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Natural Farming: Oriental Herbal Nutrient

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Oriental Herbal Nutrient (OHN), a fermented extract of herbs, is used in Natural Farming to provide plants and soil microorganisms with micro-nutrients, which may optimize their resilience to environmental stresses (wind, heat, drought, etc.). This fact sheet will detail the production and use of OHN in Natural Farming.

What Is OHN?

OHN is a mixture of edible, aromatic herbs extracted with alcohol and fermented with brown sugar. It is used to discourage the growth of anaerobic, potentially pathogenic microbes and encourage beneficial aerobic microbes in the soil and on plants. Herbs long recognized by many ancient cultures as having such prebiotic properties include fresh ginger root (*Zingiber officinale*), turmeric root (*Curcuma longa),* garlic cloves (*Allium sativum*), the bark of *Angelica acutiloba*, licorice root (*Glycyrrhiza uralensis*), and cinnamon bark (*Cinnamomum* sp.) (Chow 2002, Sarker and Nahar 2004, Castleman. 2010, Naz et al. 2010, Jayaprakasha and Rao 2011, Maekawa et al. 2013, Ming and Yin 2013, Yadav et al. 2013). These herbs are used in the creation of OHN.

How Is OHN Made?

OHN consists of five herbs (Fig. 1) extracted with liquor and allowed to ferment separately with the addition of brown sugar. It is the most time-consuming Natural Farming input to produce since it must be stirred daily, and its ingredients can be costly unless bulk-ordered.

Fresh ginger and turmeric root and garlic cloves are readily available; however, dehydrated forms can also be used with a slightly different preparation. The remaining herbs, licorice root, cinnamon bark, and angelica bark, are commonly available in dried or dehydrated forms, which are reconstituted during preparation. Each herb is prepared separately; then the preparations are combined to produce OHN.

A. ***Preparation of <u>Fresh</u> Herb Extracts*** (when using fresh ginger or turmeric root and garlic cloves)

1. Slice or crush fresh ginger OR turmeric root, weigh, and place in a clean glass jar to fill 2/3 full. Slice or crush garlic cloves (Fig. 2), weigh, and place in another clean glass jar.

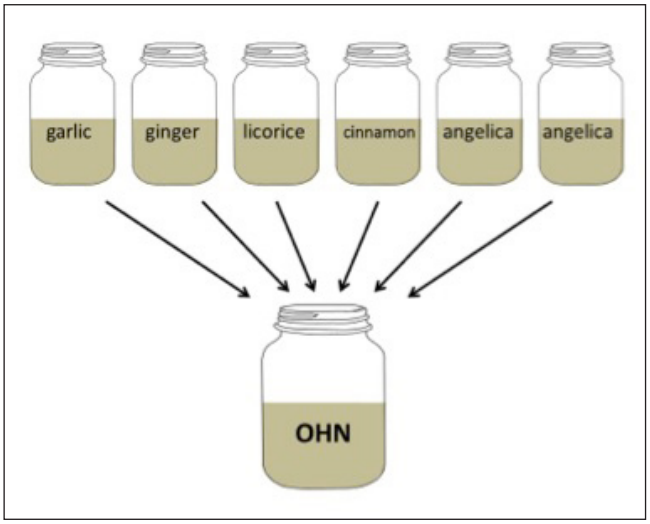

Figure 1. Oriental Herbal Nutrient (OHN) is comprised of several herbal extracts: 1 part garlic: 1 part ginger or turmeric: 1 part licorice: 1 part cinnamon: 2 parts angelica)

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2. Add an equal amount of brown sugar by weight to each jar. Cover the jars with muslin or a paper towel and secure with a rubber band or threaded-ring portion of a Mason jar (see Fig. 5), and let sit for 5 to 7 days at room temperature out of direct sunlight.
3. Fill each jar with vodka (or other liquor that is 40% proof).
4. Replace the jar's cover. Let sit at room temperature, stirring clockwise with a wooden spoon every morning for 14 days.
5. Strain 1/3 of the liquid from each jar into separate, labeled glass jars ("Ginger OR Turmeric Extract" and "Garlic Extract," respectively).
6. Repeat Steps 3 through 5, adding to the respective extract jars.
7. This extraction process (Steps 3 through 6) can be repeated up to 5 times before discarding the herb, brown sugar, and liquor mixtures (which can be composted or made into tea).

B. ***Preparation of Dehydrated Herb Extracts*** (when using dehydrated or dried angelica bark, licorice root, and cinnamon bark; also if using dehydrated or dried ginger or turmeric and garlic)

1. Chop each dehydrated herb into ½" cubes (Fig. 3). Using a SEPARATE jar for each herb, fill a clean glass jar 1/3 full (Fig. 4). Prepare TWO jars of angelica.
2. Add rice wine or beer to bring the contents of each jar to ½ full. Let sit at room temperature for 2 days to allow the herbs to rehydrate.
3. Add brown sugar to bring the contents of each jar to 2/3 full. Cover the jars with muslin or a paper towel and secure with a rubber band or threaded ring portion of a Mason jar, and let sit for 5 to 7 days at room temperature out of direct sunlight.
4. Add vodka (or other liquor that is 40% proof) to fill the jar completely (Fig. 5). Replace the cover and let sit at room temperature, stirring clockwise with a wooden spoon every morning for 14 days.
5. Strain 1/3 of the liquid from each jar and store each extract into separate labeled jars (for example, "Licorice Extract," "Cinnamon Extract," and two "Angelica Extract" jars).
6. Repeat Steps 4 through 5, adding to the respective extract jars.
7. This extraction process (Steps 4 through 6) can be repeated up to 5 times before discarding the

Figure 2. Chop or crush fresh garlic cloves to prepare their extract.

Figure 3. Dehydrated licorice root must be cut into ½" cubes prior to preparing its extract.

herb, brown sugar, and liquor mixtures (which then can be composted or made into tea).

C. *Preparation of OHN*

1. In a clean glass jar, combine equal portions of each herb extract in the following proportions: 2 parts angelica : 1 part licorice : 1 part cinnamon : 1 part ginger or turmeric : 1 part garlic (see Fig. 1).
2. Stir slightly with a wooden spoon, then cover LOOSELY and store for 6 to 12 months in a cool, dark cabinet. It is important to keep the jar loosely covered to allow air circulation and to prevent the build-up of gases produced by the fermentation process.
3. Always SHAKE OHN before use.

How Is OHN Used?

When ready to use, shake the jar of OHN well and dilute with water to a ratio of 1:1,000 (Table 1). Make the solution weaker (1:1,500) if it is to be applied to stressed plants or during drought conditions, or if the OHN has been concentrated by storage for more than 6 months.

- Apply as a foliar spray on plants to repel insects. Apply during late afternoon or early morning hours.
- OHN can be mixed in a cocktail with Fermented Plant Juice (FPJ) and Brown Rice Vinegar (BRV) and applied as a foliar spray every 10–12 days to make plants less susceptible to powdery mildew and downy mildew.
- Apply diluted OHN as a soil drench prior to planting to activate dormant soil microorganisms.
- OHN is also an ingredient in other Natural Farming inputs, IMO#2 and IMO #4 (Park and DuPonte 2008), as part of a seed-soak solution or soil-treatment solution.
- As a prebiotic in poultry and livestock production (Samanta et al. 2013), OHN can be mixed with animals' drinking water (1:1,000 dilution) and offered *ad libitum* 3 times a week.

Figure 4: Dehydrated angelica is cubed and placed into a clean glass jar (1/3 full).

Figure 5: The fresh or rehydrated herb, combined with brown sugar and liquor, is stirred daily for 14 days to extract its healthful properties.

Table 1. Preparation of 1:1,000 OHN Solution

Water Volume	Amount of OHN (select ONE column only)		
	Kitchen utensil measurements	Fluid ounces (fl oz)	Milliliters (ml)
¼ gallon	1/3 teaspoon (tsp)	0.06	2
1 gallon	¾ tsp	0.13	4
5 gallons	1¼ tablespoons (Tbsp)	0.64	19
10 gallons	2½ Tbsp	1.28	38
25 gallons	little less than ½ cup	3.2	95
50 gallons	little more than ¾ cup	6.4	189

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