
WATER HARVESTING AND AQUACULTURE
FOR RURAL DEVELOPMENT

CHEMICAL FERTILIZERS FOR
FISH PONDS



INTERNATIONAL CENTER FOR AQUACULTURE
AND AQUATIC ENVIRONMENTS
AUBURN UNIVERSITY

INTRODUCTION

Chemical fertilizers are normally used to improve soil fertility and increase agricultural crop yields. In fish ponds they stimulate phytoplankton production which increases fish yields. They contain inert filler material mixed with three important minerals, nitrogen (N), phosphorous (as P_2O_5) and potassium (as K_2O or potash) which are needed by phytoplankton in fish ponds. A commonly available chemical fertilizer is 12-24-12. It contains 12 percent nitrogen, 24 percent phosphorous and 12 percent potassium. This equals 48% fertilizer and 52% filler material by weight. Fertilizers high in phosphorous are especially good for phytoplankton production in freshwater ponds. New freshwater ponds and salt water ponds also require nitrogen. After several years, the organic content in the mud of these ponds will increase and may provide sufficient nitrogen for phytoplankton growth. Only phosphorous may be needed for increased production in aged ponds. Table 1 lists several chemical fertilizers used in fish ponds and their compositions. For more information on fertilizer application see *Introduction to Fish Pond Fertilization and Organic Fertilizers For Fish Ponds*.

Table 1. NPK composition of several fertilizers used in fish ponds

	Percent Composition		
	(N)	(P_2O_5)	(K_2O)
Ammonium nitrate	33 - 35	0	0
Ammonium sulphate	20 - 21	0	0
Ammonium phosphate	16	20	0
Calcium nitrate	15.5	0	0
Diammonium phosphate	18	48	0
Double superphosphate	0	32 - 40	0
Muriate of potash	0	0	50 - 62
Potassium nitrate	13	0	44
Potassium sulphate	0	0	50
Sodium nitrate	16	0	0
Superphosphate	0	18 - 20	0
Triple superphosphate	0	44 - 54	0
Urea	42 - 47	0	0

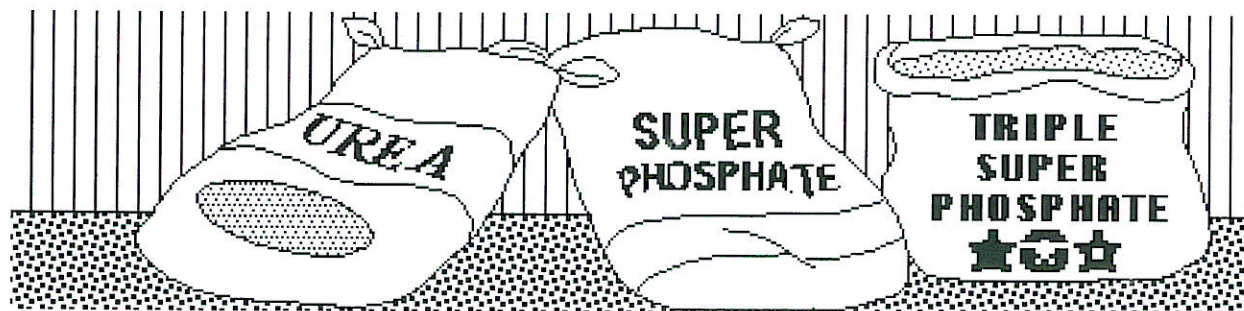


Figure 1: Sack or bagged fertilizer.