

producing and marketing high quality forage through good management practices.

Returns above fertilizer costs increased as  $K_2O$  application rates increased to 60 and 120 lb/A, especially at the forage value of \$80/ton. Returns to K application were less than returns to P application, reflecting the lower yield response to K than to P.

## Summary

Annual ryegrass is utilized primarily by grazing beef and dairy animals but is also harvested as hay and silage. Mechanical harvesting of high-yielding ryegrass removes large quantities of P and K from the soil. A 4-year experiment with P and K fertilizer rates showed that high-

yielding ryegrass required about 80 lb/A of  $P_2O_5$  and 120 lb/A of  $K_2O$  to produce 90 percent of the maximum yield or about 4.5 tons/A when harvested mechanically. At that fertilization rate, the crop contained 0.23 percent P and 1.75 percent K, indicating that these levels were sufficient for the ryegrass but did not raise the low soil test P and K levels. Economic returns above fertilizer costs were maximized at or near the rates of 80 lb/A of  $P_2O_5$  and 120 lb/A of  $K_2O$  in this study. **BC**

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**TABLE 3.** Costs and returns from fertilizing annual ryegrass for forage production in Louisiana.<sup>1</sup>

Fertilizers applied, lb/A N- $P_2O_5$ - $K_2O$	Yield of dry forage, tons/A	N- $P_2O_5$ - $K_2O$ Fertilizer \$/A	Returns from forage \$/A			
			Hay @ \$80/ton		Hay @ \$60/ton	
			Total	Above fert. cost	Total	Above fert. cost
200-0-120	2.3	78	185	107	139	61
200-40-120	4.4	86	330	242	247	159
200-80-120	4.3	98	344	246	258	180
200-160-120	4.6	118	370	252	277	169
200-320-120	4.8	158	387	229	290	132
200-80-0	4.1	80	329	249	247	167
200-80-60	4.4	89	358	269	268	179
200-80-120	4.6	98	371	273	278	180

<sup>1</sup>Fertilizer costs per acre were calculated by assuming N,  $P_2O_5$  and  $K_2O$  costs to be 30, 25, and 15¢ per pound and the value of forage to be \$80 and \$60 per dry ton.

## Cover Crops, Soil Quality, and Ecosystems Conference Set for March 12-14, 1997

The Soil and Water Conservation Society (SWCS) has scheduled a conference to look at the effects of cover crop management systems on soil quality in the context of soil pedons, watersheds and associated ecosystems. The program will be March 12-14, 1997 at Sacramento, California. PPI is a co-sponsor.

The conference will provide a forum

for research scientists, farmers, agricultural advisers, product developers, and policy makers to discuss and identify possible enhancement of acceptability of such crop management systems. International community involvement is encouraged. More information is available from SWCS –

phone (515) 289-2331;

fax (515) 289-1227. **BC**