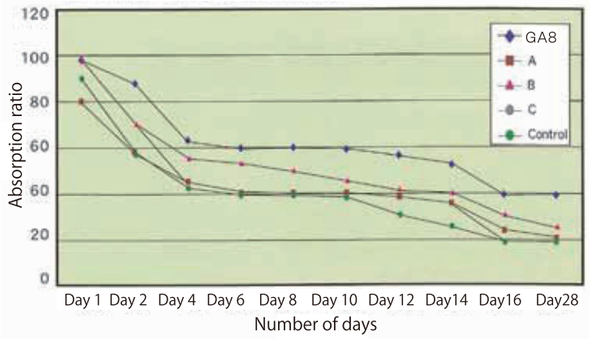
Table 1 Physical and physiochemical properties of the soil sample

Item	Measured value
1 Water content (%)	1.10
2 Size classification (%) Sand	98.40
Salt	1.20
Clay	0.40
3 Three-phase distribution (%) Gaseous	46.50
Liquid	1.10
Solid	52.40
4 Actual volume (ml)	53.50
5 ph(H20)	7.40
(KC1)	6.00
6 Electric conductivity (ms/cm)	0.03
7 Total carbon (%)	0.04
8 Total nitrogen (%)	0.01
9 Cation exchange capacity (me/100 g dry soil)	7.00
10 Exchangeable cations (me/100 g dry soil)K^+	0.30
Ca^{2+}	0.30
Mg^{2+}	9.90
Na^+	1.60
11 Phosphates (me/100 g dry soil)	5.10
12 Phosphate absorption coefficient (P205 me/100 g dry soil)	108.00
13 Water soluble anions (%)	0.02

Investigation into water absorption capacity of water retention agent

Each sand (made in Kisarazu, refer to Table 1) and the water retention agent A were put into a 1/5000a Wagner pot, with a mixing ration of 0, 0.1, 0.5, and 1.0% (wt/v%), and B, C and GA8 were added to make the mixing ration 0.5%, and then all phases were mixed and 300 ml of tap water was added in drops. After that, the weight of the pot was measured at intervals and an evaporation curve was plotted.

Fig. 1 Change in the 300 ml of absorbed (in drops) water with time



Amount of evaporation against time

The changes with time of the 300 ml of tap water that was added in drops is shown in Fig. 1.
The difference is most noticeable in the samples which have the most water added.
A and C have almost the same evaporation curve, and GA8 maintains a high level from start to finish.
B has a higher value for those with higher mixing ratios.

GA8 USAGE AMOUNTS

Purpose	Amount to be used	How to use
Treating large areas such as when planting grass or seedbeds for vegetables and flowers.	70–100 g (150–200 g/m^2 for sand)	Spray over the entire surface, and plough at a depth of 10–15 cm. Irrigate sufficiently after treating the surface.
Making mixed soil for pots and planters	・3 kg/ m^3 (Ex. 3 g/15 cm pot) ・12 g/4 ℓ container ・60 g/20 ℓ container	Use after sufficiently mixing GA8 with the soil. When using in small containers, 0.3% of the soil amount is standard.
Planting trees (saplings, shrubs, trees)	Please use the following as standard.	Shake 1/4 into the planting hole, mix the remaining 3/4 with the soil and fill in the hole.

	Standard(m)	Volume of soil(m^3)	GA8(g)
Shrubs	H=0.5	0.02	60
Low trees	H=2.5	0.08	240
High trees	C=0.2	0.33	990
High trees	C=0.3	0.55	1,650
High trees	C=0.4	0.94	2,820

IMPORTER AND DISTRIBUTOR

SHIMIZU Co. Ltd.,
Environment Division
2-12-5 Chuo, Ueda-machi,
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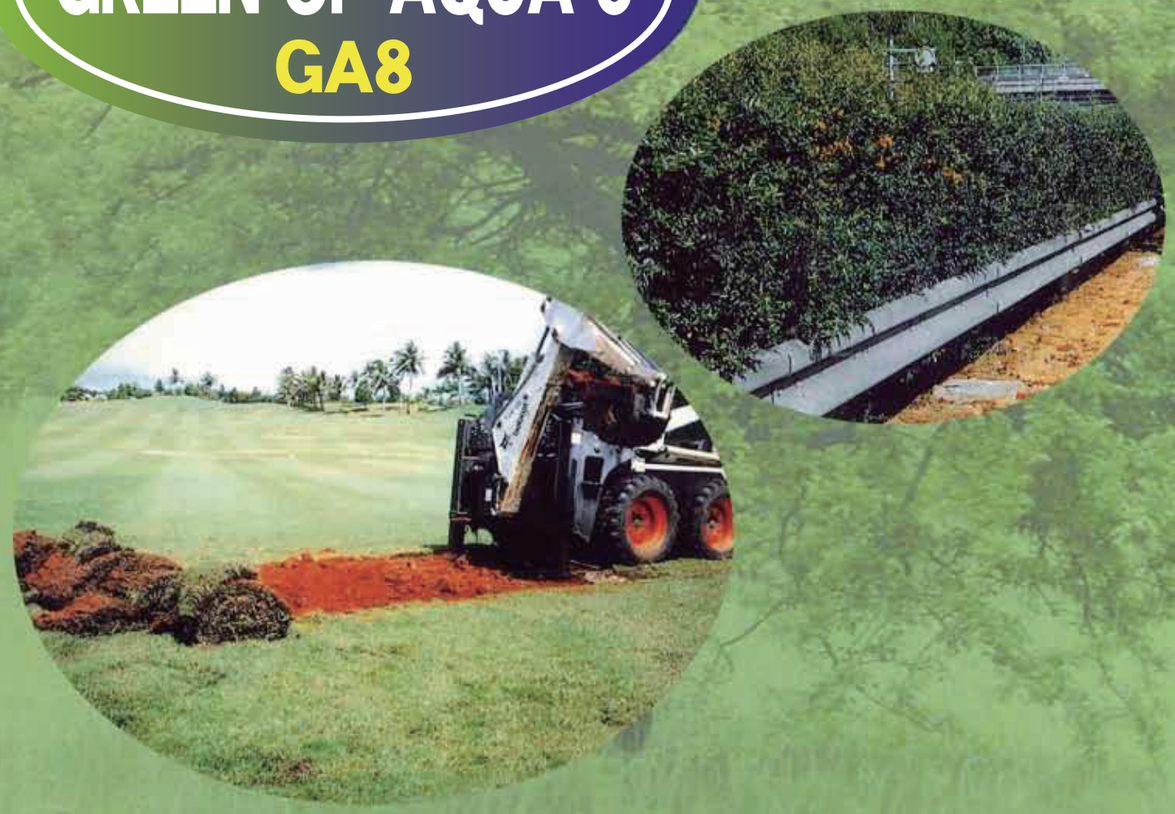
GA8 SUPPLIES THE WATER AND NUTRIENTS THAT ARE NEEDED FOR THE GERMINATION AND CULTIVATION OF EVERY PLANTS WHEN TYEY ARE NEEDED, AND PROTECTS THEM FROM DROUGHTS.

Trademark registration

GREEN OF AQUA 8
GA8



REDUCE WATERING FREQUENCY AND COST INVOLVED IN WATERING IS REDUCED BY 50% OR MORE.IT HAS A GREAT EFFECT ON THE CULTIVATION OF VEGETATION.

GREEN OF AQUA 8
GA8

8 BENEFFITS

CAPACITY TO ABSORB APPROXIMATELY 40 TIMES ITS WEIGHT OF WATER
The water absorption speed of GA8 is so slowly, so that any plants don't need more water, and have a high efficiency.

GA8's water absorption ratio with time

ABSORBS NUTRIENTS AT THE SAME TIME
GA8 will absorb and store the nutrients from fertilizers, etc. at the same time as it absorbs water.
GA8 will supply them when needed by every plants, and promotes growth and cultivation.

LONG-TIME WATER RETENTION
Soil compaction is reduced and aerification maintained, GA8 can maintain its water retention properties for 5 years or longer.

EFFICIENCY AND THE COST SAVEING
By eliminating the necessity for irrigation and frequent addition of fertilizer, it GA8 is possible to reduce the total cost.

SAFETY
GA8 is harmless for people and vegetation. GA8 is decomposed in the soil by microorganisms.
GA8 have oral toxicity (LD50, mice) of more than 2,000 mg/kg, and its safety has been confirmed by a negative result in a mutagenicity test (Ames test with mice).

RESISTANT TO SALT
GA8 are not decomposed by the salts contained in fertilizers, and maitain the self water retention properties for a long time.

WIDE TEMPERATURE- AND pH-RANGE
GA8 have the wide range of temperatures (-26°C-70°C) and the wide range of pH (4.5-9.5).

PERLITE MICROGRANULE
This accelerates agglomerations soil, and prevents root rot. It is extremely nice for effective microorganism to live.

GA8 ABSORB WATER,AND THEN RELEASES IT WHEN THE SOIL IS DRY. THIS IS THE MECHANISM OF GA8.

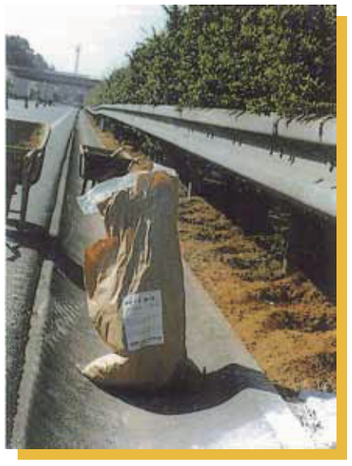
The GA8 particles absorb the water in the soil that would normally be Lost due to evaporation. Each of these particles stores approximately 40 times its weight of water and nutrients. This is exactly the water storage tank. in the soil. When no rain, GA8 will release the water and nutrients stored in the water tank that's in the soil. So, GA8 will supply an adequate amount of moisture and nutrients for the roots of the plant always.
GA8 functions as a buffer for extreme temperature changes, and improves the soil's breathability and permeability preventing soil consolidation, and thereby maintains the optimum soil environment for growing health roots.

GA8 IS THE ENVIRONMENTALLY FRIENDLY DEFINITELY, SO YOU CAN USE IN VARIOUS FIELDS.

GREEN AREAS AND PARKS
As well as being very effective for plants cultivation and maintaining water retention during greenery construction work such as green areas and shrubbery in the grounds of companies and factories, and parks, trees along streets and large planters managed by local authorities, GA8 could also reduce the cost of working for watering and maintenance costs.


Fukushima Power Plant green belt, Tohoku Electric Power

GARDENING AND FLOWER SHOPS
By using it in potted plants, planters and hanging baskets, etc. the number of watering times can be reduced, and there is no need to worry about plants dyeing because you forgot to water them. Leased plants can be kept green for longer. Also, trees take root better when transplanted if GA8 is used.


Near the Chiyoda interchange, Joban Expressway

PLAYING FIELDS
The grass in playing fields such as soccer pitches and baseball grounds is subject to harsh conditions. GA8 maintains a balance of the air, water and solids necessary for growing strong roots, and promotes the healthy spreading of roots. GA8 also the soil's breathability and permeability. There is no need to worry about droughts and root rot caused by high temperatures. Recently, GA8 has also been gathering attention as a buffer and anti-scattering agent for school yards due to its water retention and elasticity.

GOLF COURSES
Sufficient watering and soil with good drainage is necessary for golf fairways and greens, which must always be kept green.
While this requires frequent watering, the useing of GA8 can reduce the number of watering times and reduce the cost while cultivating the grass.

AGRICULTURAL WORK
In cases where high-level control is necessary such as when cultivating seedlings and house cultivation, soil hardening can be prevented and cultivation can be promoted by improving the breathability of the soil. Frequent watering can even be eliminated with soil that has poor water retention.
It is even more effective when used together with fertilizer.

HIGH-PERFORMANCE SLOPE GREENING SYSTEM(RAP SYSTEM)
In order to use a lot of recycled materials (Recycle), and to achieve soil activation microorganisms (Activator), and greening in the early- to mid-stage,
The use of GA8(Polymer) could create a high-performance man-made soil. This effect, you can have of soil than were possible with the conventional slope face spray method, and reduce costs.


Spraying work in Kasama City, Ibaraki Prefecture