CRP: Dryland Systems

Center: ICARDA

Flagship: South Asia

Action Site: Chakwal (Pakistan)

Activity title: Evaluation, demonstration and dissemination of fodder and feed intervention.

Short Title: Evaluation, demonstration and dissemination of fodder and feed intervention

Activity leader: Dr. Abdul Majid

Key partner(s): Fodder Program CSI, NARC, Islamabad, Pakistan

Progress report Summary: 12 months (January-December, 2015)

Objective: Challenges, outputs achievements, outcomes and progress toward impact

Livestock is an important component of farming system and it is closely associated with fodder crop production of targeted areas at Chakwal site. The existing winter and summer fodder varieties in targeted areas are low yielding; thus, they do not adequately cover fodder scarcity periods. Improved fodder variety is the most desirable input for improving fodder yield and consequently increasing the net income of livestock holders. Various studies in Pakistan reported that improved varieties of oat produce three-fold green fodder (60-80 tons per hectare) and can feed double the number of animals per unit area compared to the traditional fodder crop varieties. Thus, this study was undertaken to evaluate the improved fodder varieties with local farmers varieties for their green fodder and dry matter yield at two villages (Latifal and Saghar) at chakwal district. Six validation plots of NARC-Oat versus farmer practices were planted during winter season 2014-2015. Results indicate that improved varieties with recommended practices gave 48% and 43% more green fodder yield and dry matter yield compared to farmer practices at Saghar village. At Latifal village six improved oat validation plots during winter season gave 43% and 41% higher green fodder and dry matter yield. Seed production is a major problem for mostly forage crops as most of them are harvested and fed to livestock well before seed formation, unless intentionally kept for seed. There are a scarce amount of companies which produce seed for rain fed area like chakwal. Female of targeted areas are playing vital role in fodder production and livestock sector by their feeding contribution to the live stock. Two female and two male farmers were trained on critical factors for quality seed production. To ensure the availability of improved oat variety seed to the targeted areas farmers two oat seed enterprises were established in two villages and they

produced two ton seeds of NARC-Oat variety and sold it to the farming community of these areas.

During the summer season 2015, improved maize (S-2002), millet (No. 8781) and guar (BR-99) variety were evaluated with local variety for their green fodder and dry matter yield at the farmer's field of Latifal and Sagher at chakwal site. Improved varieties of maize at both locations produced 34% and 36% more green fodder and dry matter yield. Similarly, millet No. 8781 produced 25% and 28% and guar BR-99 produced 28% and 42% more green fodder and dry matter yield compared to local varieties.

To cover the scarcity of fodder in terms of both quantity and quality during lean period from November-January maize silage technology was demonstrated to the farming community at Mail village. To create the awareness about the silage technology among the farming community brochure on maize silage technology was prepared in local language and distributed in targeted areas. Maize silage versus normal feeding was tested on three large animals of two farmers at Saghar. Feeding results showed that maize silage feeding to animals increased the cattle milk production considerably compared to normal cattle feeding. After 15 days of feeding, there was 27.6% increase in milk yield in silage feeding cattle compared to normal feeding.

The foregoing research intervention helps the farming community to get quality winter and summer fodder and cover the lean period. These activities increased fodder yield per unit area and also improve the livestock productivity. Male and female farmers were trained to contribute equally in quality seed production. They are also demonstrated in silage technology to build their capacity to produced and store surplus green fodder and get benefit in terms of availability of quality fodder during both seasons to feed their animals. The farming community learn to replace their local varieties with improved varieties by purchasing quality seed from village base seed enterprises. Maize silage technology interventions in these areas not only cover the current lean period, but it has a remarkable effect on milk production of cattle. In conclusion, all these interventions in targeted areas of Chakwal site, improves the farming community skills, increases knowledge, create awareness, stimulates business growth and strengthens the role of female community, which consequently provides and sustains their livelihoods.