

Water Conservation in Indian Fertilizer Industry

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Table 1: Weighed Average Specific Water Consumption and Waste Water Discharge of Indian Ammonia Urea Plants

Year	All Plants		
	CU	Water Consumption	Waste Water Discharge
	%	M3/MT Urea	M3/MT Urea
1990-91	104.7	12.0	2.3
1991-92	105.0	11.7	2.2
1992-93	104.3	11.5	1.8
1993-94	102.2	11.1	1.9
1994-95	105.2	10.5	1.7
1995-96	112.3	9.9	1.5
1996-97	104.0	9.5	1.4
1997-98	112.7	8.5	1.2
1998-99	110.1	8.5	1.2
1999-00	112.5	8.0	1.1
2000-01	113.7	7.8	0.9
2001-02	109.2	7.4	0.8
2002-03	106.6	7.3	0.6
2003-04	109.5	6.6	0.4

Table 2: Weighted Average Specific Water Consumption and Waste water Discharge of 19 Plants Operating during 1990-91 and 2004-05

Year	Plants operating in 1990-91 and 2004-05		
	CU	Water Consumption	Waste Water Discharge
	%	M3/MT	M3/MT
1990-91	104.7	12.0	2.3
1991-92	105.0	11.7	2.2
1992-93	104.3	11.5	1.8
1993-94	101.4	11.2	1.9
1994-95	104.0	10.8	1.8
1995-96	110.3	10.5	1.6
1996-97	100.2	10.4	1.6
1997-98	99.5	9.4	1.5
1998-99	105.9	9.4	1.5
1999-00	107.1	9.0	1.4
2000-01	106.1	9.2	1.3
2001-02	102.1	8.6	1.2
2002-03	98.3	8.4	1.0
2003-04	101.8	7.9	0.8

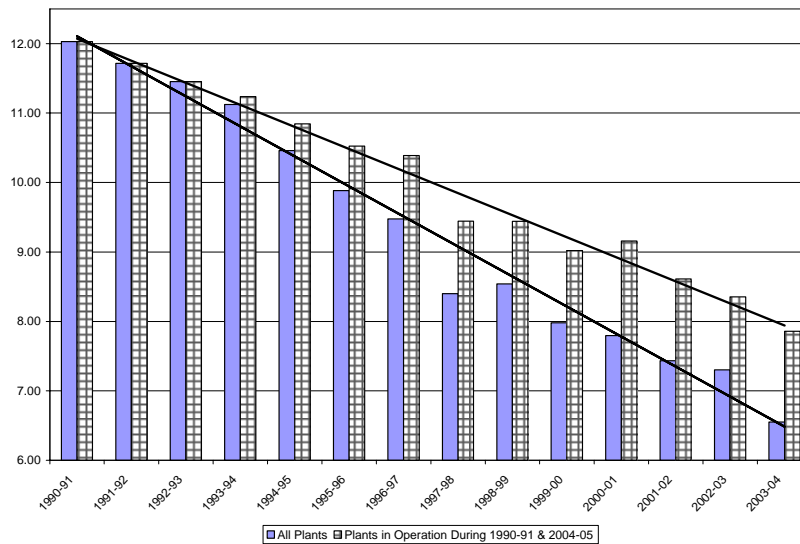


Figure 1: Improvement in Average Specific Consumption of All plants and Plants in Operation during 1990-91 to 2004-05

Table 3: Feedstock Wise Weighted Average Water Consumption of All Plants

Year	Water Consumption M3/MT of Urea		
	Gas	Naphtha	Fuel oil
1990-91	10.1	13.8	17.1
1991-92	9.7	13.3	16.3
1992-93	9.8	12.6	16.7
1993-94	9.3	12.6	16.5
1994-95	8.6	11.4	17.1
1995-96	8.3	10.5	16.8
1996-97	7.6	10.4	19.6
1997-98	6.9	9.6	16.6
1998-99	6.9	9.7	15.1
1999-00	6.8	8.8	13.5
2000-01	6.7	8.0	14.7
2001-02	6.4	7.6	13.6
2002-03	6.2	7.6	14.2
2003-04	6.1	7.3	13.0

Table 4: Feedstock Wise Weighted Average Waste Water Discharge of All Plants

Year	Waste Water Discharge M3/MT of Urea		
	Gas	Naphtha	Fuel oil
1990-91	1.4	4.6	1.6
1991-92	1.7	4.0	0.8
1992-93	1.7	2.6	0.8
1993-94	1.4	2.7	2.0
1994-95	1.3	2.1	2.7
1995-96	1.1	2.1	2.0
1996-97	1.0	2.2	1.7
1997-98	0.8	2.3	2.1
1998-99	0.8	1.6	2.0
1999-00	0.8	1.6	1.8
2000-01	0.6	1.3	2.0
2001-02	0.5	1.0	1.9
2002-03	0.5	0.6	1.7
2003-04	0.3	0.6	1.8

Table 5 : Water Consumption Standard Prescribed by the Government V/s the Actual Weighed Average Consumption by Ammonia-Urea Plants

Feedstock	CREP Standard	Weighted Average Value (2003-04)
Gas	8.0	6.1
Naphtha	10.0	7.3
Fuel Oil	15.0	13.0

Table 6: Weighted Average Specific Water Consumption and Waste Discharge of NP/NPK Fertiliser Plant

Year	Water Consumption	Waste Water Discharge
	M ³ / MT P ₂ O ₅	M ³ / MT P ₂ O ₅
1990-91	11.4	3.9
1991-92	9.2	4.0
1992-93	9.3	3.4
1993-94	7.9	3.1
1994-95	7.9	2.7
1995-96	7.9	2.8
1996-97	7.8	2.7
1997-98	6.5	1.8
1998-99	6.9	2.3
1999-00	5.7	1.3
2000-01	5.3	1.0
2001-02	4.1	0.4
2002-03	4.1	0.3
2003-04	4.1	0.4

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THANK YOU