Comparison of the effectiveness of methods and products tested on *D. geminata* and their rank according to operational suitability for compliance with Biosecurity New Zealand's Check Clean Dry public awareness campaign to reduce the spread of the alga.[1]

From Table 4, p 62-63 in: Kilroy, C., Lagerstedt, A., Davey, A., Robinson, K. (2006). Studies on the survivability of the invasive diatom *Didymosphenia geminata* under a range of environmental and chemical conditions. NIWA Client Report CHC2006-116. For Biosecurity New Zealand. 110 p. Revised May 2007.

Method or product, with units[1]	Typical price and package size	Level or concentration	1. Time to 100% mortality (minutes, unless stated)	2. Price per litre of solution for 100% mortality[2]	3. Availability[2]	4. Irritant to skin / throat / etc.[3]	5. Corrosive to metals, rubber, etc.[3]	6. Toxicity to other organisms[3]	7. Biodegradability[3]	Rank[4]
Drying[5]	N/A	< 83% moisture	Varies; ≥ 48 h	N/A	N/A	N/A	N/A	N/A	N/A	**3**
Heat (hot water)	N/A	45 °C 60 °C	20 1	N/A	N/A	medium medium	N/A	N/A	N/A	**1** **2**
Freezing	N/A	-2 to -15 °C	Need to freeze solid	N/A	N/A	N/A	N/A	N/A	N/A	**1**
Seawater	N/A-	50 (~1.6% w/v NaCl) 100 (~3.1% w/v NaCl)	> 30 days 4 h	N/A	N/A	N/A	medium	N/A	N/A	**3**
Salt (NaCl) (% v/v)	$2.00 / kg	2 (~4% w/v NaCl) 5 (~10% w/v NaCl)	10 1	8 ¢ 20 ¢	supermarket	low	medium	N/A	N/A	**7** **8**
pH (hydrochloric acid) pH (lime @ 1000 mg / l) pH (lime @ 400 mg / l)	-	1 11.9 10.8	<5 80 24 h	-	-	-	-	-	-	**-**
Sodium percarbonate	$120 / 25 kg	0.1 2	1000 100	0.5 ¢ 24 ¢	specialist	medium	high	low	N/A	**6** **13**
Napisan (% v/v)	$6.68 / kg	0.5 5	1000 1	3.4 ¢ 33.5 ¢	supermarket	low	medium	medium	high	**7** **11**
Sodium dodecyl sulphate (% w/v)	$81.00 / 500 g	0.1 0.5 1	1000 100 1	16.2 ¢ $1.62	specialist	medium	low	low	high	**9** **14** **12**
Household bleach (% v/v c/ ≥ 35 g/L NaHCl)	$~2 / litre	0.5 1 2	> 1000 (not effective) 10 1	- 2 ¢ 4 ¢	supermarket	- low? medium	high	high	N/A	**-** **6** **6**
303 Clearall (quat mixture) (% v/v)	$83.31 / 5 litres	1 1.5	10 1	16.7 ¢ 25 ¢	specialist	medium	medium	medium	medium	**10** **12**
Sodium metabisulphite ('000 ppm SO_2)	?	50 100	1000 100	-	specialist	? ?	medium	medium	N/A	**-**
Ethanol (% v/v)[6]	?	20 50 70	1000 100 10	-	specialist[6]	-	high	low	high	**-**
Citrus based cleaner (% v/v)[7]	$80.50 / litre[7]	2 5 10 100	1000 100 10 1	$1.61 $4.25 $8.50[7]	mail order	low	low	low?	High?	**18** **16** **15** **15**

BEE all purpose cleaner (% v/v)	$6.00 / 500 ml	2	1000	24 ¢	supermarket	low	low	medium	High?	**12**
Simple Green (% v/v)	$12.68 / litre	2 50	1000 1	25 ¢ $6.34	supermarket	low	medium	medium	medium?	**14** **14**
Down-to-Earth dishwashing liquid (% v/v)	3.49 / litre	0.1 1 2 5	1000 100 10 1	0.4 ¢ 17.5 ¢	supermarket	low	low	medium	medium?	**4** **5** **6** **6**
Palmolive dishwashing liquid (% v/v)	$3.81 / 900 ml	0.5 2 5	1000 10 1	2.1 ¢ 8.4 ¢ 21 ¢	supermarket	low	low	medium	high	**5** **6** **7**
Sunlight dishwashing liquid (% v/v)	$3.21 / 900 ml	0.1 5	1000 1	0.4 ¢ 17.8 ¢	supermarket	low	low	medium	high	**4** **6**
Virkon[8] (% w/v)	$7.00 / 50 g	1	1	$1.40	specialist	high?	medium	medium	Low?	**14**
Uncle Jack's (3% benzalkonium chloride) (% v/v)[8]	$10 / litre	0.1 4 (soak) 100 (spray)[9]	1000 1 1	1 ¢ 40 ¢ $10.00	specialist	medium	medium	medium	high	**7** **13** **17**
Snot-off (% v/v)[8]	$25.00 / 500 ml	0.1	1	5 ¢	specialist	medium	low	medium	Low	**7**
Firetrol (fire retardant) (% v/v)[8]	N/A	6	2	-	-	-	-	-	-	**-**
Hydroblender soap (% w/v)[8]	N/A	0.03	< 36 h	-	-	-	-	-	-	**-**
Fire suppressant foam (% v/v)[8]	N/A	0.3	< 12 h	-	-	-	-	-	-	**-**

[1] All products were tested in the temperatures range 5 – 9 °C. Summary results from methods and products tested in previous trials are included for comparison (see section 4.5.2 for more details).
[2] Assessments of price and availability are based on the experimenter's findings at one place (Christchurch) and time (mid 2006), and therefore may vary for other locations and times.
[3] Relative qualitative assessments of irritation, corrosiveness, non-target toxicity and biodegradability are based on Material Safety Data Sheets (see Appendix 4) and comprehensive knowledge by review experts of the scientific literature in algal toxicology and industrial detergent chemistry.
[4] Ranking system**:** rank scores were applied to columns 1 to 7, with lowest scores applied to favourable properties, e.g. fastest time to mortality, lowest relative price, easiest availability, etc. The final rank is taken from the sum of the scores for products that have complete information in the columns numbered 1 to 7. Where the criterion was inapplicable to a method (signified by N/A), the lowest score was applied. A question mark after a relative assessment implies a "best guess". Ranking criteria are discussed in Section 4.1. A dash (-) means inappropriate for ranking.
[5] Effective drying times will vary due to the properties of the risk good (density, porosity, 3-D structure) and ambient conditions (temperature, light, humidity). A precautionary recommendation is that items must be completely dry for at least 48 hours before they can be safely used in another waterway; e.g., if an item takes five days to dry, seven days must elapse before the item can be safely used.
[6] A special license is required to purchase pure ethanol.
[7] Much lower prices apply when purchased in bulk.
[8] Tested by NIWA in previous independent trials.
[9] Spraying is NOT recommended for decontaminating risk goods which are porous or absorbent.
NOTES: A. The rankings are based on the criteria listed in Section 4.1 and it is recognised that not all methods will be practical in all situations. Our recommendation is to look for methods that are practical for the situation, with the best ranking. Regardless of rank, all methods are effective provided that the specified contact times and concentrations (if applicable) are used.
B. Contact times and concentrations apply to situations where **all** of the potentially contaminated material (interior as well as exterior) is in **direct contact** with the decontamination agent for the contact time. Such contact may not be easily achieved for absorbent materials (felt soles, foam) and therefore soaking for prolonged times will be necessary. Refer to Sections 5 and 6 for further discussion.