

Background educational lesson: The roots of legume and pulses have little spheres in which helpful microbes make natural nitrogen fertilizer to reduce need to purchase artificial fertilizer.

1. Bad practice: plant sole crop of maize wheat, rice, millet in all seasons (no legumes, no pulses)

5. Improved practice: Plant legumes or pulses (e.g. lentil) as intercrop or in next season

6. Roots of legumes/pulses have small pink spheres, inside which are invisible microbes that produce fertilizer (shown here as blue, but invisible)

Urea

4. Must purchase expensive nitrogen fertilizer

3. Sow cereal crop again

8. If sow maize, rice or wheat or millet in next season or as intercrop, the cereals take advantage of the natural legume fertilizer

Urea

7. After legume grain is harvested, the roots and leaves remain rich in fertilizer (blue) which is deposited into the soil when they decompose

9. Less need to purchase nitrogen fertilizer