poaceae

BERMUDA GRASS, CYNDA, monocot

Found in: upland, lowland
Establishment method: DS
Growth habit: prostrate to ascending; up to 0.4 m
Moisture: dry to moist, drained
Emergence time: 14 d
Competitiveness: moderate
Seed contaminant: unknown
Cultural control: stale seedbed; tillage and removal; dry tillage to desiccate rhizomes; soil solarization
Reported resistance: none

Life cycle: perennial **Seed wt:** 0.3
Method(s) of reproduction: rhizomes and stolons, seeds
Maturity time: tillers at 25 to 30 d; maturity at 120 d
Dormancy: no; seeds survive 50 d of submergence
Flower: white or pinkish, very small
Elevation: up to 2,300 m
Light: sunny, partial shade

Notes: one of the world's worst weeds; C_4 plant; alkaline- and acid-tolerant; flood- and drought-tolerant; numerous biotypes

Reported in: BAN, BHU, CAM, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(57) Shoots from rhizome, (58) inflorescence, (59) mature plant

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***Dactyloctenium aegyptium* (L.) Willd.** Poaceae

CROWFOOT GRASS, DTTAE, monocot

Found in: upland, lowland
Establishment method: DS
Growth habit: creeping with ascending culms; up to 0.6 m
Moisture: moist
Emergence time: shortly after rainfall
Competitiveness: moderate to high
Seed contaminant: yes
Cultural control: stale seedbed; flooding; early removal by hand
Reported resistance: none

Life cycle: annual **Seed wt:** 0.3
Method(s) of reproduction: seeds
Maturity time: 28 d; senescence in 4 mo
Dormancy: unknown
Elevation: up to 1,000 m
Light: sunny, partial shade

Notes: C_4 plant; seed viability is long; fodder, but some reports of poor nutrition, and may be toxic to livestock during hot weather

Reported in: BAN, CHN, IDO, IND, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(60) Seedling, (61) mature plant

***Digitaria ciliaris* (Retz.) Koel.** Poaceae

CRAB GRASS, DIGSP, monocot

Found in: upland
Establishment method: DS
Growth habit: creeping, tufted with prostrate to erect culms; up to 0.6 m
Moisture: dry to moist
Competitiveness: moderate to high
Seed contaminant: yes
Cultural control: flooding, early removal by hand
Reported resistance: ACCase inhibitors (BRA)

Life cycle: annual **Seed wt:** 0.6
Method(s) of reproduction: seeds
Dormancy: variable, up to 7 mo
Elevation: up to 2,000 m
Light: sunny; shade-sensitive

Notes: tolerates defoliation; very responsive to nutrients; C_4 plant; useful forage

Reported in: BAN, BHU, CAM, CHN, IDO, IND, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(62) Seedling, (63) inflorescence, (64) mature plant

62

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64

***Echinochloa colona* (L.) Link** Poaceae

JUNGLE-RICE, ECHCO, monocot

Found in: lowland, upland
Establishment method: DS > WS
Growth habit: tufted and erect; up to 0.6 m
Moisture: dry to wet
Competitiveness: high
Seed contaminant: yes
Cultural control: early cultivation; early flooding; hand weeding
Reported resistance: ACCase inhibitors (BOL, COS, NIC), ALS inhibitors (BOL, COS), glycines (AUS), photosystem II inhibitors (AUS, IRN), ureas and amides (COL, COS, GTM, HND, PAN, SLV, VEN), multiple resistance (COS)

Life cycle: perennial **Seed wt:** 1.0
Method(s) of reproduction: seeds, stolons
Flowering time: 30 to 45 d
Dormancy: low or none; light requirement for germination
Elevation: up to 2,000 m
Light: sunny, partial shade

Notes: one of the world's worst weeds; soil saturation strongly reduces emergence of buried seeds; responsive to nutrients; profuse root production; good forage; C_4 plant; encouraged by zero tillage

Reported in: BAN, CAM, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(65) Seedling, (66) inflorescence, (67) mature plant

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***Echinochloa crus-galli* (L.) P. Beauv.** Poaceae

BARNYARDGRASS, ECHCG, monocot

Found in: lowland, upland
Establishment method: DS > WS > TP
Growth habit: erect, tufting up to 2 m
Moisture: wet to moist
Competitiveness: very high
Seed contaminant: yes
Cultural control: thorough land preparation; early, deep flooding; rotation
Reported resistance: ACCase inhibitors (CHN, THA, USA), chloroacetamides (CHN, PHI, THA), dinitroanilines (BUL), photosystem II inhibitors (CAN, CZE, FRA, POL, ESP, USA), synthetic auxins (BRA, USA), thiocarbamates (CHN, USA), ureas and amides (GRC, PHI, THA, USA), multiple resistance (BRA, PHI, THA, USA)

Life cycle: annual **Seed wt:** 3
Method(s) of reproduction: seeds
Flowering time: 42 to 63 d
Dormancy: variable, up to 4 mo
Elevation: up to 2,500 m
Light: sunny; shade-sensitive

Notes: one of the world's worst weeds; C_4 plant; phenotypically variable; responds to nitrogen, potassium, and phosphorus

Reported in: BAN, BHU, CAM, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(68) Seedling, (69) inflorescence, (70) mature plant

***Echinochloa glabrescens* Munro ex Hook. f.** Poaceae

ECHGL, monocot

Found in: lowland
Establishment method: DS, WS, TP
Growth habit: tufted, erect; up to 1 m
Moisture: wet
Competitiveness: high
Emergence time: within 7 d
Seed contaminant: yes
Cultural control: thorough land preparation; early flooding to 30 mm depth
Reported resistance: none

Life cycle: annual **Seed wt:** 2
Method(s) of reproduction: seeds
Flowering time: 30 to 35 d
Dormancy: unknown
Elevation: unknown
Light: sunny

Reported in: BAN, BHU, CAM, IDO, IND, KOR, LAO, MAL, NEP, PAK, PHI, SRI, THA, VIE

(71) Mature plants

71

72

73

***Eleusine indica* (L.) Gaertn.** Poaceae

Goosegrass, ELEIN, monocot

Found in: upland
Establishment method: DS
Growth habit: stems erect or ascending, branched; up to 0.6 m
Moisture: moist to wet
Competitiveness: high
Seed contaminant: unknown
Cultural control: early continuous flooding; hand weeding
Reported resistance: ACCase inhibitor (BOL, BRA, MAL), ALS inhibitor (COS), bipyridiliums (MAL, USA), dinitroanilines (USA), multiple: ACCase inhibitor + glycines (MAL)

Life cycle: annual **Seed wt:** 0.4
Method(s) of reproduction: seeds
Maturity time: flowering in 30 d; maturity in 4 to 6 mo
Dormancy: some, but usually short
Elevation: up to 2,000 m
Light: sunny; shade-sensitive

Notes: one of the world's worst weeds; C_4 plant; multiple generations in one season; can emerge from soil depths of up to 0.08 m

Reported in: BAN, BHU, CAM, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(72) Inflorescence, (73) mature plant

Imperata cylindrica (L.) Raeuschel — Poaceae

Cogon grass, IMPCY, monocot

Found in: upland
Establishment method: DS
Growth habit: erect, tufted, and unbranched; scaly rhizomes; up to 2 m
Moisture: moist to dry; well-drained
Competitiveness: high
Seed contaminant: unknown
Cultural control: legume cover crops; repeated tillage to desiccate rhizomes; flooding; rotation
Reported resistance: none

Life cycle: perennial **Seed wt:** 1
Method(s) of reproduction: seeds, rhizomes
Dormancy: none in seeds, but lateral buds are dormant; seeds viable for up to 1 year
Elevation: up to 3,000 m
Light: sunny; shade-sensitive

Notes: one of the world's worst weeds; C_4 plant; acid- and alkaline-tolerant; prefers light-textured soils; many infested fields are abandoned; burning does not injure rhizomes

Reported in: BAN, BHU, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(74) Shoots, (75) inflorescence, (76) mature plant with rhizomes

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***Ischaemum rugosum* Salisb.** Poaceae

WRINKLED GRASS, SARAMOLLAGRASS, ISCRU, monocot

Found in: lowland, upland
Establishment method: DS >> WS, TP
Growth habit: tufted, ascending to erect, and much-branched; up to 1.0 m
Emergence time: within 7 d
Moisture: aquatic—flooded to wet
Competitiveness: high
Seed contaminant: unknown
Cultural control: early continuous flooding; early removal
Reported resistance: ACCase inhibitor (COL), bipyridiliums (MAL)

Life cycle: perennial **Seed wt:** 4
Method(s) of reproduction: seeds, rhizomes
Maturity time: 130 d
Dormancy: yes; light required for germination
Elevation: up to 2,400 m
Light: sunny; shade-tolerant

Notes: red leaf sheaths at the base; new seedling cohorts emerge after drainage from up to 0.05 m soil depth; responsive to fertilizer; acid-tolerant; good forage if young; germinates on surface of saturated soil; C_4 plant

Reported in: BAN, CAM, IDO, IND, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(77) Young plant, (78) inflorescence showing paired racemes, (79) inflorescence, (80) mature plant

***Leersia hexandra* Sw.** Poaceae

Southern cutgrass, LERHE, monocot

Found in: lowland
Establishment method: WS, TP > DS
Growth habit: creeping to ascending, tufted, and erect; up to 1.2 m
Moisture: aquatic—flooded to wet
Competitiveness: moderate to high
Seed contaminant: yes
Cultural control: stale seedbed; rotavating/puddling in wet or dry conditions
Reported resistance: none

Life cycle: perennial **Seed wt:** 0.8
Method(s) of reproduction: rhizomes, seeds
Dormancy: unknown
Elevation: up to 2,200 m
Light: partial shade to sunny

Notes: stem fragments will root at nodes

Reported in: BAN, CAM, CHN, IDO, IND, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(81) Inflorescence and node, (82) mature plants

81

82

83

84

***Leptochloa chinensis* (L.) Nees** Poaceae

CHINESE SPRANGLETOP, RED SPRANGLETOP, LEFCH, monocot

Found in: lowland
Establishment method: DS > WS > TP
Growth habit: tufted, erect, and slender; sometimes with reclining stems; up to 1.2 m
Moisture: aquatic—wet to flooded
Competitiveness: high
Seed contaminant: yes
Cultural control: thorough land preparation and hand weeding; permanent flood within 1 week
Reported resistance: ACCase inhibitor (THA)

Life cycle: perennial **Seed wt:** 0.1
Method(s) of reproduction: seeds, plant fragments
Dormancy: low or none
Elevation: up to 1,400 m
Light: sunny

Notes: C_4 plant; good fodder

Reported in: BAN, CAM, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, PAK, PHI, SRI, THA, VIE

(83) Seedling, (84) mature plant

85

86

***Oryza sativa* L.** Poaceae

Weedy rice, red rice, ORYSA, monocot

Found in: lowland
Establishment method: WS, DS
Moisture: moist to flooded
Emergence time: with sown crop or soon after
Competitiveness: high
Seed contaminant: yes
Cultural control: stale seedbed, early flooding, hand weeding, water seeding, transplanting rice
Reported resistance: none

Life cycle: annual **Seed wt:** 20-30
Method(s) of reproduction: seeds
Elevation: as for rice crop
Light: as for rice crop

Notes: introduced to fields as seeds in irrigation water, contaminated tillage and harvesting equipment, and contaminated seed supplies. Originates as result of hybridization between *O. rufipogon* or *O. nivara* and *O. sativa* cultivars, or between cultivars, through selection of weedy traits or through segregation from landraces. Key weedy traits are early grain shattering and variable dormancy.

Reported in: BAN, BOL, BRA, CAM, CHN, COL, COS, IDO, IND, MAL, KOR, NEP, PAK, PHI, SRI, THA, USA, VEN, VIE

(85) Mature plants, (86) seeds/caryopsis with hull removed

***Panicum repens* L.** Poaceae

TORPEDO GRASS, PANRE, monocot

Found in: lowland
Establishment method: DS
Growth habit: creeping; erect and branching stems; up to 1.0 m
Moisture: dry to moist; drought-tolerant
Competitiveness: perhaps moderate
Seed contaminant: yes
Cultural control: flooding; tillage or cutting
Reported resistance: none

Life cycle: perennial **Seed wt:** 0.67
Method(s) of reproduction: rhizomes, seeds
Maturity time: rhizomes in 30 d; flowers in 50 to 60 d
Dormancy: unknown
Elevation: up to 2,000 m
Light: sunny; shade-tolerant

Notes: prefers sandy soils; acid- and salt-tolerant; deep plowing increases rate of spread; after establishment can survive moderate drought; fodder

Reported in: BAN, CAM, CHN, IDO, IND, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(87) Shoots from rhizomes, (88) inflorescence, (89) mature plants

87

88

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90

***Paspalum distichum* L.** Poaceae

KNOTGRASS, PASDS, monocot

Found in: lowland, upland
Establishment method: DS > WS, TP
Growth habit: creeping branched stolons, erect stems; up to 0.6 m
Moisture: moist to wet
Competitiveness: high
Seed contaminant: yes
Cultural control: thorough land preparation; early continuous flooding; tillage during dry season to desiccate rhizomes
Reported resistance: none

Life cycle: perennial
Method(s) of reproduction: stolons > seeds and rhizomes
Maturity time: 82 d
Dormancy: yes, perhaps requires cold to germinate; apical and bud dominance in new stems
Elevation: up to 1,500 m
Light: sunny; shade-sensitive

Notes: detached stolons easily regenerate; increases under zero tillage; similar to *Panicum repens* but more slender

Reported in: BAN, BHU, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

***Paspalum scrobiculatum* L.** Poaceae

KODO MILLET, PASSC, monocot

Found in: lowland, upland
Establishment method: DS > WS
Growth habit: erect, tufted, and rooting at lower nodes; up to 1 m
Moisture: flooded to moist
Competitiveness: low
Seed contaminant: yes
Cultural control: tillage; deep flooding; hand weeding
Reported resistance: none

Life cycle: perennial
Method(s) of reproduction: seeds, rooted stem fragments
Maturity time: 90 d
Dormancy: undetected
Elevation: up to 3,000 m
Light: sunny; shade-sensitive

Notes: responsive to nutrients; very heterogeneous; good forage; grown as cereal grain in some places, but also reported toxic in some cases

Reported in: BAN, CAM, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(91) Young shoot, (92) inflorescence, (93) mature plants

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Rottboellia cochinchinensis Poaceae
(Lour.) W.D. Clayton

ITCHGRASS, ROOEX, monocot

Found in: upland
Establishment method: DS
Growth habit: tufted, erect, and branching; rooting at nodes; up to 3 m
Moisture: dry to moist; well-drained
Competitiveness: very high
Seed contaminant: yes
Cultural control: clean seed and implements; flooding; rotate to broadleaf crops; control in nearby areas
Reported resistance: ACCase inhibitors (USA)

Life cycle: annual **Seed wt:** 15
Method(s) of reproduction: seeds
Dormancy: 1 to 4 mo; after-ripening requirement
Elevation: up to 1,500 m
Light: sunny; shade-sensitive

Notes: one of the world's worst weeds; emerges from up to 0.15-m depth, but relatively low seed viability

Reported in: CHN, IDO, IND, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(94) Seedling, (95) hairs on leaf sheath, (96) mature plant

Bolboschoenus maritimus Cyperaceae
(L.) L. Palla

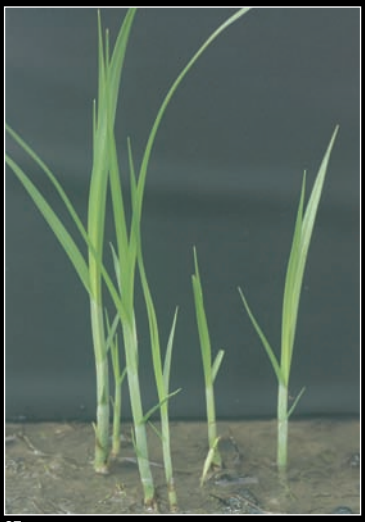
SALTMARSH BULRUSH, SCPMA, monocot

Found in: lowland
Establishment method: WS, TP > DS
Growth habit: erect and slender stem arising from tuberous base; up to 1.5 m
Moisture: wet to flooded
Emergence time: within 7 d of last tillage
Competitiveness: high
Seed contaminant: yes
Cultural control: rotation; deep tillage may bury tubers; alternately, long drainage periods and zero tillage
Reported resistance: ALS inhibitor (KOR)

Life cycle: perennial **Seed wt:** 5.6
Method(s) of reproduction: tubers > stolons > seeds
Dormancy: yes, in tubers
Elevation: up to 3,000 m
Light: sunny; shade-sensitive

Notes: saline-tolerant; seed production may increase with water depth, helping its persistence through wet/dry cycles

Reported in: BAN, CAM, CHN, IDO, IND, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE



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101

Cyperus difformis L. Cyperaceae

SMALLFLOWER UMBRELLA SEDGE, CYPDI, monocot

Found in: lowland
Establishment method: WS > TP > DS
Growth habit: tufted and erect; up to 1.0 m
Moisture: wet to moist
Emergence time: within 7 d; continual throughout season
Competitiveness: moderate
Seed contaminant: yes
Cultural control: early continuous flooding, hand weeding, tillage
Reported resistance: ALS inhibitors (AUS, BRA, ITA, KOR, ESP, USA)

Life cycle: annual **Seed wt:** 0.01
Method(s) of reproduction: seeds
Maturity time: as little as 30 d
Dormancy: none
Elevation: up to 1,400 m
Light: sunny

Notes: germinates best in full light

Reported in: BAN, BHU, CAM, CHN, IDO, IND, LAO, JPN, KOR, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(99) Seedling, (100) inflorescence, (101) mature plants

Cyperus iria L.

Cyperaceae

RICE FLAT SEDGE, CYPIR, monocot

Found in: lowland, upland
Establishment method: DS, WS >> TP
Growth habit: erect; tufted up to 0.8 m
Emergence time: within 7 d
Moisture: moist to wet
Competitiveness: moderate
Seed contaminant: yes
Cultural control: early flooding; hand weeding
Reported resistance: none

Life cycle: annual **Seed wt:** 0.1
Method(s) of reproduction: seeds
Maturity time: as little as 30 d
Dormancy: yes; can germinate about 75 d after shedding
Elevation: up to 1,200 m
Light: sunny

Notes: germinates best in full light; C_4 plant; may have multiple generations in one season; prefers lower elevations; used as forage and in mat-making

Reported in: BAN, BHU, CAM, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(102) Seedling, (103) inflorescence, (104) mature plant

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***Cyperus rotundus* L.** Cyperaceae

PURPLE NUTSEDGE, CYPRO, monocot

Found in: upland
Establishment method: DS
Growth habit: erect; tubers in chains on rhizomes; up to 0.7 m
Emergence time: simultaneous with rice
Moisture: dry to moist
Competitiveness: moderate to low, but competitive early
Seed contaminant: yes
Cultural control: stale seedbed; suppressive crop with narrow rows; high plant density; flooding suppresses growth but does not kill tubers; interrow cultivation
Reported resistance: none

Life cycle: perennial **Seed wt:** 0.1
Method(s) of reproduction: tubers, rhizomes
Maturity time: from 21 to 56 d
Dormancy: yes, apical dominance in tubers
Elevation: up to 1,800 m
Light: sunny; shade-sensitive

Notes: the world's worst weed; C_4 plant; saline-sensitive; tubers may be viable for several years; tubers consumed by humans; forage

Reported in: BAN, BHU, CHN, IDO, IND, JPN, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(105) Shoots from tubers, (106) inflorescence, (107) mature plant

***Fimbristylis dichotoma* (L.) Vahl** Cyperaceae

FORKED FRINGE-RUSH, FIMDI, monocot

Found in: upland, lowland
Establishment method: DS, WS
Growth habit: erect; variable in habit and inflorescence size, up to 0.7 m
Moisture: dry to wet
Competitiveness: moderate
Seed contaminant: yes
Cultural control: early flooding; hand weeding, tillage
Reported resistance: none

Life cycle: perennial **Seed wt:** 0.1
Method(s) of reproduction: seeds, rhizomes
Dormancy: unknown
Elevation: up to 2,500 m
Light: sunny

Notes: very heterogeneous species; saline-tolerant; C_4 plant; better adapted to drier soils; useful for mat-making

Reported in: BAN, CHN, IDO, IND, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(108) Seedling, (109) mature plant

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***Fimbristylis miliacea* (L.) Vahl** Cyperaceae

GLOBE FRINGE-RUSH, FIMMI, monocot

Found in: lowland, upland
Establishment method: DS > WS > TP
Growth habit: erect and strongly tillering; up to 0.6 m
Moisture: moist to wet
Emergence time: within 7 d
Competitiveness: moderate; strong root competition
Seed contaminant: yes
Cultural control: early flooding; hand weeding
Reported resistance: ALS inhibitors (BRA); synthetic auxins (MAL)

Life cycle: perennial **Seed wt:** 0.02
Method(s) of reproduction: seeds
Flowering time: 30 d
Dormancy: none; light requirement for germination
Elevation: up to 1,000 m
Light: sunny

Notes: saline-tolerant; may emerge throughout season; may produce multiple generations in one season; C_4 plant; useful in mat-making

Reported in: BAN, BHU, CAM, CHN, IDO, IND, KOR, LAO, MAL, MYA, NEP, PAK, PHI, SRI, THA, VIE

(110) Seedling, (111) inflorescence, (112-113) mature plants

***Scirpus juncoides* Roxb.** Cyperaceae

BULRUSH, SCPJO, monocot

Found in: lowland
Establishment method: TP
Growth habit: erect and strongly tillering; up to 0.75 m
Moisture: wet
Competitiveness: low to moderate
Seed contaminant: yes
Cultural control: wet or dry cultivation; early flooding; dry field to stop regrowth after rice harvest
Reported resistance: ALS inhibitors (JAP, KOR)

Life cycle: annual **Seed wt:** 0.2
Method(s) of reproduction: seeds
Dormancy: 2 to 3 mo
Elevation: up to 2,000 m
Light: sunny

Notes: burial or submergence favors germination; germinates best at less than full light; fodder for cattle

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Appendix A. Weed species synonyms

Weed	Synonym(s)
Aeschynomene aspera	*Hedysarum lagenarium*
A. indica	*A. virginica*
Ageratum conyzoides	*A. hirsutum*
Alternanthera sessilis	*A. repens*
	A. triandra
	Gomphrena sessilis
Bolboschoenus maritimus	*Scirpus maritimus*
Commelina benghalensis	*C. prostrata*
C. diffusa	*C. agraria*
	C. aquatica
	C. communis
	C. nodiflora
Cynodon dactylon	*C. arcuatus*
	C. parviglumis
Cyperus rotundus	*C. odoratus*
	C. tetrastachyos
	C. tuberosus
	Schoenus tuberosus
Dactyloctenium aegyptium	*D. meridionale*
	Cynosurus aegyptius
	Eleusine aegyptiaca
	E. mucronata
Digitaria ciliaris	*D. adscendens*
	D. biformis
	D. marginata
	Panicum adscendens
	P. ciliare
	Syntherisma ciliaris
Echinochloa colona	*E. colonum*
	Panicum colonum
E. crus-galli	*E. spiralis*
	Panicum crus-galli
Eclipta prostrata	*E. alba*
	E. erecta
Eichhornia crassipes	*E. cordifolia*
	E. crassicaulis
	E. speciosa
	Eichhorniae azureae
	Pontederia crassipes
Eleusine indica	*Cynodon indicus*
	Cynosurus indicus
	Eleusine japonica
Fimbristylis dichotoma	*F. annua*
	F. communis
	F. diphylla
	F. lara

continued on next page

Appendix A continued.

Weed	Synonym(s)
F. miliacea	*F. littoralis*
Imperata cylindrica	*I. allang*
	I. arundinacea
	I. koenigii
	Lagurus cylindricus
	Saccharum cylindricum
	S. koenigii
Ipomoea aquatica	*I. repens*
	I. reptans
	I. subdentata
	Convolvulus reptans
Leersia hexandra	*L. abyssinica*
	L. capensis
	Homalocenchrus hexandrus
Leptochloa chinensis	*Poa chinensis*
Ludwigia adscendens	*Jussiaea repens*
	J. adscendens
	J. diffusa
	J. stolonifera
	Ludwigia natans
L. octovalvis	*Jussiaea augustifolia*
	J. octovalvis
Marsilea minuta	*M. crenata*
	M. diffusa
	M. crenulata
Mimosa diplotricha	*M. invisa*
Oryza sativa	*O. sativa f. spontanea*
Panicum repens	*P. gouinii*
Paspalum distichum	*P. paspaloides*
	Digitaria paspaloides
P. scrobiculatum	*P. commersonii*
	P. orbiculare
	P. polystachyum
Pistia stratiotes	*P. stratemoides*
Polygonum hydropiper	*Persicaria hydropiper*
Portulaca oleracea	*P. sativa*
Rottboellia cochinchinensis	*R. exaltata*
Scirpus spp.	*Schoenoplectus* spp.
S. juncoides	*S. erectus*
	S. junctiformus
	S. luzonensis
	S. scirpus var. *elatoir*
	Eleocharis juncoides
Trianthema portulacastrum	*T. monogyna*

*Largely based on International Seed Testing Association's "List of Stabilized Plant Names," 2001, at www.ars-grin.gov/~sbmljw/istaintrod.htm.

Appendix B. Common names of weeds in Bangladesh

Weed	Common name(s)
Ageratum conyzoides	Fulkuri, ochunti, shialmuti
Alternanthera sessilis	Phul haicha, chanchi, malcha, sachi shak
Amaranthus spinosus	Katanata, kata notey
Commelina benghalensis	Dholpata, kanaibashi, kanchira
C. diffusa	Kanainala, manaina
Cynodon dactylon	Doorba (durba), dubla, durbaghas
Cyperus difformis	Behua, alighasha, matichaise, chotochaise, moishnoom
C. iria	Barachucha
C. rotundus	Badhail, bedalle, dila, motha, nagarmuta, sadakufi
Dactyloctenium aegyptium	Kachita ghas
Echinochloa colona	Alighasha, khudhey shayma, shymaghas
E. crus-galli	Barashymaghas, dalghas, gobra, jatghasha, shama
E. glabrescens	Shyma
Eclipta prostrata	Keshuti
Eichhornia crassipes	Kachuripana
Eleusine indica	Binna challa, chapra, gaicha, malangakuri, malankuri
Fimbristylis dichotoma	Joina chaise
F. miliacea	Bara javani, bara pukkera, chatki ghash, joina, murighash
Imperata cylindrica	Ulu
Ischaemum rugosum	Mona, moraro
Leersia hexandra	Arali
Leptochloa chinensis	Fulka
Ludwigia adscendens	Hulmuri?
L. octovalvis	Maricha
Marsilea minuta	Sushni sak, angta ghash, hamai lotti
Monochoria vaginalis	Kosturi, kochoripana, panee kachu
Panicum repens	Baranda, chera
Paspalum scrobiculatum	Angta
Pistia stratiotes	Topapana, takapana, barapana, phena tokapana
Polygonum hydropiper	Bishkatali, pakurmal, panimarich
Portulaca oleracea	Bara laniya, bara nunia, ghee kalam, nunia
Scirpus juncoides	Chisra

Appendix C. Common names of weeds in Cambodia

Weed	Common name(s)
Alternanthera sessilis	Chaeung bang kang
Amaranthus spinosus	Phti banla
Cynodon dactylon	Smao anchien
Cyperus iria	Kak kangkep
C. rotundus	Smao kravanh chrouk
Eichhornia crassipes	Kam-plauk
Eleusine indica	Smao choeung tukke
Imperata cylindrica	Sbauv
Ipomoea aquatica	Trakuon
Ischaemum rugosum	Smao srauv
Mimosa invisa	Banla saet (sael)
Mimosa diplotricha	Banla saet
Monochoria vaginalis	Chrach
Panicum repens	Chhlong
Pistia stratiotes	Chak thom
Portulaca oleracea	Kbet choun

Appendix D. Common names of weeds in China

Weed	Common name(s)
Aeschynomene indica	田皂角，合萌
Ageratum conyzoides	胜红蓟，鱼香蓟
Alternanthera sessilis	莲子草，虾钳草
Amaranthus spinosus	刺草
Commelina diffusa	竹节菜
Cynodon dactylon	狗芽根， 绊根草
Cyperus difformis	异型莎草
C. iria	碎米莎草
C. rotundus	香附子，莎草
Digitaria ciliaris	毛马唐
Echinochloa colona	芒稷
E. crus-galli	长芒野稗
Eclipta prostrata	鳢肠，旱莲草，墨草
Eichhornia crassipes	凤眼莲
Eleusine indica	牛筋草
Fimbristylis dichotoma	两岐飘拂草
F. miliacea	水虱草，日照飘拂草
Imperata cylindrica	白茅，茅草
Leersia hexandra	李氏禾，游草
Leptochloa chinensis	千金子
Ludwigia adscendens	水龙， 过江藤
Marsilea minuta	蘋，四叶蘋，田字草
Monochoria vaginalis	鸭舌草
Paspalum distichum	双穗雀草
P. scrobiculatum	皱稃雀稗， 鸭也母 草
Pistia stratiotes	大薸，水浮莲
Polygonum hydropiper	水蓼，辣蓼
Portulaca oleracea	马齿苋，马齿菜
Scirpus juncoides	萤蔺

Appendix E. Common names of weeds in India

Weed	Common name(s)
Aeschynomene aspera	Sola
Ageratum conyzoides	Bhurbhurwa, gundhaubon, mahakua
Amaranthus spinosus	Bajra, chauli, katemath, kantili chaulai
Commelina benghalensis	Kanchura, kanasiri, kanchara, kankaua, kena
Cynodon dactylon	Dub, hariyali
Cyperus spp.	Motha
C. iria	Morphula
Dactyloctenium aegyptium	Madana, makra, makara, makari
Digitaria ciliaris	Nargorwa, suruwari, takri
Echinochloa colona	Sanwa
E. crus-galli	Kayada, sanwak
Eclipta prostrata	Bhangra, bhringraj, ghuzi
Eichhornia crassipes	Falkhumbi, jalkhumbi, kulavali
Eleusine indica	Jangali marua, jhingari, kodai
Imperata cylindrica	Dab, siru, chero, dharba, modewa gaddi
Ipomoea aquatica	Kalmua, Kalmi, Kalmi sag, Patuasag
Ludwigia adscendens	keshandam, keshara
Mimosa diplotricha	Anathottavadi
Panicum repens	Injipilla, karigaddi
Paspalum scrobiculatum	Kodo, kodra
Pistia stratiotes	Jalakumbi, kumbi, takapana
Polygonum hydropiper	Bishkatal, packurmul
Portulaca oleracea	Ghol, jangali palak, jowar, kufa, kulfa
Rottboellia cochinchinensis	Barsali, bura, swooate, dholu, konda panookoo
Trianthema portulacastrum	Patharchatta

Appendix F. Common names of weeds in Indonesia*

Weed	Common name(s)
Aeschynomene indica	Dinding, Gĕdèyân, Kâtisân, Lorotis (Jav.)
Ageratum conyzoides	Bândotân, berokan
Alternanthera sessilis	Krĕmâh, tolod
Amaranthus spinosus	Bâyâm duri, bayam eri, bayam cikron, senggang cucuk
Commelina spp.	Brâmbângân, gèwor
Cynodon dactylon	Grintingân
Cyperus difformis	Jĕungân, Jukut pendul, Râmon brèndèlân (Jav.)
C. iria	Rumput mĕndĕrong, Dekeng wangin, Djekeng, Nyur-nyuran, Rumput jekeng kunyit, Umbung
C. rotundus	Tĕki, Tĕki berumbi
Dactyloctenium aegyptium	Sukĕt dringoân, Sukĕt kâtèlân, Sukĕt kârtut (Jav.), Sapabang babi
Digitaria ciliaris	Jâlâmpârân, Sukĕt câkârâyâm
Echinochloa colona	Rumput kusâ-kusâ
E. crus-galli	Pâdi burung
Eclipta prostrata	Orâng-âring, Urâng-âring
Eichhornia crassipes	Ècèng
Eleusine indica	Rumput belulâng
Fimbristylis dichotoma	Bulu (jukut) mâtâ munding (Sund.)
F. miliacea	Âdâs-âdâsân, Riwit, Sunduk welut, Tumbârân (Jav.)
Imperata cylindrica	Âlâng-âlâng
Ischaemum rugosum	Blĕmbĕm (Jav.)
Leersia hexandra	Bèntâ
Leptochloa chinensis	Timunân (Jav.)
Ludwigia adscendens	Pângèor
L. octovalvis	Lâkum âir
Mimosa diplotricha	Pis koetjing, Rèmbètè (Jav.)
Monochoria vaginalis	Ècèng pâdi
Oryza sativa (weedy rice)	Pâdi hântu
Panicum repens	Kĕrunong pâdi, Lâmpuyângân, Rumput jâè-jâè
Paspalum distichum	Âsinân
P. scrobiculatum	Jâringân, Rumput kĕtih bĕlâlâng
Pistia stratiotes	Kiâmbâng, Âpu-âpu
Portulaca oleracea	Gelâng, Krokot
Rottboellia cochinchinensis	Brânjângân, Bludru bâyung (Jav.)
Scirpus juncoides	Kâmbo mâncik
Sphenoclea zeylanica	Gundâ
Trianthema portulacastrum	Subang-subang

*Most weeds present were listed in Soerjani et al (1986). Pronunciation as in that text. Except where noted, only common names for the Indonesian language are given. Jav. = Javanese; Sund. = Sundanese. Some names were from Galinato et al (1999).

Appendix G. Common names of weeds in Korea

Weed	Common name(s)
Cyperus difformis	Albang dong sani
C. iria	Chambang-donsani
F. miliacea	Barambaneulgiji
Monochoria vaginalis	Mooldalgebi

Appendix H. Common names of weeds in Laos

Weed	Common name(s)
Ageratum conyzoides	Nya khiu
Alternanthera sessilis	Nea kon ta sarng
Amaranthus spinosus	Pak hom nahm
Commelina benghalensis	Nya kabpi hyai
C. diffusa	Nya kabpi noy
Cynodon dactylon	Nya pong
C. iria	Nya khompao
C. rotundus	Nya heomu
Dactyloctenium aegyptium	Nya pak kuei
Digitaria ciliaris	Nya tinnok
Echinochloa spp.	Nya khao nôk
Eclipta prostrata	Nya hom keo
Eleusine indica	Nya phak koie
Fimbristylis dichotoma	Nya nuet meo
F. miliacea	Nya khai khiad
Imperata cylindrica	Nya kha
Ipomoea aquatica	Phak bung
Ischaemum rugosum	Nya kabthoon
Portulaca oleracea	Nya en eyan, nya tha kong

Appendix I. Common names of weeds in Malaysia

Weed	Common name(s)
Aeschynomene indica	
Ageratum conyzoides	Rumput tahi-ayum, tombok jantan, sianggit
Alternanthera sessilis	Keremak, akar rumput, bayam pasir, bayam tana, kelama hijau, kerak-kerak paya, kerumak bukit paya
Amaranthus spinosus	Bayam duri
Commelina diffusa	Rumput aur, Pulau aur, Rumput kukupu, tapak eti
Cynodon dactylon	Rumput minyak, crintingan
Cyperus iria	Rumput menderong
C. rotundus	Rumput haliya hitan, Rumput cina lari
Digitaria ciliaris	Rumput jejari berbulu, cakar ayam
Echinochloa colona	Padi burung, Rumput kusa-kusa
E. crus-galli	Rumput sambau
Eclipta prostrata	Aring-aring
Eichhornia crassipes	Keladi bunting, bunga jamban
Eleusine indica	Rumput kekuasa, godong ula, rumput sambari
F. miliacea	Rumput kuran, rumput tahi kerabau, rumput keladi
Imperata cylindrica	Lalang
Ipomoea aquatica	Kangkong
Ischaemum rugosum	Rumput ekor cawi, Rumput colok chine, Rumput kemarau
Leersia hexandra	Rumput lidah rimau, Rumput benta
Leptochloa chinensis	Rumput ekor tebu
Ludwigia adscendens	Tinggir bangan, tinggir bangau, inai pasir, katang-katang, telinga bangan
Marsilea minuta	Tapak itek, semanggi
Monochoria vaginalis	Rumput air, kelayar, chacha layar, keladi agas, encheng padi
Oryza sativa	Padi angin
Panicum repens	Kerunung padi, telur ikan, Rumput kerbau
Paspalum scrobiculatum	Rumput tulong sentadok, Rumput hijau, Rumput patah siku
Pistia stratiotes	Kiambang besar
Portulaca oleracea	Gelang pasir, segan
Scirpus juncoides	Kambmantjik, rumput bulat, rumput purun tikus
Sphenoclea zeylanica	Cempedak air

Appendix J. Common names of weeds in Myanmar*

Weed	Common name(s)
Ageratum conyzoides	ခွေးသေးပန်း၊ ကရင်မပန်းရူ
Alternanthera sessilis	ပုဇွန်စာ
Amaranthus spinosus	ဟင်းနုနွယ်ဆူးပေါက်
Commelina benghalensis	ဝက်ကျွတ်
C. diffusa	မျှစ်ချု
Cynodon dactylon	မြေဇာမြက်၊ မြင်းစာမြက်
Cyperus difformis	မြက်မုံညှင်းအစိမ်း
C. iria	မြက်မုံညှင်းအဝါ
C. rotundus	မြက်မုံညှင်းဥနတ်
Dactyloctenium aegyptium	လေးခွမြက် ပန်းတော်နီ၊ ပန်းတော်ညို၊
Digitaria ciliaris	အင်တိုင်းမြက်ခါး လက်သဲခွမြက်
Echinochloa colona	ဝမ်းဘဲစွမြက်
E. crus-galli	ဘဲစာမြက်၊ မြက်ဘီး၊ မြက်ဦး
Eclipta prostrata	ကြိတ်မှန်
Eichhornia crassipes	ဗေဒါ
Eleusine indica	ဆင်ငိုမြက်
Fimbristylis dichotoma	မြက်ကွမ်းဘီးကြီး
F. miliacea	မြက်ကွမ်းဘီးလေး
Imperata cylindrica	ဘက်ကယ်
Ipomoea aquatica	ရေကန်ခွန်း
Leersia hexandra	ဘမန်းမြက်
Leptochloa chinensis	ဒေါင်းမြီးပုံ
Ludwigia adscendens	ရေကညွတ်
Marsilea minuta	မှိုနတို
Mimosa diplotricha	ထိကရုံးကြီး
Monochoria vaginalis	ဆတ်
Panicum repens	မြက်ကြိမ်
Pistia stratiotes	၊ရေဆလပ်
Portulaca oleracea	ဘဲပုရစ်၊ မြေပုရစ်၊ မြေ
R. cochinchinensis	မြက်ယားငယ်
Scirpus juncoides	မြက်ကလုံး၊ တလုံင်းခေါင်း
Sphenoclea zeylanica	လယ်ပဒူ
T. portulacastrum	လိပ်ရင်ဘတ်

*Weeds present were listed in Morris and Waterhouse (2001) or Myanma Agriculture Service (1996).

Appendix K. Common names of weeds in Nepal

Weed	Common name(s)
Aeschynomene indica	armale, Sola, shola, शोला
Ageratum conyzoides	ganne, elamey
Alternanthera sessilis	Bhirungi, भिरुन्गी
Amaranthus spinosus	ludey jhar kadey
Commelina spp.	Kane, kane jhar, कने
Cynodon dactylon	dubo
Cyperus spp.	chhatre, Motha मोठा, Chow, Guchen, Ochumani
Digitaria ciliaris	chittrey banso
Echinochloa colona	Saamaa ghans, सामा घन्स
E. crus-galli	Tunde saamaa, टुन्दे सामा
Eclipta prostrata	Bhangraiyo
Eichhornia crassipes	Jal kumbhi, जल कुम्भी
Eleusine indica	Kode banso, कोदे बन्सो
Fimbristylis miliacea	Zhiruwa, झीरुव
Imperata cylindrica	khar, sirru
Ipomoea aquatica	Karaiya, करैय
Ischaemum rugosum	mandilo
Monochoria vaginalis	milo jaluke, pirulay, मिलो जलुके
Paspalum dilitatum	Banso, बन्सो
P. distichum	Ghunde banso, घुन्दे बन्सो
P. scrobiculatum	kodu, kondo, कोदु
Pistia stratiotes	Khumbhika, खुम्भीक
Polygonum hydropiper	Pire, पिरे
Portulaca oleracea	phagpa jakpo
Scirpus juncoides	swirey

Appendix L. Common names of weeds in Pakistan

Weed	Common name(s)
Cynodon dactylon	Khabbal, talla
Cyperus iria	Khana
C. rotundus	Notha
Eichhornia crassipes	gulbakauli, kalali
Panicum repens	Chimacara, surpurrcharela
Portulaca oleracea	kulfa, lunak

Appendix M. Common names of weeds in the Philippines*

Weed	Common name(s)
Aeschynomene indica	Makahiyang lalaki
Ageratum conyzoides	Bulak-manok, damong mabaho, damong-pallas
Alternanthera sessilis	Bonga-bonga, tagtagu
Amaranthus spinosus	Bayambang, kulitis, oray, uray
Commelina benghalensis	Alikbangon, likbangan, ulikbangon
C. diffusa	Tari-tari
Cynodon dactylon	Kawad-kawad, kawad-kawaran, kotati, malit
Cyperus difformis	Ballayang, ubod-ubod
C. iria	Payung-payung, taga-taga
C. rotundus	Mutha
Dactyloctenium aegyptium	Damong balang, krus-krusan
Digitaria ciliaris	Baludgangan, halos
Echinochloa colona	Bulang, gutad, pulang-pwet, tiribuhan
E. crus-galli	Bayakibok
E. glabrescens	Daua, daua-dauahan
Eclipta prostrata	Higis-manok
Eleusine indica	Bakis-bakisan, kabit-kabit, parag-is, sambali
Fimbristylis dichotoma	Tikog-tikog (Vis)
F. miliacea	Gumi, taulat
Imperata cylindrica	Kogon
Ipomoea aquatica	Kangkong
Ischaemum rugosum	Tiritrigo, trigo-trigohan
Leersia hexandra	Barit
Leptochloa chinensis	Palay-maya
Ludwigia adscendens	Kangkong dapa
L. octovalvis	Balakbak, malapako
Marsilea minuta	Kaya-kayapuan
Mimosa diplotricha	Aroma, kamit-kabag, makahiya
Monochoria vaginalis	Biga-bigaan, gabing-uwak, kalabuwa
Oryza sativa (weedy rice)	Damong palay
Panicum repens	Luya-luyahan
Paspalum distichum	Luya-luyang dagat, malit-kalabaw, pagetpet
P. scrobiculatum	Sabung-sabungan
Pistia stratiotes	Kiapo
Portulaca oleracea	Olasiman
Rottboellia cochinchinensis	Agiñgay
Scirpus juncoides	Bitubituinan
S. maritimus	Apulid
Sphenoclea zeylanica	Dilang-butiki, silisilihan
Trianthema portulacastrum	Toston

*Weeds present were listed in Moody et al (1984). Only Filipino (Tagalog) names were given, except as noted. Vis = Visayas.

Appendix N. Common names of weeds in Sri Lanka

Weed	Common name(s)
Commelina benghalensis	diya-meneriya
Cynodon dactylon	Aruham-pul, buha
Dactyloctenium aegyptium	Puta tana
Digitaria ciliaris	Arisi pul, guru tana
Echinochloa colona	Adipul, gira-tana
E. crus-galli	Kutirai-val-pul, martu
Eichhornia crassipes	Diya manel, diya kehel, habara, habarala, sabara, yapura
F. miliacea	muduhalpan
Imperata cylindrica	Iluk, inanka-pilu
Ipomoea aquatica	Kankun
Ischaemum rugosum	Kudukedu
Panicum repens	Etora

Appendix O. Common names of weeds in Thailand*

Weed	Common name(s)
Aeschynomene aspera	โสนคางคก
A. indica	โสนหางไก่
Ageratum conyzoides	สาบแร้งสาบกา
Alternanthera sessilis	ผักโป่งนา
Amaranthus spinosus	ผักโขมหนาม
Commelina benghalensis	ผักปราบ
C. diffusa	ผักปราบใบเรียว
Cynodon dactylon	หญ้าแพรก
Cyperus difformis	กกขนาก
C. iria	กกทราย
C. rotundus	แห้วหมู
Dactyloctenium aegyptium	หญ้าปากควาย
Digitaria ciliaris	หญ้าตีนนก
Echinochloa colona	หญ้านกสีชมพู
E. crus-galli	หญ้าข้าวนก
Echinochloa glabrescens	หญ้าปล้องละมาน
Eclipta prostrata	กะเม็ง
Eichhornia crassipes	ผักตบชวา
Eleusine indica	หญ้าตีนกา
Fimbristylis dichotoma	หญ้านิ้วหนู
F. miliacea	หญ้าหนวดปลาดุก
Imperata cylindrica	หญ้าคา
Ipomoea aquatica	ผักบุ้ง
Ischaemum rugosum	หญ้าแดง
Leersia hexandra	หญ้าไซ
Leptochloa chinensis	หญ้าดอกขาว
Ludwigia adscendens	เทียนนา
L. octovalvis	เทียนน้ำ
Marsilea spp.	ผักแว่น
Mimosa diplotricha	ไมยราบเลื้อย
Monochoria vaginalis	ขาเขียด
Panicum repens	หญ้าชันกาด
Paspalum distichum	หญ้าชะกาดน้ำเค็ม
P. scrobiculatum	หญ้าปล้องหิน
Pistia stratiotes	จอก
Polygonum hydropiper	ผักไผ่น้ำ
Portulaca oleracea	ผักเบี้ยใหญ่
Rottboellia cochinchinensis	หญ้าถอดปล้อง, หญ้าไซยง่
Scirpus juncoides	แห้วทรงกระเทียมเล็ก
Sphenoclea zeylanica	ผักปอดนา
Trianthema portulacastrum	ผักเบี้ยหิน

*Weeds present were listed in Radanachaless and Maxwell (1992).

Appendix P. Common names of weeds in Vietnam*

Weed	Common name(s)
Aeschynomene aspera	Điền ma nhám
A. indica	Điền ma án, Rứt nước
Ageratum conyzoides	Cỏ cứt heo
Alternanthera sessilis	Diếc không cuống
Amaranthus spinosus	Dền gai
Commelina benghalensis	Đầu riều, Trai an
C. diffusa	Rau trai, Thài lài trắng
Cynodon dactylon	Cỏ chỉ, Cỏ ông, Cỏ ga
Cyperus difformis	Cỏ cháo, Cỏ tò ty
C. iria	Lác rận, Cú rận
C. rotundus	Cỏ cu, Hương phụ, Cỏ gau
Dactyloctenium aegyptium	Cỏ chân gà, Cỏ chân vịt
Digitaria ciliaris	Túc hình rìa, Túc hình nho, Túc hình leo
Echinochloa colona	Cỏ lồng vực cạn, Cỏ nước mặn
E. crus-galli	Cỏ lồng vực, Cỏ gạo, Cỏ mỹ, gai-hao-muong, lồng-vực
Eclipta prostrata	Cỏ mực
Eichhornia crassipes	Lục bình, Bèo tây
Eleusine indica	Mần trầu, Ngưu càn
Fimbristylis dichotoma	Mao thư lướng phân, Cỏ quăng lông
F. miliacea	Cỏ chác, Cỏ tò te, Cỏ chat
Imperata cylindrica	Cỏ tranh, Bạch mao
Ipomoea aquatica	Rau muống
Ischaemum rugosum	Cỏ mom, Cỏ mo van
Leersia hexandra	Cỏ noi, Cỏ bac
Leptochloa chinensis	Đuôi phụng, Mảnh hòa Trung quốc
Ludwigia adscendens	Rau dừa nước
L. octovalvis	Rau mương đứng
Marsilea minuta	Rau bo nho
Mimosa diplotricha	Trinh nữ móc
Monochoria vaginalis	Rau mác bao, Cui dia, Rac mác lá thon
Panicum repens	Cỏ cua-ga, Cỏ ong
Paspalum distichum	San nước
P. scrobiculatum	Cỏ dang, san tron, trung ech
Pistia stratiotes	Bèo cái, Bèo tai tướng
Polygonum hydropiper	Nghể răm
Portulaca oleracea	Rau sam, Sam
Rottboellia cochinchinensis	Cỏ day xanh, Cỏ mia, myet-yar
Scirpus juncoides	Hoan-thao hen
Sphenoclea zeylanica	Cỏ xà bông
Trianthema portulacastrum	Cỏ tam khoi

*Most weeds present were listed in Koo et al (2000).

Appendix Q. Weed species (by Bayer code) reported in Asian nations.

Bayer code	BAN	BHU	CAM	CHN	IDO	IND	KOR	JAP	LAO	MAL	MYA	NEP	PAK	PHI	SRI	THA	VIE	Sum
AESAS	●		●		●	●					●	●		●	●	●	●	10
AESIN	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	16
AGECO	●	●	●	●	●	●			●	●	●	●		●	●	●	●	14
ALRSE	●	●	●	●	●	●			●	●	●	●		●	●	●	●	14
AMASP	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	15
COMBE	●	●			●	●		●	●	●	●	●	●	●	●	●	●	14
COMDI	●	●		●	●	●	●		●	●	●	●		●	●	●	●	14
CYNDA	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	16
CYPDI	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	17
CYPIR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	17
CYPRO	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	16
DTTAE	●				●	●			●	●	●	●	●	●	●	●	●	12
DIGSP	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	16
ECHCO	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	16
ECHCG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	17
ECHGL	●	●	●		●	●			●	●		●	●	●	●	●	●	13
ECLAL	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	17
EICCR	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	16
ELEIN	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	17
FIMDI	●			●	●	●	●		●	●	●	●	●	●	●	●	●	14
FIMMI	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	16

continued on next page

Appendix Q continued.

Bayer code	BAN	BHU	CAM	CHN	IDO	IND	JAP	KOR	LAO	MAL	MYA	NEP	PAK	PHI	SRI	THA	VIE	Sum
IMPCY	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	17
IPOAQ	●		●	●	●	●	●		●	●	●	●	●	●	●	●	●	15
ISCRU	●		●	●	●	●			●	●	●	●	●	●	●	●	●	14
LERHE	●		●	●	●	●			●	●	●	●	●	●	●	●	●	14
LEFCH	●		●	●	●	●	●	●	●	●	●		●	●	●	●	●	15
LUDAD	●		●	●	●	●	●		●	●	●	●		●	●	●	●	14
LUDOC	●		●		●	●	●		●	●	●	●		●	●	●	●	13
MARMI	●	●	●		●	●			●	●	●		●	●	●	●	●	13
MIMIN					●				●	●	●			●		●	●	7
MOOVA	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	17
ORYSA	●		●	●	●	●		●		●		●	●	●	●	●	●	13
PANRE	●		●	●	●	●			●	●	●	●	●	●	●	●	●	14
PASDS		●		●	●	●	●			●	●	●	●	●	●	●	●	13
PASSC	●		●	●	●	●	●		●	●	●	●	●	●	●	●	●	15
PIIST	●		●	●	●	●			●	●	●	●	●	●	●	●	●	14
POLHY	●	●		●	●	●	●	●		●		●				●		10
POROL	●	●	●	●	●	●	●	●	●	●	●		●	●		●	●	15
ROOEX					●	●			●	●	●	●	●	●		●	●	10
SCPJO	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	17
SCPMA	●		●		●	●		●	●	●	●	●	●	●	●	●	●	14
SPDZE	●		●		●	●			●	●	●	●	●	●	●	●	●	13
TRTPO			●		●	●					●	●	●	●	●	●	●	10

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