

Range Management

Rangelands of Pakistan are fragile ecological resource and provide feed and shelter to animals and fruit, wood, sports hunting and eco-tourism to the human being besides conserving environment provided they are properly managed. Sustainable grazing management and rangeland resource use is a key issue of concern in most rangeland regions of Pakistan, therefore, rangeland research at PARC focuses on assessing the sustainable use of these drought prone rangelands.

RANGE MANAGEMENT

NARC

- Baseline survey of vegetation cover and composition of Pabbi Hills showed a 34% ground cover. Bermuda grass (*Cynodon dactylon*) dominated with 11.5% cover, followed by Mesquite (*Prosopis juliflora*) with 10% cover.
- Dry matter production 3.81 t.ha⁻¹ and higher sprouting rate i.e. (81%) was recorded for blue panic (*Panicum antidotale*) followed by finger grass (*Digitaria swazilandensis*) in semi arid conditions of Pabbi Range.
- A combination of 35% green panic (*Panicum maximum*) and 65% cowpeas (*Vigna unguiculata*) gave highest forage yield. Combination of green panic and inoculated cowpea produced 13% more forage as compared to combination of green panic and uninoculated cowpeas.
- At 100 cm clipping height 35% higher biomass was produced over 10 cm height in double hedgerows of Ipil ipil. Significant increase in wheat yield was observed in alleys of under hedgerows spacing (15 cm) as compared to narrow spacing (5 m).



Grass-legume mixture experimental plot at NARC

AZRC, Quetta

- Mulberry and Russian Olive plantations were carried out on micro-catchment water harvesting structures at AZRC range area for efficient utilization of rain water and production of forage for livestock.
- As a result of better rainfall distribution during the winter and spring months many new range species were observed.



Wheat crop grown in between Ipil Ipil hedgerows at NARC

- Fodder shrub plantation (*Atriplex canescens*, *A. lentiformis* and *Salsola vermiculata*) on micro-catchment water harvesting structures was established with community participation at Siddiqabad (Mastung). Shrub survival percentage was 70-80%. Native range vegetation was also improved by protecting the community range area from grazing. During winter and spring months, about

RANGE MANAGEMENT

2000 seedlings of different native and exotic species were planted at the site on natural runoff places. Community Fodder shrubs nursery was also established for demonstration and distribution of seedlings to the farmers interested in plantation on range areas.

- Harvesting of *Glycyrrhiza glabra* (Malathi) was completed. The harvesting was



A view of medicinal herb seed multiplication and demonstration plots at Farmers' Field, Quetta



Member, Animal Sciences Division, PARC (Centre) and Director General, AZRC (Right) visiting Medicinal Herb Garden

done after three years of plantation and 80 kg fresh weight of roots was obtained from an area of 9 m².

- Seeds and seedlings of different exotic medicinal herbs were provided to Women University, Quetta for establishment of medicinal herb garden for research purpose.

AZRI, Umerkot

Of 16 desert flora such as trees, shrubs and grasses species collected from live herbarium, highest seed yield of 3.0 kg/plant was obtained from *Acacia ampliceps* (Australian Babur).