

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in Pinus edulis

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|---------------------|------------|----------|----------|-----------------------|--|
| 0 | 8,9-ISOPIMARIC-ACID | Plant | | | | J.S. Glasby Dict.Plis Containing 2ndary Metabolite. 1991. |
| 3 | ALANINE | Seed | 6050.0 | 6430.0 | -0.7921205426745387 | USDA's Ag Handbook 8 and sequelae) |
| 14 | ARGININE | Seed | 22510.0 | 23920.0 | -0.030504068309975933 | USDA's Ag Handbook 8 and sequelae) |
| 112 | ASCORBIC-ACID | Seed | 20.0 | 21.0 | -0.32584931994831046 | USDA's Ag Handbook 8 and sequelae) |
| 0 | ASH | Seed | 22600.0 | 27000.0 | -0.6280243315663969 | -- |
| 3 | ASPARTIC-ACID | Seed | 10540.0 | 11200.0 | -1.0110621613639723 | USDA's Ag Handbook 8 and sequelae) |
| 28 | CALCIUM | Seed | 59.0 | 117.0 | -0.7400347524509366 | -- |
| 0 | CARBOHYDRATES | Seed | 131700.0 | 205100.0 | -1.2649975929435797 | -- |
| 12 | COPPER | Seed | 10.0 | 12.0 | -0.2552864959153795 | -- |
| 2 | CYSTINE | Seed | 2100.0 | 2230.0 | -0.6400004513896891 | USDA's Ag Handbook 8 and sequelae) |
| 0 | FAT | Seed | 609000.0 | 648035.0 | 2.015540774603066 | -- |
| 15 | FIBER | Seed | 11000.0 | 53100.0 | -0.6449499340719145 | -- |
| 0 | GADOLEIC-ACID | Seed | 11640.0 | 12370.0 | 1.1288775598140333 | USDA's Ag Handbook 8 and sequelae) |
| 8 | GLUTAMIC-ACID | Seed | 19690.0 | 20925.0 | -0.8770731141347408 | USDA's Ag Handbook 8 and sequelae) |
| 12 | GLYCINE | Seed | 5890.0 | 6260.0 | -0.6784087064936613 | USDA's Ag Handbook 8 and sequelae) |
| 0 | HEMICELLULOSE | Seed | | 56000.0 | 1.0 | Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29. |
| 7 | HISTIDINE | Seed | 2770.0 | 2945.0 | -0.8451519352622784 | USDA's Ag Handbook 8 and sequelae) |
| 6 | IRON | Seed | 28.0 | 37.0 | -0.5287176209786577 | -- |
| 3 | ISOLEUCINE | Seed | 4500.0 | 4780.0 | -0.7288031126441246 | USDA's Ag Handbook 8 and sequelae) |
| 0 | KILOCALORIES | Seed | 5680.0 | 7140.0 | 1.7853683066498498 | -- |
| 2 | LEUCINE | Seed | 8340.0 | 8865.0 | -0.7864689107304623 | USDA's Ag Handbook 8 and sequelae) |
| 27 | LINOLEIC-ACID | Seed | 248820.0 | 264420.0 | 1.3477431955517754 | USDA's Ag Handbook 8 and sequelae) |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|------------------|------------|----------|----------|----------------------|------------------------------------|
| 0 | LINOLENIC-ACID | Seed | 7870.0 | 8365.0 | -0.43382998245072374 | USDA's Ag Handbook 8 and sequelae) |
| 4 | LYSINE | Seed | 4340.0 | 4615.0 | -1.0136950313408202 | USDA's Ag Handbook 8 and sequelae) |
| 65 | MAGNESIUM | Seed | 2180.0 | 2650.0 | -0.1169887078856715 | USDA's Ag Handbook 8 and sequelae) |
| 15 | METHIONINE | Seed | 2070.0 | 2200.0 | -0.5460811806678808 | USDA's Ag Handbook 8 and sequelae) |
| 13 | MUFA | Seed | 229420.0 | 243800.0 | 0.9721128191484206 | USDA's Ag Handbook 8 and sequelae) |
| 39 | NIACIN | Seed | 43.0 | 46.0 | 0.0932133460540848 | USDA's Ag Handbook 8 and sequelae) |
| 18 | OLEIC-ACID | Seed | 215280.0 | 228780.0 | 0.901605716043594 | USDA's Ag Handbook 8 and sequelae) |
| 13 | PALMITIC-ACID | Seed | 44160.0 | 46930.0 | 0.2687171251309469 | USDA's Ag Handbook 8 and sequelae) |
| 2 | PALMITOLEIC-ACID | Seed | 2500.0 | 2655.0 | -0.2347354824299904 | USDA's Ag Handbook 8 and sequelae) |
| 7 | PHENYLALANINE | Seed | 4430.0 | 4710.0 | -0.815674639294065 | USDA's Ag Handbook 8 and sequelae) |
| 4 | PHOSPHORUS | Seed | 145.0 | 590.0 | -1.2587591014584043 | USDA's Ag Handbook 8 and sequelae) |
| 14 | POTASSIUM | Seed | 5600.0 | 7853.0 | -0.41483433108703255 | -- |
| 0 | PROLINE | Seed | 6220.0 | 6610.0 | -0.9284389216111886 | USDA's Ag Handbook 8 and sequelae) |
| 0 | PRPTEIN | Seed | 115700.0 | 154100.0 | | -- |
| 4 | PUFA | Seed | 256680.0 | 272775.0 | 1.2718279447919925 | USDA's Ag Handbook 8 and sequelae) |
| 15 | RIBOFLAVIN | Seed | 2.0 | 3.0 | -0.20090831129253928 | USDA's Ag Handbook 8 and sequelae) |
| 7 | SALICYLATES | Seed | 5.0 | 6.0 | -0.3079859080069262 | J. Amer. Diet. Ass. 85(8):950. |
| 1 | SERINE | Seed | 4910.0 | 5220.0 | -1.0261557844237532 | USDA's Ag Handbook 8 and sequelae) |
| 0 | SFA | Seed | 93770.0 | 99650.0 | 0.4006923552454495 | USDA's Ag Handbook 8 and sequelae) |
| 1 | SODIUM | Seed | 675.0 | 860.0 | 0.6494631787875544 | -- |
| 8 | STEARIC-ACID | Seed | 20110.0 | 21400.0 | -0.10108270827658257 | USDA's Ag Handbook 8 and sequelae) |
| 31 | THIAMIN | Seed | 12.0 | 13.0 | 1.5307148108726454 | USDA's Ag Handbook 8 and sequelae) |
| 4 | THREONINE | Seed | 3670.0 | 3900.0 | -0.9478946559921904 | USDA's Ag Handbook 8 and sequelae) |
| 29 | TRYPTOPHAN | Seed | 1460.0 | 1550.0 | -0.6053664112887261 | USDA's Ag Handbook 8 and sequelae) |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Refernce Citation |
|------------------|----------|------------|---------|----------|---------------------|------------------------------------|
| 8 | TYROSINE | Seed | 4240.0 | 4505.0 | -0.7496706395400166 | USDA's Ag Handbook 8 and sequelae) |
| 3 | VALINE | Seed | 5980.0 | 6255.0 | -0.7089739224142836 | USDA's Ag Handbook 8 and sequelae) |
| 0 | WATER | Seed | 30000.0 | 59000.0 | -0.6470157712993156 | -- |
| 77 | ZINC | Seed | 40.0 | 50.0 | 0.1382020296387132 | -- |