Managing soil fertility for healthy rice

For farmers it is important to know how to handle different fertilizer, to have a good and healthy rice harvest.

A unhealthy harvest has fewer live and less organic matter. Water and nutrients drain away and are almost unreachable for the roots of the crops. Rice plants grow poorly, even with adding mineral fertilizer.

Rice plants needs

You can compare growing rice plants with building a mud granary. You first have the foundation, which means that the rice builds leaves and tillers. Next the walls and roof are build, so the plant produces panicles and flowers.

The most important nutrients are nitrogen, phosphorus and potassium. Phosphorus helps the plants to grow. Potassium makes them strong and helps filling the corns. Nitrogen makes healthy and green stems and helps the soil to keep water and nutrients. Mineral fertilizer contains one or all of the three nutrients. You are able to see the ingredients on the fertilizer bag. »N« stands for nitrogen, »P« stands for phosphorus and »K« stands for potassium. The higher the number on the back, the more nutrients are included in the fertilizer. Coloured fertilizer is a mix of nutrients. Urea fertilizer only contains nitrogen and is white.

Fertilizing rice

Lowland rice often need nitrogen but has enough phosphorus and potassium. Upland rice often need nitrogen and phosphorous. Water doesn‘t dissolve phosphorus and potassium, so you can add it when you plough or puddle the field. Urea dissolves in

water. Therefore, you shouldn‘t add it to flooded fields or during rain.

Sand looses water and nutrients but clayey soil keeps them. Organic fertilizer like manure and composted plant remains, help the soil to keep water, nutrients and mineral fertilizer. Weed the field before adding mineral fertilizer, so you don‘t feed the weed. Add urea two weeks after sowing or one week after transplanting. Then add urea for two weeks, before the stems start to bulge with panicles. You can use urea a third time when the rice starts to flower. Legumes like cowpea or soya beans have nodules on their roots, which take nitrogen from the air and help the soil to be fertilized.